Intersecting Hierarchies: Individual and Societal Correlates of Women's Autonomy within Household

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Abstract

Women's control of their own lives and their environment is an important factor determining their own welfare. Several studies identify the role of different resources women have on their agency within the household, but very few examine the role of factors at the community level. This is unfortunate as several important determinants of women's agency like gender norms and economic and social development both manifest and are experienced outside the household.

Using data from Demographic and Health Surveys for 18 countries from three consecutive surveys between 1998 and 2017, the paper notes the importance of community-level gender norms and social development reflected in higher community level of education among women on women's agency. This suggests that both individual and societal resources are required to enhance women's empowerment. In addition, the results show a lack of significant direct association of development measured by other metrics like sectoral transformation and economic activities.

Keywords: Gender, Agency, Community-level effect analysis, Cross-country comparative analyses, Multi-level modeling.

Introduction

Women's control over their own lives and their environment has important consequences on their welfare (Sen 1990a, 1990b). Since the United Nations Fourth World Conference on Women in 1995, there has been a concerted effort to improve women's agency as an important part of developmental policies. In this paper, we show the role of several factors outside the household that are important in shaping women's agency within the household. Specifically, we focus on the importance of gender norms and the nature of economic development at the community level. Often the focus of public policy to empower women stresses resources at the individual level that women need to improve their agency. In such a framework, economic development was also recognized as an important factor that can improve such resources. Our results from a wide range of countries in Africa and South Asia show that both individual and societal factors contribute to women's agency. Specifically, we observe that community-level prevalence of gender norms shows a statistically significant association with women's agency at the household level. It, therefore highlights how extending the focus to

community-level factors can improve the effectiveness of existing policies. Further, it also identifies the nature of economic development at the community level that creates conditions for improving women's agency. Here we observe that economic development which is also associated with higher attainment of women's education at the community level shows significant association with women's agency, especially in countries with a low average level of women's educational attainment. This is true even after controlling for several individual and community level factors. On the other hand, economic development reflected in sectoral transformation or higher economic activities does not show an additional contribution to women's agency at the household level.

Prior interest in looking at individual resources as the main input of agency has its root in intra-household cooperative bargaining models in the economics literature models (Manser and Brown 1980; McElroy and Horney 1981). Here an individual's say, or agency reflects their bargaining power. Each participant's bargaining power comes from their fallback options at the dissolution of the marriage. The fallback option is a function of each member's human and non-human capital and the potential rates of return on them (Folbre 1997). Resources like education and employment that improve their fallback position improve their agency. Non-cooperative bargaining models subsequently introduced the idea of asymmetric gender norms (Katz 1997; Lundberg and Pollak 1993) in the context of both developed and developing countries. Such gender norms not only restrict the use of resources as a fallback option but also restricts access to resources before and during the marriage. The case for norms is particularly relevant in developing countries where marriage practices like early marriage and arranged marriage and legal restrictions and social stigma against marriage dissolution initiated by women often limit the ability of women to use their resources as threat points in exercising their agency (Baland and Ziparo 2017). Even outside marriage community perception of what is gender appropriate conditions the delivery of education, sets restrictions on work outside the household, limits occupation that is permissible for women, and even affects rights to inheritance and rights to assets like land (Bertrand, Kamenica and Pan 2015; La Ferrara and Milazzo 2017; McElroy 1990). Consequently, they set limits on what can be bargained about, constrain bargaining power, and affect how bargaining is conducted (Agarwal 1997).

Women's ability to make household decisions as a measure of agency is also discussed extensively in the sociology literature: e.g. Becker, Fonseca-Becker and Schenck-Yglesias (2006; Steele and Goldstein (2006; Malhotra and Mather (1997. Several empirical studies observe the importance of these individual and household level factors in determining women’s agency (Kishor 2005). Much less research focuses on factors outside the household. This is unfortunate as both economics and sociology literature recognize the importance of extra household factors in determining agency within marriage. Economics highlights the role of the market while sociology highlights social structures. However, very little attention is given to the community where “institutional and normative structures such as family systems, infrastructure, gender ideologies, regional or local market processes” affect women’s empowerment (Malhotra and Schuler 2005; Mason 2005). At this point, it is worth noting out that agency is one element of what (Kabeer 2001) identifies in her broader conceptualization of women’s empowerment. Yet it is central to the idea of how resources, which are pre-conditions translates to achievements which are outcomes of empowerment. Substantial research has examined the role of women’s agency on their welfare (see e.g. Anderson, Beaman and Platteau (2018; Quisumbing (2003 for a review).

Community-level factors

One area where community-level factors play an important role in the case of gender norms (Pearse and Connell 2016). Earlier studies have observed that regional prevalence in agrarian practices that require more physical input tend to assign more rights to men. In this area, Alesina, Giuliano and Nunn (2013 observe that historical plow use in a region is correlated with its current level of female labor force participation and current gender attitudes. Botticini and Siow (2003 show that the prevalence of the social practices around marriage like bride price or dowry is associated with community-level labor scarcity. Studies have shown that consequences of such asymmetric norms at the community level, for example, a lower gender wage gap at the community level, has a significant impact on woman's burden of unpaid work (MacPhail and Dong 2007) and domestic violence (Aizer 2007). Similar evidence is also noted by e.g. Dyson, Blumberg and Coleman (1989, Desai and Jain (1994, Riley (1997 for sociology and demography literature. Mason and Smith (2003 study on five Asian countries finds that country and community of residence predict women's domestic empowerment better than their personal socioeconomic and demographic traits. Similar observations are made by Jejeebhoy and Sathar (2001 for Pakistan and Malhotra and Mather (1997 for Sri Lanka. These and other studies (Desai and Alva 1998; Hanmer and Klugman 2016) which look into community-level influences, generally use community identifier or fixed effect controls or error correction for correlations within communities. So, our primary research question focuses on the role played by community-level indicators of gender norms on women's agency. We ask whether gender norms are exclusively a household level factor or whether community-level indicators of gender norms show a significant association with women's agency?

