

Women, Assets, and the Accumulation  
of Savings:  
A Comparative Analysis of Ecuador,  
Ghana and India

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The Gender Asset Gap Project is a joint initiative of an international research team that was formed in 2009 with four objectives: 1) to collect individual-level asset data from three different countries (Ecuador, Ghana and India) in order to demonstrate the importance and feasibility of collecting data on women's access to and ownership of property; 2) to identify the minimal set of questions on individual level asset ownership that are needed in multi-purpose household surveys to calculate the gender asset and wealth gaps; 3) to develop various measures of gender asset and wealth gaps that can be used by national governments to track progress toward Millennium Development Goal 3 on gender equality and women's empowerment; and 4) to identify the critical enabling or constraining social, economic, and institutional factors affecting women's asset ownership in order to help policymakers and others to improve women's claims to productive assets.

The project is housed at the Centre of Public Policy (CPP) at the Indian Institute of Management Bangalore (IIMB). The project team leaders are Hema Swaminathan, IIMB; Abena D. Oduro, University of Ghana; Carmen Diana Deere, University of Florida; Cheryl Doss, Yale University; and Caren Grown, American University. FLACSO-Ecuador hosted the field work in Ecuador.

The Gender Asset Gap Project Working Papers present preliminary results and have not been formally peer reviewed. They are circulated in order to stimulate discussion and critical comment. The authors hold the copyrights to the contents of the papers and any opinions expressed are solely theirs.



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# **Women, Assets, and the Accumulation of Savings: A Comparative Analysis of Ecuador, Ghana and India**

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**Abstract:** Ownership of financial assets is an important component of the path towards women's economic empowerment. Savings serve as a reliable and convenient way to cushion against economic shocks while enabling women to accumulate the means to purchase productive assets. Using data from Ecuador, Ghana, and the Indian state of Karnataka, this paper analyzes which women have savings, the type of savings, and how these are related to both individual and household characteristics. We find a gender gap in the incidence of savings in favor of men, although it is low for both men and women. Our results suggest women who are better educated, have paid employment, and are members of groups are more likely to have formal accounts. We also find that it is women's ownership of immovable property, not that of the household, that is related to their having accumulated savings in formal accounts. (145 words)

**Keywords:** gender, financial assets, immovable property

**JEL Codes:** O1, D10, D14

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## **1. Introduction**

Ownership of financial assets is an important component of the path towards women's economic empowerment. Savings serve as a reliable and convenient way to cushion against economic shocks while enabling women to accumulate the means to purchase productive assets. Savings may replace the need for costly credit or may be a prerequisite for participating in many credit programs. A woman with substantial savings of her own has a stronger fallback position and thus, may be able to exercise more bargaining power and decision-making capabilities within the household. In turn, this could allow her to accumulate individual wealth, invest in her children's education and nutrition, or enable her to leave an abusive relationship.<sup>1</sup>

And yet, no comparative, large-scale study has been done on the patterns of women's savings. While some research has tried to isolate the impacts of interventions to increase women's savings, their patterns of savings are still not very well understood. Important questions remain unanswered: Which characteristics are associated with women saving through formal accounts versus informal means? Does the level of household wealth influence how much a woman saves? Is having savings associated with owning physical assets, such as housing, agricultural land, and/or a business? What can be learned by comparing women's savings in countries at differing levels of development?

In this paper, we attempt to answer these questions through a detailed descriptive and econometric analysis of women's savings in Ecuador, Ghana, and the Indian state of Karnataka. Using data collected by the Gender Asset Gap project on these countries at differing levels of development, we analyze which women have savings, what kinds of financial savings they possess (formal or informal), and how these are related to both individual and household characteristics. While most of our analysis focuses on women, we compare both the incidence and values of men's and women's savings to examine gender differences in savings. Although there is a gender gap in favor of men, savings rates are low in all three countries for both men and women. Consistently, women who are better educated, have paid employment, and are members of groups are more likely to have formal accounts. While overall household physical wealth is positively correlated with women's savings, it is women's ownership of immovable property, not that of the household, that is related to her having accumulated savings.

## **2. Literature Review: Women and Savings**

The importance of women owning savings has been widely noted although less documented. Fletschner & Kenney (2014) argue that for rural women, having their own access to financial services (those not mediated through their husband) is important for two reasons: first, it addresses constraints to their productivity, and second, it gives them bargaining power to negotiate for a more efficient allocation of resources within their households. Their work draws both on feminist scholarship on women and savings and on recent impact evaluations of savings programs, especially those that consider intra-household issues. A review of the impact of

microfinance programs on women's empowerment suggests that there is evidence that "poor women may derive more economic benefits from savings than credit" (Mehra, *et al.*, 2012, p. 19).

Much of the early literature focused on women's involvement with informal savings. Rotating savings and credit associations (ROSCAs), where women contribute money each period and one member receives the pot, on a rotating schedule, have been highlighted as a way for women to manage their savings and accumulate sums for large expenses in a variety of contexts across developing countries (Ardener, *et al.*, 1995; Gugerty, 2007; Besley *et al.*, 1993).

Recently, much more data has become available on women's participation in the formal financial sector. The Global Findex Database, developed by the World Bank, has made available 2011 data on participation in the formal financial sector by individuals in 148 countries. An analysis of the data for developing countries finds a persistent gender gap in favor of men in terms of who has a formal account (Demirguc-Kunt & Klapper, 2012).

Some work has examined the correlates of women having formal savings accounts. Again using the Findex data for developing countries, Demirguc-Kunt, Klapper and Singer (2013) find the following characteristics are positively associated with women having an account: age, having only one adult in the household, being married, divorced/separated, or widowed as opposed to never married, and being a formal business owner.

Because savings are seen as an important component of poverty reduction, many interventions aim to increase savings, especially among the poor in developing countries. Karlan *et al.* (2014) review the impact evaluations of these programs and set out a research agenda. While many of the interventions they review include women, relatively few find significant gender gaps in the take-up of the programs. They conclude that gender is one of many mediators of the treatment effects, yet there is little discussion of gender issues, except within the context of intra-household bargaining. They identify five sources of frictions that may result in under-saving among the poor: high transactions costs, lack of trust and regulatory barriers, information and knowledge gaps, social constraints, and behavioral biases. All would be expected to have differential impacts on the savings behavior of men and women. In order to fully understand the impacts of savings interventions, a gender analysis of the context and constraints is critical.

Many interventions focus on the act of saving rather than the amount that is accumulated. The literature does not always clearly distinguish between having a formal account, depositing money into the account, and holding an account with a positive balance.

Two empirical studies consider both whether an individual has an account and whether they use it as a vehicle to save. In Kenya, people were randomly selected to receive vouchers that waived fees for opening a formal bank account (Dupas, *et al.*, 2012). They find that women were less likely to open accounts than men; but among those who opened an account, women were more likely to actively use it. Another randomized controlled study in Ghana found that individuals were willing to open a savings account when reached through door-to-door marketing campaigns. Yet, two months later, relatively few of them were actively using the account (McConnell, 2012). In our analysis, we treat savings as an asset and thus consider

whether the respondent has an account and whether they have a level of savings in the account above an appropriate threshold level.

There is relatively little information on the relationship of savings to the ownership of assets. Recent evidence suggests that asset ownership provides greater stability to vulnerable households and individuals than income, which may be subject to fluctuations. Thus, policy interventions that aim to increase assets among marginalized men and women may have implications for savings behavior. Of particular interest to us is the association between savings and asset ownership by women themselves in contrast to household level asset ownership.