Our interest in community-level variables allows us to address a related debate on the role of development to empower women. Women in poverty are more likely to be disempowered because of the lack of access to basic resources (Kabeer 1999). This is particularly true for access to education and paid employment. Economic development can potentially improve work participation and enhance educational attainment through increased demand for skills. In addition, gender norms privileging males over females have their roots in material conditions (Boserup 1970; Mikkola 2005). In the sociology literature, the concept of developmental idealism proposed by Thornton (2001 argues that development can potentially transform these limitations. and bring about gender equality among other elements of 'modernity'. In economics, Doepke and Tertilt (2009 and Fernández (2014 argue how social transformation brought about by economic development will result in men surrendering some of their privileges as their interest vis-a-vis their spouse conflict with their interest as parents.

However, empirical evidence of the association between development and women's agency is weak and inconsistent (Duflo 2012; Kabeer and Natali 2013). Several studies note that gender disparities exist even in developed countries. For example, Goldin (2006 observes that even though gender differences in educational attainment, occupation, and wages have declined significantly in the United States since the 1930s, the convergence has leveled off since the 1990s. She argues that such differences persist due to attitudes and expectations about the role of women. Kabeer (2016 argues that gender inequality exists not only in affluent societies, but there is also variation in gender inequalities among countries at similar stages of development. A different set of research also highlights the stickiness of gender norms even with

economic transformations. This is reported in studies by Almond and Edlund (2008 and Abrevaya (2009 who find evidence of missing girls among U.S. residents of East Asian and South Asian origin. In a study on immigrants to the U.S., Fernandez and Fogli (2009 find that a woman's fertility and labor force participation is predicted by the average fertility in her country of origin. And finally, there is the question about the nature of economic development that the developing countries experience. Kabeer (2016 argues that the type of economic growth seen in developing countries may not guarantee competitive markets that benefit all and may even reproduce pre-existing gender inequalities. Also, in some cases, it might improve labor force participation but still retain occupational segmentation and gender wage gaps within an occupation.

So, our second research question examines whether development at the community level has any significant association with women's agency. The country-level similarities in historical, social, political, and economic contexts, make community-level variations a better way to isolate the effect of development than cross-country comparisons. Even though development is a multidimensional concept often development is viewed in terms of economic output. Here we take a broader view to identify the different characteristics of development associated with women’s agency. We are particularly interested in the extent of structural transformation, the intensity of economic activity, and social development associated with economic development at the community level. If they are not significant, it does not necessarily imply that they are inconsequential as they can still be instrumental through the resources and norms. If they are significant, it would imply the broader role development plays beyond resources and norms and that merely improving resources are not enough to improve women's agency.

Data and variables

In this research, we use nationally representative cross-sectional data from the Demographic and Health Survey (ICF 1998-2017). The survey collects data from households with at least one woman of reproductive age. Since 1998, DHS started integrating gender in different aspects of their survey and introduced instruments on women’s participation in household decision making and on gender roles. Specifically, it introduced who in the family has the final say on the following domains — own health care, making large household purchases, making household purchases for daily needs, visits to family or relatives, and food cooked each day. We extract the DHS data from IPUMS-DHS (Boyle, King and Sobek 2019), which has harmonized these different surveys for several countries in Africa and Asia. We restrict our sample to countries that have at least three rounds of data on the decision variables resulting in 18 countries between 1998 and 2017. For countries with more than three years of surveys, we use the latest three years.

For this research, our outcome variable of interest is women's participation in household decision-making. However, not all decisions have similar "consequential significance" in how it affects the lives of the women. In choosing among the different instruments in the DHS survey, we follow Kabeer’s idea of “strategic choices” with critical implications on the lives of women as against what she calls less consequential choices which may improve the quality of life but is not critical to it. The choice that can be considered to fit this requirement is the decision regarding their own health. Kishor and Gupta (2009 also identify the decision on own health case as a strategic choice.

However, it has also been argued that women may downplay their interests by behaving altruistically (Sen 1990a) or being strategic as they are more dependent on the family for their survival (Agarwal 1997; Kandiyoti 2005). So, we also consider a decision on large household purchases which may be considered as an altruistic choice. For brevity, we restrict our analysis to these two decisions. For the remainder of this paper, we will refer to the decision on large household purchases and decisions on their own health care, as purchase and health decisions, respectively. Though they are not exhaustive, they address a wide range of issues consequential to women's life like economic (purchase) and social (health) as well as decisions about control over the environment (purchase) and body (health).

As for the response to these questions, DHS collects information about whether a decision is made by the respondent, husband/partner, respondent, and husband/partner jointly, someone else, respondent, and someone else jointly, etc. Basu and Koolwal (2005 observe that whether women make decisions individually or jointly does not explicitly account for whether they are autonomous or responsible for such actions. Others e.g. Folbre (1994 even suggest that being responsible for some of these decisions may be disempowering instead of empowering. Kishor and Gupta (2009 suggest that an empowerment perspective does not imply that decisions are taken by the women or together with others - it requires that at least the woman participate in decisions that affect themselves and their environment. So, for both purchase and health decisions, our main outcome variable is an indicator of whether women participate in the respective decision or not. While participation does not directly imply autonomy, they are preconditions.

The two resource variables we consider in this study are educational attainment measured as the number of school years completed and a binary variable to indicate whether the woman participated in paid employment. Education improves an individual's ability to access and use the information to take care of their own wellbeing. In addition, it also improves women's ability to deal negotiate and navigate through power relations within and outside the household (Kabeer, 2005). Apart from that education improves employment possibilities by helping individuals to acquire the necessary skills. Several studies observe the association of women's education and different aspects of household decision-making using DHS data (Allendorf 2007; Hanmer and Klugman 2016; Malhotra and Mather 1997). Employment outside the household identified as work for cash, not only improves financial independence but is also associated with self-esteem and social status. In addition, it exposes individuals to power structures outside kin networks. The association between participation in paid work and household decision making is also observed by several studies (Antman 2014; Kishor and Subaiya 2008; Rahman and Rao 2004; Speizer, Whittle and Carter 2005).

However, others note that it is not necessarily employment, but control over earnings - usually determined by gender norms that determine women's autonomy (Anderson and Eswaran 2009; Kabeer 1997; Mason 2005). Similarly, in the case of education, it is observed that different cultural norms can have differentiated effects on autonomy (Jejeebhoy and Sathar 2001; Roy and Niranjan 2004). DHS provides several instruments of gender norms that reflect attitudes towards women's control over their behavior, bodies, and sexuality. While they are indicative of the scope of the gender norms experienced by women, they are not directly associated with how resources affect the agency through resources. Instead, we choose the age at first marriage as our measure of gender norms.

Marriage is a site where several of these norms affect woman's lives. The age at which one enters marriage has important

implications on gender norms experienced by married women. It has direct implications on access to resources for empowerment like pre-marital years of education, work experience, and social network outside the household (Hirschman 1985; Lee-Rife 2010; Mason 1986; Singh and Samara 1996; Yount et al. 2014). By controlling their sexuality by limiting their interactions with members of the opposite sex, norms around marriage also limit their economic freedom (Desai and Andrist 2010). It also incorporates gendered expectations about marital relations and has an important implication on how bargaining with resources is conducted. Women when married young may be also expected to be docile and subservient to existing norms within the marital household. Further, the ideas of self-efficacy, self-esteem, and entitlement, often associated with woman's ability to negotiate their rights, comes with age and maturity (Dixon-Mueller 2008; Miedema, Shwe and Kyaw 2016; Taylor and Pereznieto 2014; Yount 2005). Several studies have highlighted the association between age at marriage and autonomy (Desai and Andrist 2010; Heaton, Huntsman and Flake 2005; Jensen and Thornton 2003; Kishor and Gupta 2009; Yount, Crandall and Cheong 2018). While individual experiences have direct implications, women may have additional restrictions by the community-level prevalence of such norms. To account for this, we also consider the community-level average age of marriage as an indicator of community-level gender norms. Such community prevalence can have a crucial effect on restricting or facilitating women's ability to negotiate norms at the household level.

Economic development is difficult to measure with output variables like per capita income primarily because it does not account for the distribution of income within the society. In addition, mere improvement of resources need not imply agency to control the resources within the household (Folbre 1984, 1994). On the other hand, economic and social development are inextricably linked in improving women’s outside options affecting their power to bargain within the household. So, instead, we focus on three aspects of development — sectoral transformation in production, economic activities measured in terms of higher labor force participation, and social changes associated with development. In measuring sectoral transformation, we assume that the average level of education will be higher as societies transform from being exclusively dependent on primary to secondary and tertiary modes of production. Assuming access to education is gendered, a husband’s education will reflect the level of societal transformation. We consider this variable both at the individual level and the community level means of respondents’ husband’s education as an indicator of community-level sectoral transformation. Also, a higher level of economic activity at the community level will require a larger labor force which necessitates the higher participation of women. So, we measure economic activity by the community-level proportion of women who work for cash payment. We also consider community-level mean education among women to indicate development which is not only economic but have social implication. A higher level of women’s education at the community level, for example, can have positive implications on women’s participation in the legislative system which can both safeguard rights and limits the adverse effects of norms.

We limit the sample to women who responded to the decision instruments. Because of the differences between the groups who are asked about the decision question in Phase IV of the DHS surveys, where it is asked to all women, and Phase V, where it is asked only to currently married women, of the survey, regressions are limited to only currently married women cohabiting with the spouse. The sample size for a country-year cell varies from 2950 (Ghana in 2008) to 90303 (India in 1998) However India is an outlier because of its size and the second-highest country-year frequency is

27274 (Nigeria in 2013). Excluding India which has a total of 265039 observations across three years of the survey, per country sample size varies from 14097 (Ghana) to 58848 (Nigeria) with an average sample size of 30395 (Table 1). Though the two areas of decision-making differ in their implication for women's choices, there are interesting similarities in that countries with higher participation in one also show higher participation in the other. Figure 1 shows the distribution of participation in the purchase and health decisions across the different countries sorted by proportion participating in health decisions. Participation in the two decisions averages between 52 percent for purchase and 59 percent for health. Zimbabwe shows the highest level of participation at 87 % for purchase and 83 % for health followed by Ethiopia (68%) in the purchase and Egypt (74%) in health decisions. Mali and Senegal are in the lower extremes with around 20 percent participation rate followed by Malawi and Nigeria. Tanzania is among the lowest participation countries for purchase decisions but not for health. The opposite is true for Benin. Figures 2a and b show the distribution of participation in purchase and health decisions across countries with different levels of per capita GDP averaged over two decades for which we have the survey data (1998-2017). It is worth noting that economic development measured in terms of per capita GDP does not necessarily explain the variation in health and purchase decisions. For example, in the case of the purchase decision, a similar rate of participation can be seen from countries like Ethiopia with very low per capita GDP and Egypt with a very high per capita GDP (Fig 2a). Similarly, in health decisions, participation is higher in Ethiopia compared to Senegal and Nigeria even though they have higher per capita GDP (Fig 2b). Also, at approximately the same level of per capita GDP, there are countries with very low e.g., in Mali and Senegal, and high participation e.g., in Lesotho and Zimbabwe in both types of decisions.

For our sample, the average years of education completed varies between 1.3 (Mali) and 8.6 (Zimbabwe) with an average of 5 (Table 2). The proportion of paid work is as low as 15% (Egypt) to as high as 71% (Ghana) with an average of 41%. The average age at first marriage is approximately 18 years with a minimum of around 16 (Bangladesh) and a maximum of around 21 (Rwanda). Years of education completed by spouse vary between 1.6 (Mali) and 9.5 (Zimbabwe) with an average of 6. Zimbabwe's high rate of participation in either decision is associated with higher levels of own and husband's education as well as age at first marriage. Mali and Senegal's low rate of participation is associated with generally low levels in all variables except for work for cash which is higher than average among all countries. Ethiopia is an interesting case in that it shows a high level of participation in decision-making, yet it ranks low in other variables.