Two field experiments explicitly considered the relationship between savings and assets. One project in Nepal targeted poor female household heads, offering formal savings accounts with no fees (Prina, 2013). The majority of those given the option did open accounts and use them to save. The authors were concerned that formal accounts would crowd out other kinds of asset or savings accumulation, but found no evidence of this. A project in Kenya offered married couples the option to open up to three accounts: individual accounts in the name of the husband and the wife, respectively, and/or a joint account (Schaner, 2013). The interest rates were randomized across the options. Subsidies to individual accounts owned by either men or women increased investment in assets owned individually, especially small businesses. Subsidies to joint bank accounts led to investment in livestock and the dwelling. Yet, neither of these studies considers whether women who own assets are more likely to also have savings.

The converse may also be true where asset accumulation is facilitated through savings. For example, Individual Development Accounts in the US help low income families save to purchase assets. In one program, savings in the account were matched at a ratio of two to one if the funds were withdrawn to purchase a home. Among renters at the baseline, there was an increase in home ownership and a reduction in other financial assets (Mills, *et al.*, 2008). However, a follow-up study found that ten years after the program was initiated it had not had an impact on long term home ownership rates (Grinstein-Weiss, 2013).

Thus, while there is an extensive literature on interventions to promote savings, there is little information on the relationship of savings accumulation and asset ownership.

### **3. Methodology & Data**

The Gender Asset Gap project collected individual-level asset data to calculate measures of the gender asset and wealth gaps. The surveys were nationally representative in Ghana and Ecuador and representative at the state level for Karnataka, India; they were fielded in 2010 after six months of qualitative field work.<sup>2</sup> Two survey instruments were administered to the adults most familiar with the household's assets. The first included an inventory of physical assets owned by members of the household and the identity of the asset owners. The second instrument was administered separately to at most two adult members of the household and collected information on ownership of financial assets.

The qualitative fieldwork revealed that while it was likely that one individual within the household would know about the physical assets owned by all household members, it was less likely that this person knew about the financial assets of other household members. This is consistent with evidence elsewhere which suggests that husbands and wives may not have full information about each other's savings and bank accounts (Fletschner & Kenney, 2014). Thus, each of the two respondents was asked only about his or her own financial assets, and whether these were held individually or jointly.

In Ecuador, the sample of 2892 households is representative of rural and urban areas and the two major regional geographic and population groupings of the country, the highlands and coast. A total of 4668 persons completed the individual questionnaire, including the financial assets section. In Ghana, 2170 households were surveyed and 3272 persons answered the individual questionnaire; the survey is representative of the ten administrative regions of the country. In Karnataka, a total of 4110 households were surveyed across the rural and urban areas of nine districts covering all agro-climatic zones of the state; 7095 individuals completed the individual questionnaire.

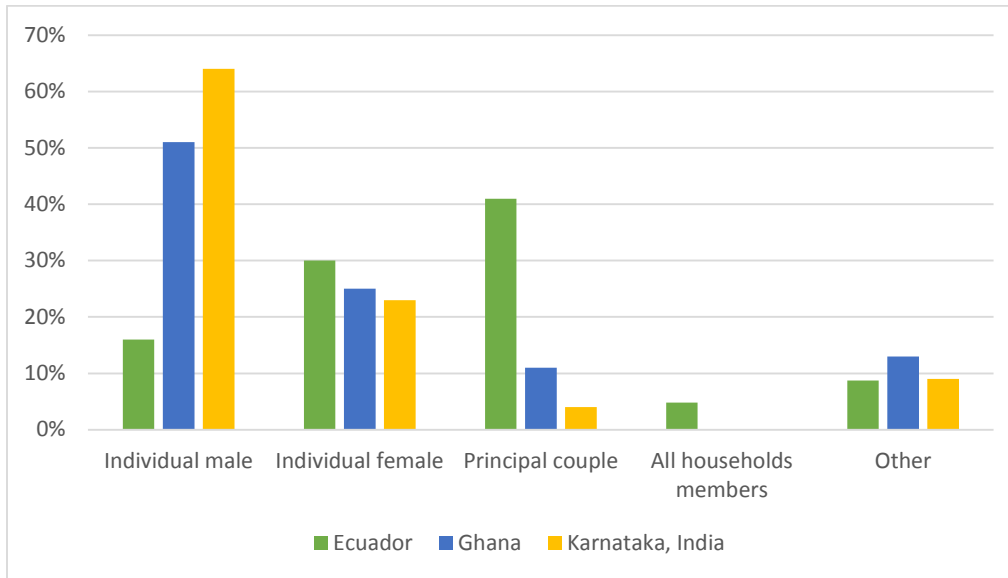
#### **4. Country Context: Ecuador, Ghana and Karnataka, India**

The three countries differ along a set of important dimensions, including population, urbanization, and level of development. Ecuador has the lowest population (14 million in 2010) and is both the most urbanized and most developed of the three. Over two-thirds of its residents live in urban areas and the country has a Human Development Index (HDI) of 0.720 (UNDP, 2011). Ghana, like much of Sub-Saharan Africa, is undergoing rapid urbanization; while under 30% of the population lived in urban areas in 1970 that figure rose to 50% by 2010. Its HDI is substantially lower than Ecuador's at 0.541 (Ibid.). Karnataka's population of 52 million is higher than Ghana and Ecuador combined. Despite Karnataka being relatively urbanized compared with other states in India, it is still much more rural than either Ecuador or Ghana, with only 38% of its population living in urban areas. Karnataka's HDI, at 0.519, is marginally lower than Ghana's (Government of India, 2011).

Previous work suggests that a country's legal marital and inheritance regimes provide important insights into the share of assets owned by women (Doss, *et al.*, 2011; Deere, *et al.*, 2013). The marital regime determines whether property acquired during marriage is owned individually or jointly and how it would be distributed should the union dissolve. Of the three countries examined, Ecuador is the only one with a partial community property marital regime, which means that all property—except for inheritances—acquired by either spouse during the marriage belongs jointly to the couple. Inheritances and property acquired prior to marriage remain individual property. Both Ghana and India have separation of property marital regimes, meaning marriage does not automatically confer any legal rights over the property acquired by one's spouse, and assets brought into the marriage or acquired during marriage remain individual property. The separation of property regime disadvantages women, since it fails to recognize

their non-monetary contributions to the household economy. The joint property system in Ecuador combined with inheritance norms that treat children of both sexes equally results in a much lower gender asset gap in all of the key assets. In all three countries, the largest component of individual wealth, for both men and women is their current residence. Figure 1 shows the distribution of the principal residence by form of ownership.<sup>3</sup> While in Karnataka and Ghana the majority of residences are owned by individuals, primarily individual men, in Ecuador over 40% are owned jointly by the principal couple.

**Figure 1. Distribution of ownership of principal residence, by form of ownership.**

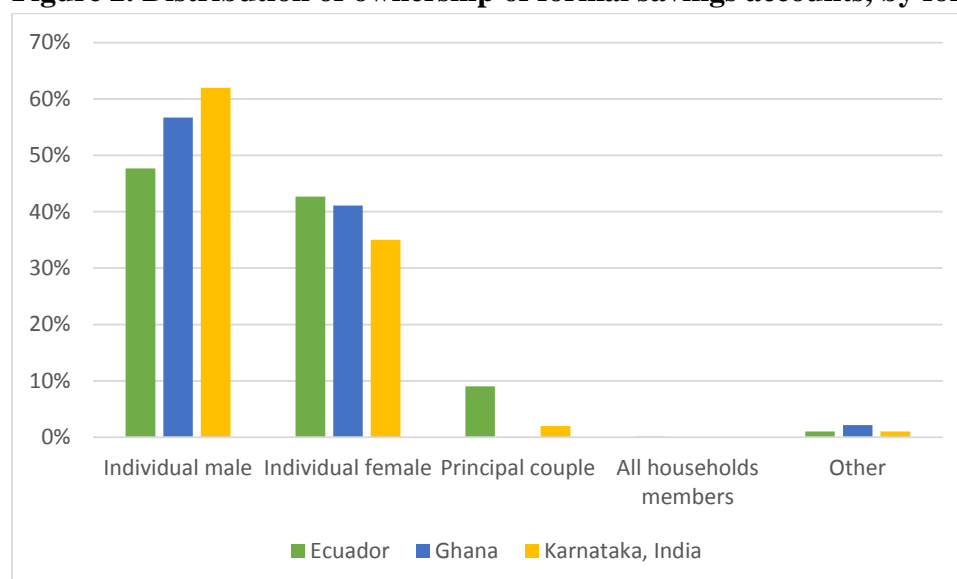


Source: Doss et al. (2011).