Analytical strategy

In this research, we are interested in the association of community-level factors in addition to individual-level factors with women’s participation in decision making. A proper way to account for factors at the group level is multilevel modeling as alternative methods like fixed effect usually confound group-level variables with group identifiers. In addition, such an approach can avoid underestimation of standard errors of community-level variables. The DHS surveys are based on two-stage sample designs. In the first stage, enumeration units or clusters are selected from larger regional units within countries. Next households are randomly selected within clusters. This random drawing of clusters - referred to as primary sampling units allows us to consider them as a community-level unit.

For estimation, we consider the following specification:

$$logit\left(y_{ij}\right) = \beta_{0j} + \beta_1 x_{ij} + \beta_2 z_j + \epsilon_{ij} \quad (1)$$

$$\beta_{0j} = \gamma_{00} + u_{0j} \quad (2)$$

Here, y_{ij} indicates participation in the purchase or health decisions by the woman i in community j . x_{ij} includes years of education, participation in paid work, husband's years of education, age at first marriage, rural/urban, and survey year, dummies. z_j includes a community-level mean of years of education among women and their husbands and age at first marriage. The community-based measures also include the proportion of women involved in paid work. β_{0j} is the community level intercept. To address other possible sources of variation in women's agency within and outside the household, we additionally control for family structure using a dummy variable to indicate nuclear family or not and relative wealth using the wealth quintile indicator available from the survey.

Results

Figures 3 - 6 summarize the main result for purchase and health decisions, respectively. We report regression outputs in Appendix Tables A1 and A2. In each plot, we show the marginal effect of an individual and corresponding community-level variable on purchase and health decisions across all countries sorted by country averages of the individual-level variable.

Education

Except for a few countries (Senegal, Nepal, Bangladesh) individual-level education is positively and significantly associated with participation in purchase decisions. Further, among countries with low educational attainment among women e.g., Mali, Ethiopia, Nepal, India, Nigeria, Bangladesh, and Malawi, community-level education is positively associated with participation in purchase decisions. Notable is the case of the two countries in the Indian subcontinent, Nepal, and Bangladesh, where though individual education has a negative association, community-level education shows a positive and significant association with the purchase decision. Also, worth mentioning is the case of Egypt where community-level education has a positive association with purchase decisions even though it is one of the countries with relatively high educational attainment among women. Among countries with a low level of participation in purchase decisions (Mali, Senegal, Nigeria, Malawi, Tanzania) individual associations are significant in all except Senegal. Relation with community-level education is significant in all except Senegal and Tanzania. Among countries with a higher level of participation in purchase decisions (Ethiopia, Zimbabwe, Lesotho, Bangladesh), Ethiopia shows a positive association with individual and community-level variables. Lesotho and Zimbabwe show a positive individual-level association but

none at the community level. Bangladesh, as mentioned earlier, shows significant and positive community-level but negative individual-level associations.

Individual-level education is also significantly associated with participation in health decisions, except for the three countries in the Indian subcontinent - Bangladesh, India, and Nepal. Further, among countries with low levels of education e.g., Mali, Ethiopia, Nepal, Nigeria, and Bangladesh, community-level education is positively associated with participation in purchase decisions. Egypt and Kenya also show a significant positive association of community-level education even though they are generally with high women's education. Among countries with a low level of participation in health decisions (Senegal, Mali, Benin, Nigeria, and Malawi), individual effects are significant in all. However, community-level education is not significantly associated except in Mali and Nigeria. Among countries with a higher level of participation in health decisions (Ethiopia, Zimbabwe, Lesotho, Egypt), Ethiopia and Egypt show a significant association in both individual and community effects while Zimbabwe and Lesotho show significant association only at the individual level.

The patterns across the two types of decisions are generally similar. The exceptions for individual-level education are in the three countries Senegal where it is significant for purchase decision but not for health, and Nepal, and Bangladesh where it is negative and significant for purchase but there is no significant association in case of health decision. For community-level education, while they show a significant association for purchase decisions in India and Malawi for purchase decisions, they do not show a significant association for health decisions. The opposite is true for Kenya, where it is significant for health decisions but not for the purchase decision.

Paid work

Results for participation in paid work are different from the effect of education. Participation in paid work is significantly and positively associated with purchase decisions for all countries at the individual level though not at the community level. In some of the countries with a high level of participation in paid work, e.g. Rwanda, Kenya, and Nigeria, community-level variables even show a negative association with the decision to purchase. Among countries with a low level of participation in the purchase decision, individual effects are significant in all. Community effects show no significant association except for Nigeria where it is negative. The patterns for countries with a high level of participation in the purchase decision are similar to the general pattern across the country.

A similar variation between individual and community level participation in paid work among women can be seen in the case of health decisions. The exception is in the case of the individual level in Zimbabwe where it is not significant and Rwanda and Uganda where community-level variables show a negative association. Among countries with a low level of participation in health decisions, the association of individual-level participation in paid work is significant in all. Benin which has the second-highest proportion of participation in paid work in our sample also shows the highest marginal effect. Community-level variables show no significant association except for Senegal where it is positive. Among countries with a higher level of participation in health decision, Zimbabwe shows no associations, Ethiopia and Lesotho shows association only at the individual level, and Egypt shows association in both individual and community level.

The patterns across the two types of decisions are quite similar except for individual-level work participation in Zimbabwe

and community-level participation in Kenya.

Age at first marriage

Age at first marriage shows no significant association with purchase decisions for all countries at the individual level except for Malawi where it is positive and Nepal where it is negative. This is likely because both education and work participation, which are the most important manifestation of early marriage, are controlled in the regression specification. However, most countries show the positive effects of community-level effects when they show significant association (Nepal, India, Nigeria, Zambia, Uganda, Tanzania, Benin, Senegal, Kenya, and Egypt). The only exception being Ethiopia. Among countries with a low level of participation in the purchase decision, community-level effects are not significantly associated with outcomes in Mali and Malawi. Though in Malawi, the individual effects are significant and positive. Among countries with high participation in the purchase decision, Zimbabwe, Lesotho, and Bangladesh show no significant association of the community level variable while Ethiopia shows a negative and significant association.