In Ecuador, this contrasts markedly with the ownership patterns for formal savings accounts, which are almost all held individually (Figure 2). Notwithstanding its community property marital regime, most of the savings accounts are in one person's name and are perceived as owned by the individual. In Karnataka and Ghana, couple and other joint ownership is even lower for financial assets than for physical assets.



**Figure 2. Distribution of ownership of formal savings accounts, by form of ownership.**



Source: Doss et al. (2011).

The World Bank Findex database provides information for 2011 on the percentage of adults (age 15+) with formal savings accounts. In Ecuador, 37% of the adults sampled report owning a formal savings account; in Ghana, the comparable figure is 29%. State-level data is not available for Karnataka, but overall for India, 35% report a formal account.<sup>4</sup> These contrast with the rates in countries such as the United States and United Kingdom, where 88% and 97%, respectively, report a formal savings account. Thus, in all three countries analyzed here, there is considerable scope for increasing access to formal savings accounts.

Although our sample includes only the principal adults in each household, we find a similar proportion of people with formal savings accounts. Table 1 shows our survey results on the percentage of respondents (age 18+) who have formal savings accounts, money held as informal savings, and those who have any savings in either or both forms.<sup>5</sup> In all three countries, more people report having formal accounts than informal savings, but the incidence of informal holdings is higher in Ghana and Karnataka than in Ecuador. Definitions of what comprises formal and informal for each country are discussed below.

**Table 1. Percentage of total respondents who have formal savings accounts and informal savings.**

	N=	Formal Accounts	Informal Savings	Formal Accounts and/or Informal Savings
Ecuador	4,668	34%	7%	39%
Ghana	3,270	27%	22%	45%
Karnataka	7,091	34%	22%	49%

For formal savings accounts, Table 2 presents the incidence disaggregated by gender and by residence of the respondent. In both rural and urban areas of all three countries, a higher percentage of men than women have formal savings accounts. And in all three countries, a greater proportion of respondents in urban areas have formal savings accounts.

**Table 2. Percentage of total respondents who have formal savings accounts, by sex and locale.**

		Rural		Urban		Total	
			N		n		n
Ecuador	Women	22%	873	31%	1,783	28%	2 656
	Men	31%	687	49%	1,325	43%	2 012
Ghana	Women	13%	1,154	32%	636	20%	1480
	Men	24%	974	56%	506	35%	1790
Karnataka	Women	23%	2,430	26%	1,331	24%	3,761
	Men	43%	2,197	49%	1,133	45%	3,330

Table 3 presents the mean balance in accounts held by men and women, for those who have a positive balance in their account (in US PPP dollars for Ghana and India). Men have a higher balance of informal savings than women in all three countries. Among formal account holders, only for urban respondents in Ecuador is there a statistically significant difference between men and women. The total savings balance (any savings) is significantly higher for men than for women in urban areas of Ecuador and Karnataka and in rural areas of Ghana.

The economic contexts in which Ecuadorian, Ghanaian, and Indian women save differ dramatically. A précis of each of these contexts—including the makeup of formal and informal savings structures—is presented before we discuss specific aspects of women’s savings.

The Ecuadorian financial system essentially collapsed in 1999-2000, when 22 major banks failed (representing 60% of the system). This led to the dollarization of the economy in late 2000, causing a significant devaluation. Most of the middle class lost their life savings and there was a significant migration of lower/middle class men and women (in approximately equal numbers) to Europe. A relatively modern system of financial regulation was subsequently put into place, and since 2005 Ecuador has been lauded for its financial stability and institutional accountability.

**Table 3. Mean positive savings balance, by sex and locale (in US PPP Dollars).**

		Rural			Urban		
		Formal	Informal	Any	Formal	Informal	Any
Ecuador	Women	333 (775)	94 (134)	305 (728)	652 (1850)	95 (145)	530 (1655)
	Men	443 (904)	169 (271)	408 (853)	1045 (4773)	323 (754)	984 (4525)
	P value		**		**	***	***
Ghana	Women	747 (2982)	157 (276)	422 (1944)	790 (2000)	157 (216)	596 (1952)
	Men	1261 (6397)	298 (698)	883 (4842)	824 (1998)	274 (435)	792 (1947)
	P value		***	*		***	
Karnataka	Women	469 (3254)	235 (374)	397 (2230)	1,665 (9420)	279 (841)	1,108 (7173)
	Men	409 (1934)	410 (893)	442 (1,902)	2,422 (10597)	1,182 (2897)	2,461 (10519)
	P value		***			***	*

Note: Standard deviation below each mean, in parentheses. Levels of significance are based on Levene's test for homogeneity of variance: \*significant at 10%; \*\*significant at 5 %; \*\*\*significant at 1%.

Ecuador's formal financial system is led by the Superintendancy of Banks & Insurance which governs all public and private banks, and the Superintendancy of the Popular and Solidarity Economy which since 2013 supervises all forms of cooperative associations, including credit unions, savings and loans cooperatives, and increasingly non-government organizations (NGOs) with microfinance programs. The latter are in the formal sector. Moreover, a number of the private banks and most savings and loans cooperatives operate microfinance programs.

In Ecuador, informal savings consists of informal savings groups; cash held with third parties; and rainy day funds that are kept at home. The informal savings groups are usually a group of neighbors. Members contribute a certain amount each week (not usually in a bank account) and rotate the person who gets the "pool" among them. People use the "third party" option for safe-keeping to prevent themselves from being tempted to spend their money. Rainy day funds are kept at home for emergency use, and are accumulated to make large expenditures (e.g. to purchase school uniforms and supplies or make a down payment on an appliance).<sup>6</sup>

**Table 4. Percentage of women respondents who have savings, by locale and type of account.**

	Ecuador		Ghana		Karnataka	
	Urban	Rural	Urban	Rural	Urban	Rural
<b><i>Formal accounts: Total</i></b>	31%	22%	32%	13%	26%	23%
Bank account	19%	11%	27%	10%	23%	21%
Cooperative/credit union/savings & loan/NGOs	16%	14%	6%	3%	NA	NA
Other formal, including stocks & bonds, and post office savings	1%	1%	2%	-	6%	3%
<b><i>Informal: Total</i></b>	10%	4%	28%	20%	25%	40%
Informal savings program <sup>a</sup>	1%	1%	14%	4%	24%	39%
Deposited w/ 3 <sup>rd</sup> party	0%	0%	2%	1%	2%	1%
Cash savings at home	8%	3%	14%	15%	NA	NA
Total women	1783	873	638	1154	1331	2430

<sup>a</sup>Includes cooperatives, NGOs, and micro-finance savings for India.

In Ecuador, women, both urban and rural, are much more likely to have formal savings accounts than informal savings, although overall, the incidence of both types is higher for urban women. This holds true across wealth quintiles as well as at the mean (see supplemental, online appendix). Urban women are more likely to have formal bank accounts than accounts at credit unions or savings and loan cooperatives; for rural women this relationship is reversed. The most common form of informal savings is holding cash savings at home.

Ghana's financial sector expanded rapidly in the last two decades, seeing a marked increase in the number of commercial banks and non-financial banking institutions. In recent years, the commercial banks have given more attention to small lenders and savers, and several of these banks have established units to cater to the needs of small- and medium-scale enterprises. In 2006, policy sought to create a favorable environment for the development of microfinance. Microfinance accounts can be held with banks, NGOs, Savings and Loans, cooperatives, and credit unions. While most formal savings are done through bank accounts, savings and loans companies and credit unions also play a minor role in providing formal sector accounts.

In Ghana, informal savings groups (ROSCAs) and *susu* are the prevalent forms of informal savings. The ROSCA's work is similar to the neighborhood groups in Ecuador. *Susu* involves the regular—sometimes daily—deposit of an agreed sum of money with a collector for a specific period of time. The collector visits savers at their workplace or homes for the deposit and charges a service commission. Saving cash at home is relatively common in both urban and rural areas.

The 1990s saw an opening up of all sectors of the Indian economy, including the financial sector. In spite of liberalization and increased competition in the banking sector, public sector banks (including the nationalized banks, the State Bank of India, and Regional Rural Banks) still dominate the banking system. Post offices in India provide various small savings schemes and other financial services; these are categorized as other formal accounts in Table 4.

In India, microfinance is seen as one pathway to improving financial inclusion and is now a small, but increasingly important, source of finance for India's poor. Microfinance is officially considered a semi-formal system as it aims to combine the safety and reliability of formal finance with the convenience and flexibility of informal finance to serve the poor (Basu, 2005). The majority of microfinance groups are based on the self-help group model. We have categorized it as informal savings through a cooperative or NGO, which matches the common understanding of microfinance in India. Microfinance programs that include savings make up a considerable share of those with informal savings, particularly in rural areas.

The Karnataka data does not distinguish between cash savings and any cash that respondents had on hand for immediate use. It is thus not comparable with the measure of cash savings collected for Ecuador and Ghana and has been excluded in the analyses.

## 5. Characteristics of the Samples

The analytical samples are composed of the women respondents for whom there is complete information on all the variables. While the design of the questionnaires was similar across the three countries, because of the differences in context, the variables used differ slightly by country. This is obviously the case for the relevant religion, ethnicity and caste variables. Other differences are discussed below. Table 5 presents the mean and standard deviations of the variables used in our analysis.

**Table 5. Characteristics of the sample of respondents.**

	<b>Ecuador</b>		<b>Ghana</b>		<b>Karnataka</b>	
	<b>Mean</b>	<b>Std. Dev.</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Mean</b>	<b>Std. Dev.</b>
<b>Age</b>	43.7	14.9	43.9	16.2	40.6	13.0
<b>Marital Status</b>						
Married	48%	0.50	54%	0.49	81%	
Never married	4%	0.20	7%	0.24	NA	
Widow/divorced/ separated	22%	0.42	27%	0.44	NA	
Currently single	NA		NA		19%	0.39
Consensual union	26%	0.44	12%	0.32	NA	
<b>Education</b>						
No schooling	NA		41%	0.49	46%	0.50
Some primary	24%	0.4	12%	0.32	3%	0.16

Completed primary	46%	0.5	13%	0.33	26%	0.44
Some or completed secondary	16%	0.4	23%	0.42	17%	0.37
Beyond secondary	15%	0.4	10%	0.07	9%	0.28
Other	NA		1%	0.29	NA	
<b>Employment</b>						
Self-employed/	36%	0.48	67%	0.47	6%	0.25
Wage worker			6%	0.23	5%	0.21
Public	4%	0.20	NA		NA	
Private	19% <sup>a</sup>	0.39	NA		NA	
Casual/domestic	NA		2%	0.12	34%	0.47
Contributing family worker	7%	0.25	10%	0.30	15%	0.35
Not econ. active	34%	0.47	16%	0.36	40%	0.49
<b>Wealth Quintile</b>						
Quintile 1	20%	0.40	18%	0.38	18%	0.39
Quintile 2	20%	0.40	19%	0.38	20%	0.40
Quintile 3	20%	0.40	21%	0.40	22%	0.41
Quintile 4	20%	0.40	21%	0.41	21%	0.41
Quintile 5	20%	0.40	21%	0.40	19%	0.39
<b>Owns Property</b>						
Household	69%	0.48	60%	0.49	82%	0.39
Woman	55%	0.5	27%	0.44	25%	0.43
<b>Savings</b>						
Formal account	28%	0.45	20%	0.39	24%	0.43
Only informal	8%	0.27	19%	0.39	24%	0.43
No savings	66%	0.47	61%	0.48	51%	0.50
Formal savings (above threshold)	16%	0.36	16%	0.36	22%	0.41
<b>Other</b>						
Member of group	18%	0.007	62%	0.48	36%	0.48
Urban	67%	0.47	36%	0.48	35%	0.48
<b>Race/Religion/Caste</b>						
Indigenous	5%	0.21	NA		NA	
Afro-descendant	5%	0.21	NA		NA	
Hindu	NA		NA		82%	0.38
Muslim	NA		NA		14%	0.35
Christian	NA		NA		3%	0.18
Forward caste	NA		NA		20%	0.40
Backward caste	NA		NA		55%	0.50
Sch.Castes / Tribes	NA		NA		25%	0.43
N=	2,656		1,772		3,740	

<sup>a</sup> For Ecuador, private wage workers includes casual and domestic workers.

The mean age is about the same in all three countries, ranging from 41 to 44.<sup>7</sup> In terms of marital status, while living in a consensual union is more common in Ecuador, Karnataka has the highest proportion of married women and Ghana, the highest proportion who are widowed/divorced/separated or never married. In the case of Karnataka, the categories of widowed/divorced/separated and never married have been collapsed into the category of currently single since their combined incidence is relatively low.

Ecuador shows a higher mean education level than the other countries. Since few respondents report having no schooling, they are combined with those who have not completed primary schooling, totaling 24%. In Ghana and Karnataka, 41% and 46% of the respondents, respectively, have no schooling whatsoever. The “other” category for Ghana is comprised primarily of Koranic schools. While 15% of the respondents in Ecuador have education beyond secondary, only 9% to 10% do so in Ghana and Karnataka.

The patterns of employment also differ widely across countries. In Ghana, 67% of respondents are self-employed in contrast to 6% in Karnataka (employers are treated as self-employed in all three countries.) In Karnataka, over 40% report that they are not economically active; of those in the labor force, the majority, 34%, are casual or domestic workers. The proportion of not economically active is also high in Ecuador, at 34% and much lower at only 16% of respondents in Ghana. Karnataka also has the highest proportion of contributing family workers (those who work on family owned farms or enterprises without assured or regular monetary compensation). Following the convention of official statistics in Ecuador, a distinction is made between wage work in the public and private sectors.

Wealth quintiles were created at the household level, based on household gross physical wealth.<sup>8</sup> Two other measures indicating wealth status are included. The first is ownership of immovable property including housing, land and other real estate by anyone in the household. Sixty percent of the respondents in Ghana, 69% in Ecuador, and 82% in Karnataka live in households where someone owns immovable property. The second is whether women respondents themselves own immovable property, either individually or jointly with someone else. While 55% of the respondents in Ecuador do so, only 27% and 25% of the women in Ghana and Karnataka, respectively, own such immovable property.

Formal and informal savings have been defined above. Three mutually exclusive categories are created: women who have a formal savings account (whether or not they also have informal savings), women who have only informal savings, and women with no savings. Although Ecuador has the highest percentage of respondents with formal savings accounts of the three countries, it also has the highest percentage of respondents with no savings. Over half of the respondents in all three countries report no savings.