In the case of health decisions, age at first marriage shows no significant association for all countries at the individual level except for India, Zimbabwe, and Senegal, where they show a positive relation. However, several countries show a positive association with the community level variable when they are significant (Nepal, Nigeria, Zambia, Uganda, Tanzania, Benin, Zimbabwe, Senegal, Kenya). The only exception being Ethiopia and Ghana where the association is negative. Among countries with a low level of participation in health decisions, community-level effects are not significantly associated with the outcome in Mali and Malawi but positive in others.

Generally, in the case of both decisions, community-level age at first marriage shows significant and positive association for countries which are not at the lowest or the highest among country mean age at first marriage.

Husband's education

Husband's education generally does not show any significant association with purchase decisions except for two countries in the Indian subcontinent - India and Nepal where it is negative. Community-level husband's education does not show significant association except for Ethiopia and India where it is negative and for Senegal, Nigeria, Uganda, and Ghana where it is positive. Among countries with very low participation in the purchase decision, Nigeria and Senegal show the positive community-level effect of the husband's education. Among countries with high participation in the purchase decision, Ethiopia shows a significant negative association with the outcome variable.

In the case of the health decision, the husband's education generally does not show any significant association. However, unlike in the case of the purchase decision, along with two countries in the Indian subcontinent - India, and Nepal, two countries in Africa, Mali, and Benin shows a negative association with health decision. Community-level husband's education does not show significant association except for Ethiopia, Egypt, and India where it is negative, and for Senegal, Rwanda, Malawi, and Zambia where it is positive. Among countries with low participation in health decisions, Mali and Benin show negative individual effects while Senegal and Malawi show positive community effects. Malawi also

shows a significant and positive association at the individual level. Among countries with a higher level of participation in health decisions, Egypt and Ethiopia show a negative association at the community level, others show no effects.

The effect of individual-level husband's education shows a similar pattern across the two types of decisions. However, there are few exceptions in the case of the community-level husband's education. E.g., Benin shows a significant and positive association for purchase decisions while no association for health decisions. In Rwanda, Malawi, and Zambia, community-level husband's education shows no significant association with purchase decision but a positive association with health decision. On the other hand, in Nigeria, Uganda, and Ghana there is a significant positive association for purchase but not for health decisions. Finally, Egypt shows no significant association for purchase decisions but a negative and significant association for health decisions.

Conclusion

While the need to empower women in developing countries is well recognized, there are still aspects of the process which need the attention of the policymakers. Since its introduction as an important element of development policies, the emphasis has been placed exclusively on the individual or the household. In doing so it ignores an understanding of the mechanism through which the community plays in conditioning and restricting individual behavior. The main purpose of this research is to highlight the association between women's agency at the household level with factors at the community level. Our study of eighteen developing countries over two decades shows some heterogeneity in answers to our research question about the relative importance of community-level and individual-level factors. A reason for heterogeneous outcomes is differences among the countries in terms of their economic and social transformations. However, some associations hold for a wide range of countries.

We find two notable cases of community-level effects. For gender norms, we find a significant and positive association of community-level measures with women's agency except for countries with a very low or very high average age at first marriage. This is true with very few exceptions (Malawi and Lesotho in the case of health decisions, Zimbabwe in the case of purchase decisions). Higher community level of women's age at first marriage can be a consequence of their ability to participate in a growing economy. This is particularly true when economies transform from being dependent exclusively on the primary sector to the secondary and tertiary sectors. However, since we also account for economic transformations using other variables, it highlights the importance of social changes, where early marriage is prevented, and late marriage is encouraged.

Another important observation is the effect of community-level women's education in countries with low overall women's education - indicating such social development can potentially empower all women and not just those who are educated (exception Benin, Senegal, and Rwanda). The results highlight the socially transformative power of expanding educational opportunities for women. Besides, higher community-level educational attainment among women not only reflects higher participation in economic activity but also in social and political organizations. These have important implications in limiting legal restrictions and stigma against divorce and remarriage, inheritance practices, and occupational choices.

There are two cases where we do not see significant associations which are also worth noting. They are in the case of sectoral transformation and economic activity associated with development. In most cases, they do not show significant associations. In cases where they do, the relationship is inconsistent. Husband's education at both individual and at the community level, which is our proxy for the sectoral transformation associated with economic development, generally does not show a consistent association. One possible reason here is that in developing countries, the variations are probably not sufficient in terms of sectoral changes. This however does not imply the economic transformations are not consequential as it is still possible that it may indirectly affect through its effect on women's individual-level education and employment and community-level changes in gender norms. However, for most of the countries, there is little association beyond the factors already accounted for.

A rather interesting result is the lack of a significant association between women's work participation at the community level and decision variables. It is expected that a higher level of economic activities can improve their outside option strengthening their say in household decisions. Particularly interesting is the case of negative association in purchase decisions among countries with relatively higher paid work participation rates among women. Often in developing countries increased work participation among women is motivated by pure economic needs. These employments need not be empowering as the type of occupation open to women, prevailing gender discrimination in wages, and the nature of work may replicate pre-existing gender norms (Desai and Jain 1994; Kabeer 1997).

Finally, our results also find affirmation of the importance of individual-level resources in determining women's agency. At the individual level, women's education and participation in paid work show significant association with decision-making in several countries highlighting the areas where policy interventions can be useful. The universality of these two resources is important as the specification also accounts for community-level norms and economic development.

Alkire (2008 argues agency has two important components - autonomy and ability. Our indicators only account for the latter. We have attempted to address the limitation by contrasting two types of decisions — strategic and altruistic. In most cases, they show similarities in their association with individual and community level variables. It is also important to note that our specifications can only identify association and not causation. Apart from issues of unobserved variables and errors in measurement, such an approach also involves endogeneity. Our framing of women's agency as an outcome of resources mediated by norms overlooks the possibility that agency can also affect the nature of norms governing the process at the household level with consequences to access to resources (Agarwal 1997; Basu 2006). Some have attempted to address some aspects of the endogeneity (Lancaster, Maitra and Ray (2006 – addresses the endogenous determination of bargaining power and household earning and income generation using three-stage least square model; Anderson and Eswaran (2009 – addresses endogeneity of women's work using an instrumental variable) but addressing all possible channels in which resources, norms, and agency affect each other is quite complicated, more so as the agency is a process and not a static outcome. So instead, we have a focus on the robustness of the associations in a wide range of countries over three waves of the DHS.

To summarize, even with the limitations of the scope and materials of the research, the importance of community-level norms raises the possibility of public policy addressing an otherwise intractable concept. Our result highlights the need for

policy directed towards norms at the community level and promoting type of development which also shows in higher women's education. It also highlights the importance of policy towards promoting individual resources by improving access to education and paid work. The results also question the presumption that development, as experienced in developing countries, can in themselves bring about desired changes in women's agency.

Figures and Tables

Figures

Figure 1. Distribution of participation rate in purchase decision across countries used in this study (averaged over three latest years of DHS survey)

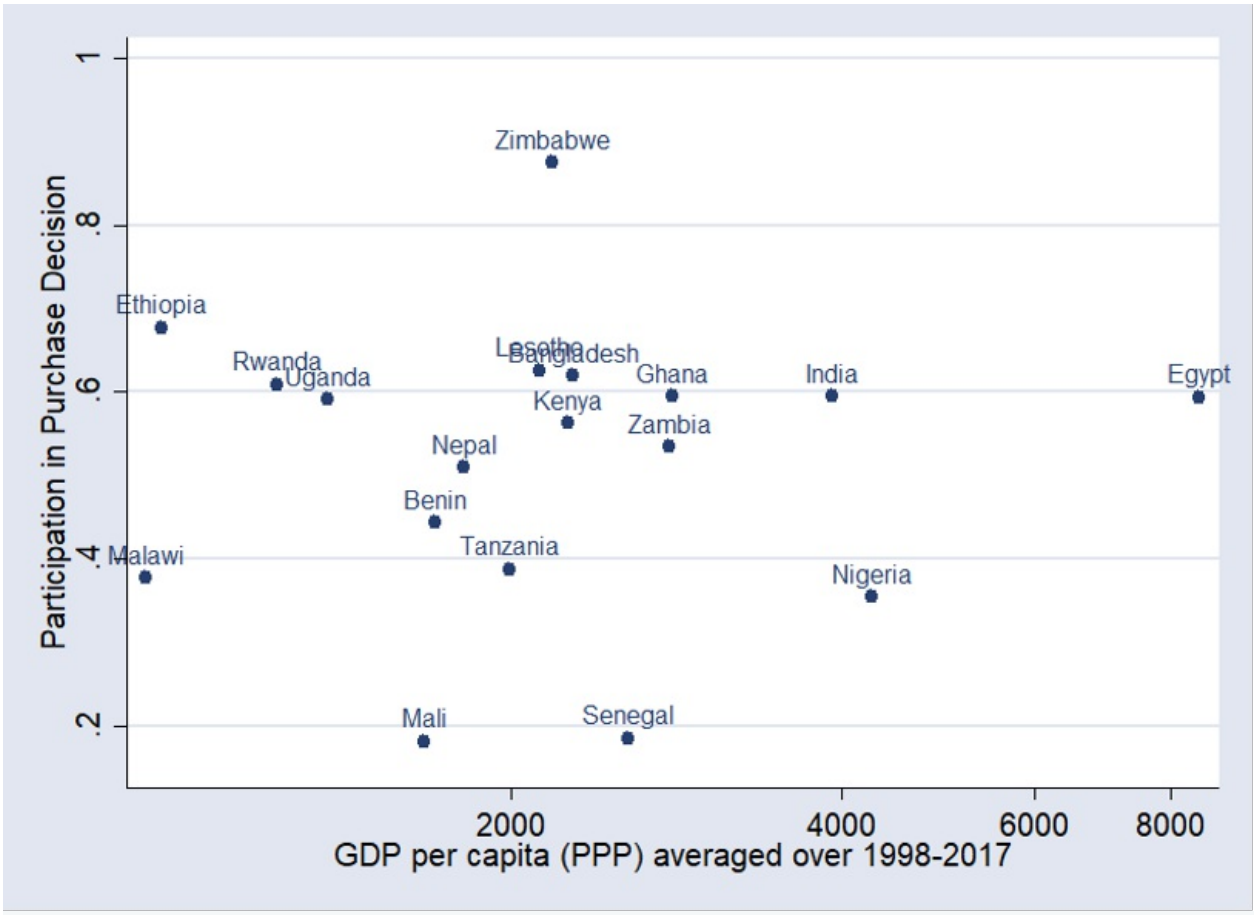

Figure 2a. Scatter plots of the participation rate in purchase decision across countries used in this study (averaged over three latest years of DHS survey) and their per-capita GDP