In addition, we consider those with formal savings accounts with a positive balance in the account above a certain threshold. In Ecuador and Ghana, many people working in the formal sector are required to have bank accounts where their pay is deposited directly. While some use these accounts for savings, others simply withdraw the money each month. It is important to distinguish between those who have a bank account and those who use their account explicitly to

save. Thus, for the analytical work we define someone as having formal savings if their account (or combination of accounts) contains the amount equivalent to the value of five days of average per capita consumption (with separate measures created for urban and rural households.).<sup>9</sup> In Ghana, 17% of those with formal accounts do not meet this threshold to be considered formal savers. In Karnataka, 23% do not meet this threshold, and in Ecuador, 45%. Thus, a substantial group of people have formal accounts but no accumulated savings.

Group membership may be related to savings in two ways. First, women may save through groups and organizations. Second, group membership can be a proxy for women's broader social networks. Participating in organized groups may be empowering, increasing women's voice in the community, and providing access to information. The patterns of whether the respondent was a member of a group varied; only 18% of respondents in Ecuador belong to a group while over 60% in Ghana do so. In Ghana and Ecuador, the majority of these groups are religious organizations, while in Karnataka they are largely micro finance groups.

In Ecuador, we consider two race/ethnicity variables – whether the respondent is indigenous or Afro-descendant in comparison to white/mestizo/other. Together, these are only 10% of the respondents. In Karnataka, we include variables for religion; 82% of the respondents are Hindu. We also include measures of caste where the Scheduled Castes (SC) and Schedules Tribes (ST) represent the historically oppressed and most vulnerable sections of society. In Ghana, religion and ethnicity variables were not related to savings patterns and thus, were excluded from the analysis.

## **6. Which Women Save?**

The first set of questions we analyze is about the characteristics of women who have either formal accounts, informal savings, or no savings. We expect that the three groups are different. Using a multinomial logit estimation, we consider which women have each type of savings or no savings in each country. One potential concern with the multinomial logit models is the violation of the Independence of Irrelevant Alternatives (IIA) property. However, tests show that these models do not violate the IIA assumption suggesting the outcomes being modeled are not close substitutes. We correct for household-level clustering, as there may be more than one respondent within the same household. We report marginal effects and our discussion focuses only the statistically significant results, unless otherwise noted.

In Ecuador, as seen in Table 6, every level of education has a positive relationship with having a formal savings account, compared to not having finished primary. Working for a wage in the public or private sector also has a positive effect, compared to not being economically active. The marginal effect of public sector employment (where wages are usually deposited directly into bank accounts) is much larger than for private sector employment. The conditions of employment in the private sector probably vary much more than in the public sector with regards to such key factors as payment of the official minimum wage and the stability of employment. A



similar positive effect is found for being a member of a group. Being in a consensual union as opposed to a formal marriage is negatively associated with having a formal account.

**Table 6. Ecuador, multinomial logit of the correlates of women's savings.**

Variables	Formal savings			Informal savings only			No savings		
	Marginal effect	Robust standard error		Marginal effect	Robust standard error		Marginal effect	Robust Standard error	
Age	-0.003	0.003		-0.002	0.002		0.005	0.003	
Indigenous	-0.009	0.042		-0.030	0.030		0.039	0.046	
Afro-descendant	-0.055	0.045		0.004	0.018		0.051	0.045	
Never married	0.036	0.040		-0.064	0.050		0.027	0.054	
Widowed/divorced	-0.001	0.021		0.023	0.012	*	-0.023	0.023	
Consensual union	-0.096	0.021	***	0.037	0.011	***	0.058	0.022	***
Completed primary	0.148	0.025	***	0.003	0.012		-0.151	0.025	***
Some or completed secondary	0.254	0.029	***	-0.009	0.015		-0.245	0.030	***
Beyond secondary	0.361	0.030	***	-0.008	0.017		-0.353	0.032	***
Self-employed/ employer	0.140	0.020	***	0.028	0.010	***	-0.167	0.021	***
Wage worker									
Public	0.506	0.045	***	-0.693	0.057		0.187	0.063	***
Private	0.158	0.023	***	-0.008	0.013		-0.150	0.025	***
Contributing family worker	0.063	0.037		-0.024	0.026		-0.038	0.040	
Group membership	0.051	0.020	***	0.002	0.011		-0.053	0.022	**
Urban	0.018	0.018		0.046	0.012	***	-0.064	0.020	***
N=	2656								
Log Likelihood	-1823.102								
Wald ( $\chi^2$ )	10882.24								
Pseudo R-squared	0.129								

Different sets of factors are correlated with having only informal savings. Being either widowed/divorced/separated or living in a consensual union has a positive effect on having only informal savings, as compared to being married. Being self-employed and living in an urban area also have a positive impact on informal savings.

In Ghana, (Table 7) the effects of age, education (at all levels except Koranic schooling), both self-employed and wage work, group membership and living in an urban area are all positively related to having formal savings accounts.

The patterns for informal savings are similar, except that age has a negative correlation with informal savings. The effects of education are still positive, but smaller. There is no effect of being a wage worker.

Education (with the exception of some primary and Koranic schooling), being in a consensual union, employment (with the exception of casual workers), group membership and living in an urban area are negatively related with having no savings.

**Table 7. Ghana, multinomial logit of the correlates of women's savings.**

Variables	Any formal savings			Informal savings only			No savings		
	Marginal effect	Robust standard error		Marginal effect	Robust standard error		Marginal Effect	Robust Standard Error	
Age	.0021	.0007	***	-.0029	.0008	***	.0007	.0341	
Never married	.0411	.0391		.0005	.0399		-.0417	.0490	
Widowed/divorced	-.0300	.0251		.0295	.0256		.0005	-.0290	
Consensual union	.0182	.0284		.0575	.0319	*	-.0757	.0356	**
Some primary	.0143	.0246	***	.0027	.0294	*	-.0171	.0341	
Completed primary	.0864	.0277	***	.0631	.0326	**	-.1495	.0366	***
Some or completed secondary	.1869	.0265	***	.0470	.0265	*	-.2340	.0323	***
Beyond secondary	.3097	.0444	***	.0011	.0378		-.3109	.0495	***
Other*	.1092	.1004		.0144	.1208		-.1236	.1438	
Self-employed/ employer	.0695	.0246	***	.154	.019	***	-.2239	.0286	***
Wage worker	.2499	.0524	***	.0447	.039		-.2947	.0598	***
Casual/domestic	.0414	.0636		-.0035	.0430		-.0379	.0710	
Contributing family worker	-.0284	.0353		.16055	.0381	***	-.1321	.0449	**
Group membership	.0596	.0189	***	.0379	.1951	**	-.0976	.0230	***
Urban	.0864	.0197	***	.0484	.022	**	-.1349	.0249	***
N=	1,772								
Log Likelihood	-1421.59								
Wald ( $\chi^2$ )	383.79								
Pseudo R-squared	0.146								

Many of the patterns for Karnataka (Table 8) are similar to Ecuador and Ghana's. Age has a positive effect on formal savings and a negative effect on having only informal savings. Not being currently married is positively correlated with formal savings, but does not have a significant effect on having only informal savings.