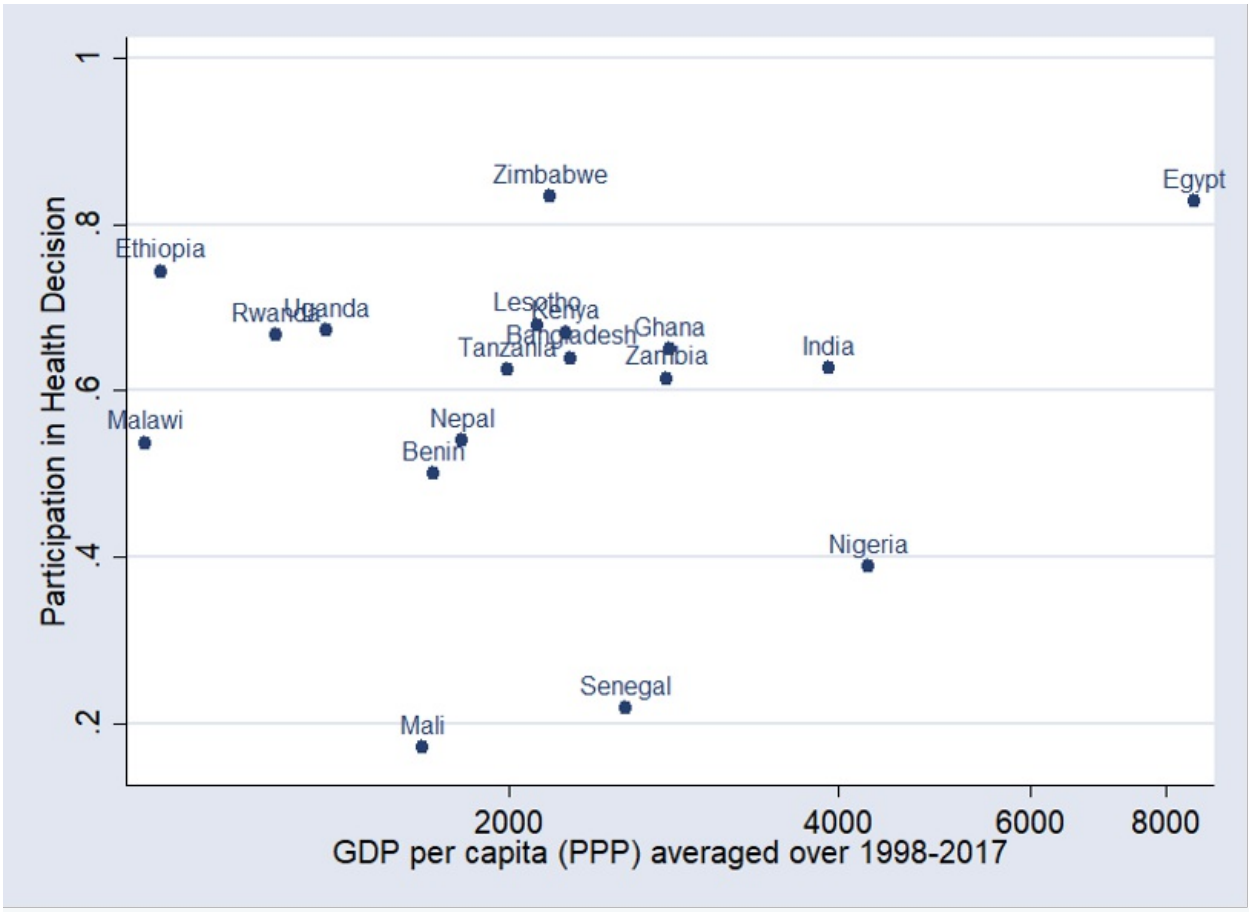

Figure 2b. Scatter plots of the participation rate in health decision across countries used in this study (averaged over three latest years of DHS survey) and their per-capita GDP

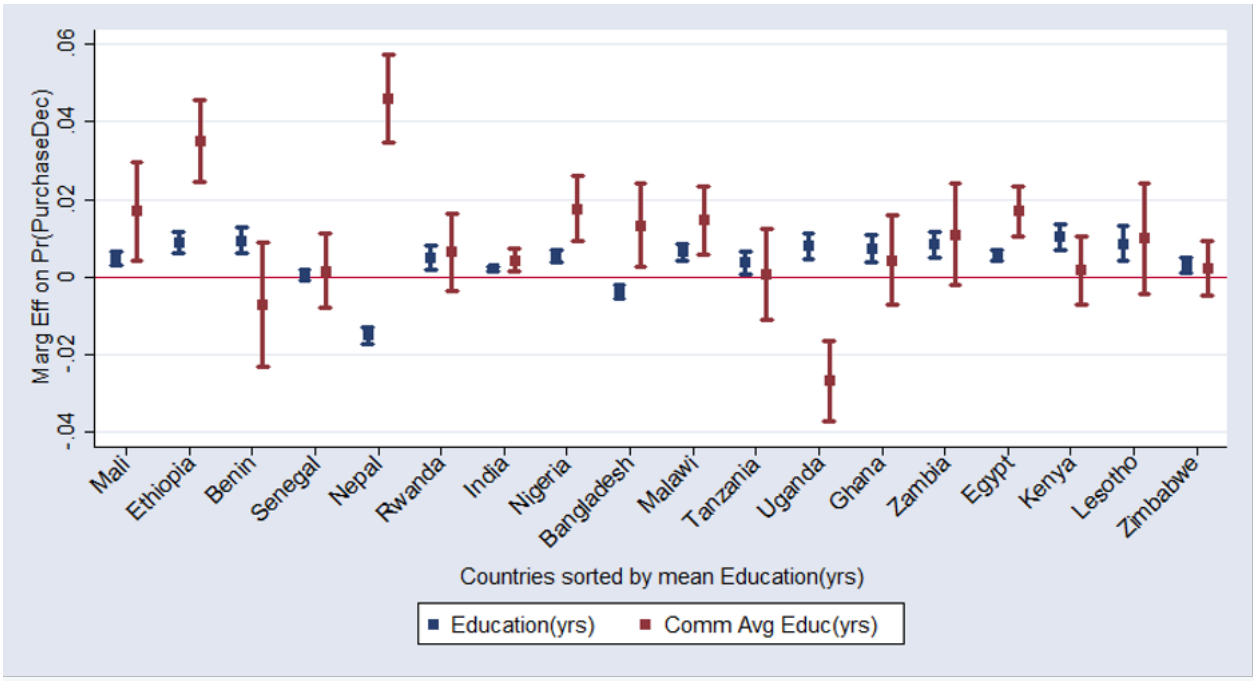

Figure 3a. Marginal effect of own education and community level average of education among women on women's probability to participate in purchase decision