**Table 8. Karnataka, India, multinomial logit of the correlates of women's savings.**

Variables	Formal savings			Informal savings only			No savings		
	Marginal effect	Robust standard error		Marginal effect	Robust Standard Error		Marginal effect	Robust standard error	
Age	0.005	0.001	***	-0.002	0.000	***	-0.003	0.000	***
Muslim	-0.044	0.029		-0.026	0.025		0.070	0.024	***
Christian	0.032	0.040		-0.003	0.030		-0.029	0.032	
Forward caste	0.000	0.031		0.006	0.025		-0.006	0.025	
Backward caste	-0.011	0.016		-0.008	0.012		0.019	0.014	
Not currently married	0.084	0.017	***	-0.022	0.014		-0.063	0.015	***
Some primary/literate	0.043	0.042		0.004	0.027		-0.047	0.044	
Completed primary	0.085	0.016	***	-0.040	0.012	***	-0.044	0.015	***
Some or completed secondary	0.177	0.024	***	-0.074	0.016	***	-0.104	0.020	***
Beyond secondary	0.395	0.033	***	-0.139	0.022	***	-0.256	0.025	***
Self-employed/ employer	0.083	0.029	***	-0.033	0.020		-0.050	0.026	*
Wage worker	0.349	0.040	***	-0.115	0.026	***	-0.234	0.036	***
Casual/domestic	0.061	0.018	***	-0.025	0.013	*	-0.035	0.016	**
Contributing family worker	0.014	0.021		-0.002	0.015		-0.012	0.018	
Group membership	0.101	0.015	***	0.616	0.014	***	-0.717	0.010	***
Urban	-0.044	0.015	***	0.033	0.012	***	0.011	0.013	
N=	3,740								
Log Likelihood	-2327.217								
Wald ( $\chi^2$ )	1453.30								
Pseudo R-squared	0.395								

\*significant at 10%; \*\*significant at 5 %; \*\*\*significant at 1%.

The patterns for education, however, differ in Karnataka. Simply having primary education or being literate does not have an effect on savings, either formal or informal. Higher levels of education have a positive effect on formal savings and a negative effect on informal savings. Being self-employed has a positive impact on formal savings, but no significant impact on informal savings. Being either a wage worker or a casual/domestic has a positive effect on formal savings and a negative effect on informal savings. And living in an urban area has a negative effect on formal savings, while it is positive for informal savings. The seemingly anomalous result of women in rural areas being more likely to have formal savings than women in urban areas may be explained as one of the impacts of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). In 2009, the scheme mandated that all beneficiaries should have bank accounts into which the wages would be directly credited, and Karnataka has since virtually stopped cash payment of wages. The survey data shows that 52% of respondents who have formal accounts have also worked under the MGNREGA or have applied for employment and are awaiting receipt of their job cards. Increasing age, not being currently married, having completed at least some primary/higher primary, having an employment that pays in cash or kind, and being member of a group decrease the probability of being a non-saver while being a Muslim increases that probability.

A key comparative finding from these three countries is with regard to who has formal savings. The association between having completed primary school or higher levels of education and having formal savings accounts holds in all three countries. Moreover, the marginal effect is substantially higher for education beyond secondary school than for lower levels. Another consistent finding in having a formal savings account is the importance of being either self-employed or a wage worker compared to not economically active. In other words, having income of one's own appears to be a precondition for a formal account. Finally, group membership is also positively associated with having a formal account in all three countries.

The correlates of having only informal savings vary much more across the three countries. Education is positively correlated with informal savings in Ghana, negatively correlated in Karnataka, and has no effect in Ecuador. Being a wage worker has no relationship with having informal savings in Ecuador and Ghana and the effect is negative in Karnataka.

Finally, the patterns differ for both formal and informal savings with regard to whether the respondent lives in an urban or rural area. The former has a positive correlation on informal savings in Ecuador, a positive correlation with both informal and formal savings in Ghana, and a positive correlation with informal savings and a negative correlation with formal savings in Karnataka. Thus, it is important not to make generalizations about the patterns of rural and urban women's forms of savings across countries.

## **7. Wealth, Asset Ownership and Women's Formal Savings Accounts**

Financial savings are one form of savings and accumulation. Women who are wealthier or live in wealthier households may have more avenues to accumulate financial savings. In this

section, we explicitly consider women who have formal savings above the threshold level discussed above. Thus, these are women who have accumulated savings in their formal accounts beyond weekly consumption requirements; it excludes those with zero or minimal balances. Two measures of wealth and ownership of physical assets are considered: household wealth quintiles (based on physical assets) and ownership of immovable assets.

**Table 9. Logit analysis of women who are formal savers (above threshold level) and relationship with wealth quintile.**

Variables	Ecuador			Ghana			Karnataka		
Quintile 2	0.059	0.027		.077	.022	***	0.050	0.019	**
Quintile 3	0.100	0.027	**	.129	.022	***	0.055	0.020	***
Quintile 4	0.133	0.026	***	.116	.021	***	0.060	0.020	***
Quintile 5	0.200	0.026	***	.206	.025	***	0.138	0.022	***
Age	-0.007	0.003	***	.0007	.0007		0.004	0.001	***
Some primary				.017	.023		0.034	0.038	
Completed primary	0.074	0.023	***	.069	.026	***	0.079	0.016	***
Some or completed secondary	0.145	0.026	***	.157	.024	***	0.150	0.023	***
Beyond secondary	0.151	0.028	***	.211	.039	***	0.366	0.033	***
Other*				-.018	.070				
Consensual union	-0.058	0.019	***	.042	.027				
Never married	0.064	0.029	**	.055	.036				
Widowed/divorced/separated	0.015	0.017		.028	.023				
Not married							0.085	0.016	***
Self-employed/employer	0.091	0.018	***	.065	.023	***	0.057	0.027	**
Wage worker				.167	.047	***	0.329	0.038	***
Public	0.188	0.028	***						
Private	0.123	0.020	***						
Casual/domestic				.033	.060		0.061	0.018	***
Contributing family worker	0.052	0.031	*	-.021	.032		-0.007	0.019	
Urban	-0.003	0.015		.040	.018	**	-0.033	0.015	**
Group membership	0.025	0.016		.030	.018	*	0.095	0.014	***
Indigenous	-0.059	0.040							
Afro-Black	-0.016	0.037							
Muslim							-0.056	0.027	**
Christian							0.011	0.037	
Forward caste							0.011	0.030	
Backward caste							-0.006	0.016	
N=	2,656			1,772			3,728		
Wald ( $\chi^2$ )	285.44			232.04			436.84		
Pseudo R-squared	0.154			0.194			0.125		

\*significant at 10%; \*\*significant at 5 %; \*\*\*significant at 1%.

A logit analysis indicates that in all three countries, women who live in households in higher wealth quintiles are more likely to have formal savings. Only for Ecuador, is there is no statistically significant difference among those in the poorest two quintiles. Education continues to be related to having formal savings in all three countries.

Being a wage worker is positively associated with having accumulated formal savings in all three countries, as is being self-employed. Group membership, however, is only significantly associated with formal savings in Ghana and Karnataka. Hence in Ecuador, where group membership tends to be a religious affiliation, such may provide access to information to open an account, but such networks do not impact the level of savings. This is in contrast to Ghana where membership in a church group is more widespread and many of the churches encourage their members to save.

Table 10 presents the logit analysis controlling for whether the household and the woman herself owns immovable property (land, residence, or other real estate). In none of the three countries is household ownership of immovable property related to women's having formal savings above the threshold. However, the woman herself owning immovable property is positively associated with having formal savings in all three countries. It is not simply how well off their household might be that allows them to generate savings, but potential economic autonomy as captured by the ability to own assets. The other effects are substantively the same when we control for ownership of immovable property as when we control for physical wealth quintiles.



**Table 10. Logit analysis of women formal savers (above threshold level) and relationship with ownership of immovable property.**

Variables	Ecuador			Ghana			Karnataka		
HH owns immovable property	0.007	0.024		-.0136	.0213		0.024	0.018	
Woman owns immovable property	0.046	0.021	**	.0624	.0259	**	0.092	0.019	***
Some primary				.0177	.0225	***	0.019	0.035	
Completed primary	0.097	0.023	***	.0661	.0256	***	0.081	0.016	***
Some or completed secondary	0.186	0.026	***	.1681	.0251	***	0.166	0.023	***
Beyond secondary	0.212	0.027	***	.2791	.0433	***	0.399	0.032	***
Other				-.0086	.0728				
Never married	0.052	0.029	*	.0338	.0364				
Widowed/divorced	-0.013	0.017		-.0282	.0215				
Consensual union	-0.075	0.019	***	.0156	.0268				
Not married							0.034	0.019	*
Self-employed/ employer	0.098	0.018	***	.0668	.0230	***	0.046	0.027	*
Wage worker				.159	.045	***	0.314	0.038	***
Public	0.191	0.018	***						
Private	0.116	0.021	***						
Casual/domestic				.0168	.054		0.041	0.017	**
Contributing family worker	0.059	0.032	*	-.0117	.0343		0.005	0.020	
Age	-0.004	0.003		.0009	.0007		0.004	0.001	***
Urban	0.005	0.016		.0474	.0190	**	-0.033	0.015	**
Group member	0.023	0.016		.0364	.0184	**	0.094	0.014	***
Indigenous	-0.064	0.041							
Afro-Black	-0.024	0.039							
Muslim							-0.064	0.027	**
Christian							0.006	0.036	
Forward caste							0.025	0.030	
Backward caste							0.004	0.015	
N	2,656			1,772			3,728		
Wald ( $\chi^2$ )	252.16			229.06			421.67		
Pseudo R-squared	0.125			0.164			0.124		

\*significant at 10%; \*\*significant at 5 %; \*\*\*significant at 1%.

The data do not allow us to distinguish causality; does being a saver make it possible to acquire these physical assets, or are women with these assets more able to save? Savings and physical assets may be substitutes; someone may save to purchase property, after which their financial savings would be lower. This should not, however, confound our analysis of savings accounts, since although the balance may fluctuate with purchase of other assets, the account would likely remain open and retain some balance.

## 8. Are Women Able to Use Their Savings to Purchase Assets?

A final set of issues concerns how women asset owners acquired their assets, irrespective of whether these are owned individually or jointly. Respondents who purchased the asset (as opposed to inheriting it or acquiring it through other means) were asked how the money was obtained. In Table 11 the responses are grouped into: 1) Women who used only their own savings and/or earnings to purchase productive assets; and 2) Women who used their own savings and/or earnings in combination with any other source (such as with a spouse's savings or remittances or a loan) to purchase assets. We also include the total of these two, which indicates whether or not women use their savings *at all* to acquire these assets.

**Table 11. Percentage of women respondents who are asset owners who used own savings/earnings to purchase assets.**

Variables	Ecuador		Ghana		Karnataka	
	Rural	Urban	Rural	Urban	Rural	Urban
<i>Primary Residence:</i>						
Only w/ own savings	6%	8%	56%	25%	5%	7%
W/ own savings and others <sup>a</sup>	15%	18%	4%	7%	12%	18%
Total	21%	26%	60%	32%	17%	25%
n=women asset owners	507	752	176	60	582	214
<i>Land:</i>						
Only w/ own savings	6%	8%	6%	5%	2%	2%
W/ own savings and others <sup>a</sup>	25%	17%	1%	3%	6%	7%
Total	31%	25%	7%	8%	8%	9%
n=women asset owners	197	72	203	63	389	56
<i>Other Real Estate</i>						
Only w/ own savings	4%	16%	47%	37%	9%	11%
W/ own savings and others <sup>a</sup>	28%	25%	8%	8%	25%	27%
Total	32%	41%	55%	45%	34%	38%
n=women asset owners	68	181	127	112	136	45

Note: <sup>a</sup> These women use their own savings in combination with the savings of others and/or credit.

Whether women use their own savings *at all* to acquire immovable property varies by country and type of property. Less than one third of the women who own their residence contributed their own savings to acquire it, except in rural Ghana where 60% did so. For land, less than 10% of the women who own land in Ghana and Karnataka contributed their savings to purchase it, in large part this is because most of the land is inherited, rather than purchased. In Ecuador, it is a higher figure since land markets are more developed and women are more frequently landowners. It is much more common for women to contribute savings to acquire other real estate (not the primary residence or agricultural land) in all three countries.

It is useful to contrast the share of women who bought other real estate only with their savings with those who contributed savings to a combination of sources of financing. Ghana and Karnataka, which have the same marital regime but where women have a different distribution of marital statuses, show opposite patterns. Whereas in Karnataka they have acquired other real estate via a combination of financing sources, in Ghana a notably high share of women have acquired another property only with their own savings, similar to the pattern for the principle residence. This may be indicative of the importance women place on owning their own home in a country with a relatively high share of unpartnered women. In Ecuador, where joint ownership of immovable property is common, the share of such property acquired with the pooling of funds, by husbands and wives in particular, is higher than that acquired by only women's savings.

## **9. Policy Implications and Recommendations**

The overall incidence of having savings is low, for both men and women, in the three countries analyzed. Thus, efforts are needed to increase the incidence of holding formal savings accounts as well as the level of savings for all individuals. In addition, there is a gender gap in favor of men, thus, efforts should also target women and the specific constraints that they face. Women in the poorest asset quintiles are the least likely to have any form of savings, and if they do, the amounts are typically very small. Our results thus are similar to those found by Demirguc-Kunt, Klapper and Singer (2013) using Findex data for developing countries on both men and women having formal accounts and income quintiles. The importance of education and employment for having a formal account is consistent across the three countries. Women's ownership of assets is also associated with their ability to maintain formal savings.

In Ecuador, the spread of savings and loans cooperatives throughout the country, particularly in the rural highlands, is one factor that explains the relatively high incidence of women with formal accounts. This is suggested by the much smaller gap in the incidence of rural and urban women who have an account in a cooperative or credit union, (13% vs. 15%) compared with a private bank (11% vs. 19%). But it is also interesting that a high percentage of these women have zero balance in their accounts. This suggests that it is not just the challenge of opening a formal account that is constraining women's accumulation of formal savings. Instead,

it appears that women use all the earnings that are deposited into these accounts to cover regular expenses. Thus, programs simply to facilitate opening accounts will not necessarily result in increased levels of savings. At the same time, women keep cash savings at home, rather than deposit these into an account. As Table 4 shows, 15% of rural and 14% of urban women in Ghana have cash savings at home; the corresponding figures for Ecuador are 3% and 8%. This suggests that there might be an unmet demand for savings instruments that are relevant for women's needs.

Although Ecuador is more urbanized and more developed, this does not mean that women are more able to save formally than in Ghana and Karnataka. The comparative data suggest that recent efforts to extend savings programs in both Ghana and Karnataka have had some success. In Ghana, most women with formal savings use bank accounts. While there has been rapid growth in the number of savings and loans organizations that are designed to attract the small saver, most of these organizations are located in towns. Improving physical access to savings institutions will go a long way to reducing the incidence of savings kept at home and moving the money into the formal sector.

India has been relatively successful in bringing women into the microfinance sector, particularly in the southern states. Much of the informal savings held by women in Karnataka is through microfinance savings programs. While these have been useful in mobilizing women's small savings on a routine basis, the incidence is much higher in rural than in urban areas whereas poverty is higher in urban areas. Further, the MGNREGS in Karnataka has been instrumental in enabling rural individuals to open bank accounts so that the wages under the scheme are credited directly to these accounts. There is no comparable scheme of similar scale operational in urban areas. A complete analysis of women's savings requires a parallel analysis of women's access to credit, a topic beyond the scope of this paper. Often the prospect of a loan induces women to begin to save, either because it is a formal requirement to obtain credit, or because to realize an investment of a certain size requires that personal savings complement a loan. In addition, in countries such as Ecuador, where access to consumer credit is widespread, accumulating a down payment is often a precondition to qualifying for installment payments. Women commonly consider making such installment payments a form of forced savings, one that allows a higher standard of living to be attained than would otherwise be the case.

In all three countries the overall financial wealth of men is higher than that of women. In order to reduce this gap, enabling women to save more and save higher amounts in the formal sector is needed. However, this depends critically on women's labor force participation and wage rates; both these domains have substantial gender gaps in favor of men. Women in Ghana earn 35% less than men in the labor market. The wage differential is higher among the self-employed (51%) than in paid employment (25%) (Baah-Boateng, 2012). In Ecuador, women earn 33% less than men (INEC, 2009). The stagnation of women's labor force participation rates in India over the past couple of decades, in particular, is a worrying trend for women's overall economic empowerment. In 2009-10, the rural gender wage gap in India was 54%, while in urban areas it was lower at 15% (Khanna, 2012).

Thus, we see low rates of savings across the three countries, with different patterns that are related to government policy, the types of savings instruments available, the marital regimes and income-earning opportunities. In addition to designing savings instruments that address women's constraints, policy makers also need to focus on the broader context that determines women's savings behavior.

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## Notes

<sup>1</sup> See Agarwal (1997) on how asset ownership increases women's decision-making capabilities; on investing in education and nutrition, World Bank (2011); and as a means of decreasing domestic violence, ICRW (2005), Panda & Agarwal (2005) and Bhattacharyya, Bedi, & Chhachhi (2011).

<sup>2</sup> For more details on the methodology see Doss, *et al.* (2011).

<sup>3</sup> Ownership was defined by the respondent; additional questions were asked about whether there was an ownership document for the residence and, if so, whose names were on it. The "other" category includes all situations where the residence was owned by a household member jointly with someone other than his/her spouse or by all household members.

<sup>4</sup> The Findex database is available at: [http://data.worldbank.org/data-catalog/financial\\_inclusion](http://data.worldbank.org/data-catalog/financial_inclusion)

<sup>5</sup> All the percentages in the tables as well as the subsequent regressions are unweighted, and thus may differ from those reported in Doss et al (2012).

<sup>6</sup> The spouse of the rainy day saver may not know about the existence of such a saving.

<sup>7</sup> In the estimations, mean centered age and age squared are used.

<sup>8</sup> Although each quintile contains 20% of households, it is not necessary that 20% of the women respondents be in each quintile, since some households do not include women respondents.

<sup>9</sup> For Ecuador based on 2011-12 Consumption and Expenditure Survey, using CPI deflator to arrive at 2010 figures: per capita daily consumption is \$7.76 for urban and \$4.11 for rural. The Ghana survey included detailed consumption expenditure data and it was used to calculate rates of PPP\$8.32 for urban and PPP\$3.17 for rural. In Karnataka, the daily mean per capita consumption expenditure of Rs. 34 in rural areas and Rs. 69 in urban areas was calculated based on the 66<sup>th</sup> Round of Consumption Expenditure Survey of the National Sample Survey Office in 2009-10.

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**Appendix Table 1. Incidence of women respondents in Ecuador who have savings, by household wealth quintile and type of savings.**

<b>Urban</b>	Total	Q1	Q2	Q3	Q4	Q5
<i>Formal accounts</i>	31%	16%	30%	25%	31%	52%
Bank account	19%	7%	18%	14%	18%	36%
Cooperative/credit union	15%	9%	14%	14%	14%	24%
Other private account (NGOs, etc.)	1%	0%	2%	1%	1%	2%
Stocks, bonds, etc.	0%	0%	0%	0%	0%	1%
Other formal	1%	1%	1%	0%	1%	3%
<i>Informal</i>	10%	10%	11%	10%	10%	7%
Informal savings program	1%	1%	1%	2%	1%	1%
Deposited w/ 3 <sup>rd</sup> party	0%	0%	1%	0%	1%	0%
Cash savings at home	8%	10%	9%	9%	8%	6%
Total urban women	1,783	369	343	313	360	398
<b>Rural</b>						
<i>Formal Accounts</i>	22%	9%	11%	24%	35%	40%
Bank account	11%	5%	5%	11%	16%	24%
Cooperative/credit union account	13%	4%	6%	12%	23%	26%
Other private account (NGOs, etc.)	1%	1%	1%	1%	0%	2%
Stocks, bonds, etc.	0%	0%	0%	0%	0%	0%
Other formal	1%	0%	0%	1%	1%	2%
<i>Informal</i>	4%	2%	6%	4%	4%	3%
Informal savings program	1%	1%	2%	1%	0%	1%
Deposited w/ 3 <sup>rd</sup> party	0%	0%	1%	0%	0%	0%
Cash savings at home	3%	2%	4%	2%	4%	2%
Total rural women	873	168	198	217	167	123

Note: Due to rounding, the zero entries may reflect instances where the incidence is positive but less than 0.5%.

**Appendix Table 2. Incidence of women respondents in Ghana who have savings, by household wealth quintile and type of savings.**

	Total	Q1	Q2	Q3	Q4	Q5
<b>Urban</b>						
<i>Formal accounts</i>	32%	6%	22%	39%	37%	43%
Bank account	27%	6%	16%	31%	30%	39%
Cooperatives/Credit union	2%	0%	2%	2%	3%	3%
Savings & loan	4%	0%	4%	6%	6%	4%
Stocks/shares/treasury bills/ bonds	2%	0%	0%	2%	1%	7%
<i>Informal</i>	28%	19%	33%	32%	30%	23%
ROSCA, <i>Susu</i>	14%	9%	14%	16%	15%	12%
Deposit w/ another person	2%	0%	0%	2%	3%	2%
Cash savings	14%	11%	23%	14%	14%	12%
Total urban women	638	95	102	129	145	167
<b>Rural</b>						
<i>Formal accounts</i>	13%	4%	7%	14%	11%	30%
Bank account	10%	3%	5%	10%	8%	25%
Cooperatives/Credit union	1%	0%	0%	1%	0%	1%
Savings & loan	3%	1%	2%	3%	3%	4%
Stocks/shares/treasury bills/ bonds	0%	0%	0%	0%	0%	2%
<i>Informal</i>	20%	13%	23%	24%	21%	21%
ROSCA, <i>Susu</i>	4%	3%	4%	2%	5%	5%
Deposit w/ another person	1%	0%	1%	2%	2%	3%
Cash savings	15%	10%	18%	21%	15%	15%
Total rural women	1,154	237	232	240	238	207

Note: Due to rounding, the zero entries may reflect instances where the incidence is positive but less than 0.5%.

**Appendix Table 3. Incidence of women respondents in Karnataka, India who have savings, by household wealth quintile and type of savings.**

Types of savings instruments	Total	Q1	Q2	Q3	Q4	Q5
<b>Urban</b>						
<i>Formal accounts</i>	26%	14%	27%	27%	24%	45%
Bank accounts	23%	11%	26%	22%	22%	43%
Post office savings	4%	1%	3%	7%	4%	6%
Government certificates, bonds, stocks, shares, debentures	2%	1%	1%	1%	2%	3%
<i>Informal</i>	25%	23%	26%	26%	35%	21%
Cooperative/NGO/microfinance	24%	21%	24%	24%	34%	18%
Other informal, including deposit with another individual, pigmy savings	2%	2%	1%	2%	2%	3%
Total urban women	1,331	408	242	206	213	262
<b>Rural</b>						
<i>Formal accounts</i>	23%	20%	22%	21%	23%	28%
Bank accounts	21%	17%	20%	20%	21%	26%
Post office savings	3%	3%	3%	2%	2%	3%
Government certificates, bonds, stocks, shares, debentures	0%	0%	0%	1%	1%	0%
<i>Informal</i>	40%	36%	41%	41%	42%	35%
Cooperative/NGO/Microfinance savings	39%	34%	40%	40%	42%	35%
Deposit with another individual, pigmy savings, other informal savings, other	1%	1%	1%	2%	2%	1%
Total rural women	2,430	294	513	596	588	439

Note: Due to rounding, the zero entries may reflect instances where the incidence is positive but less than 0.5%. The “Any informal” for Q4 for Karnataka urban is higher than the sum of its parts because of rounding margins.