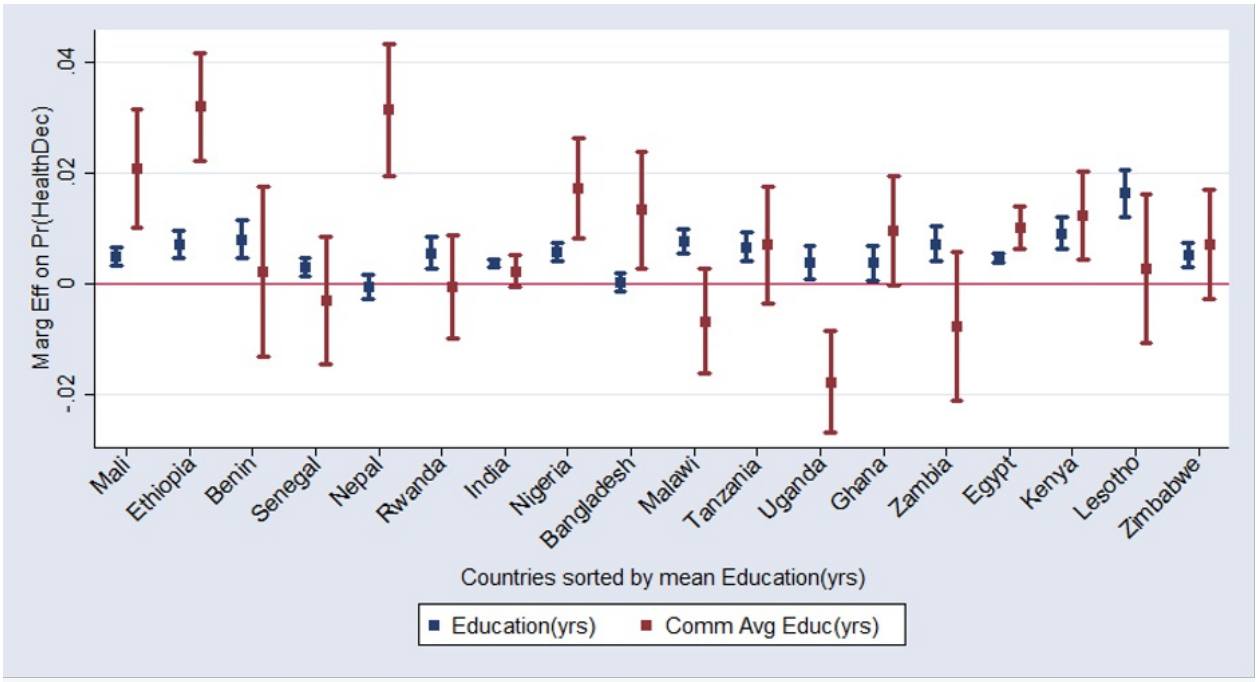

Figure 3b. Marginal effect of own education and community level average of education among women on women's probability to participate in health decision

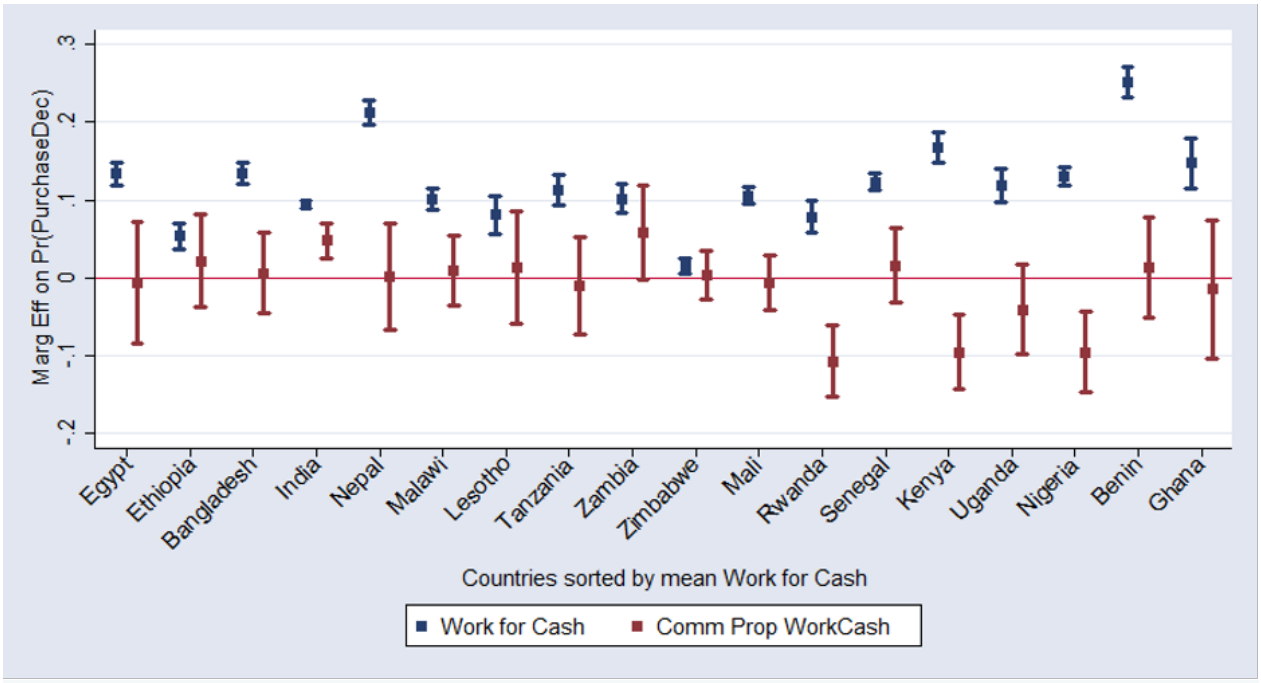

Figure 4a. Marginal effect of participation in paid employment and community level proportion of women participating in paid employment on women's probability to participate in purchase decision

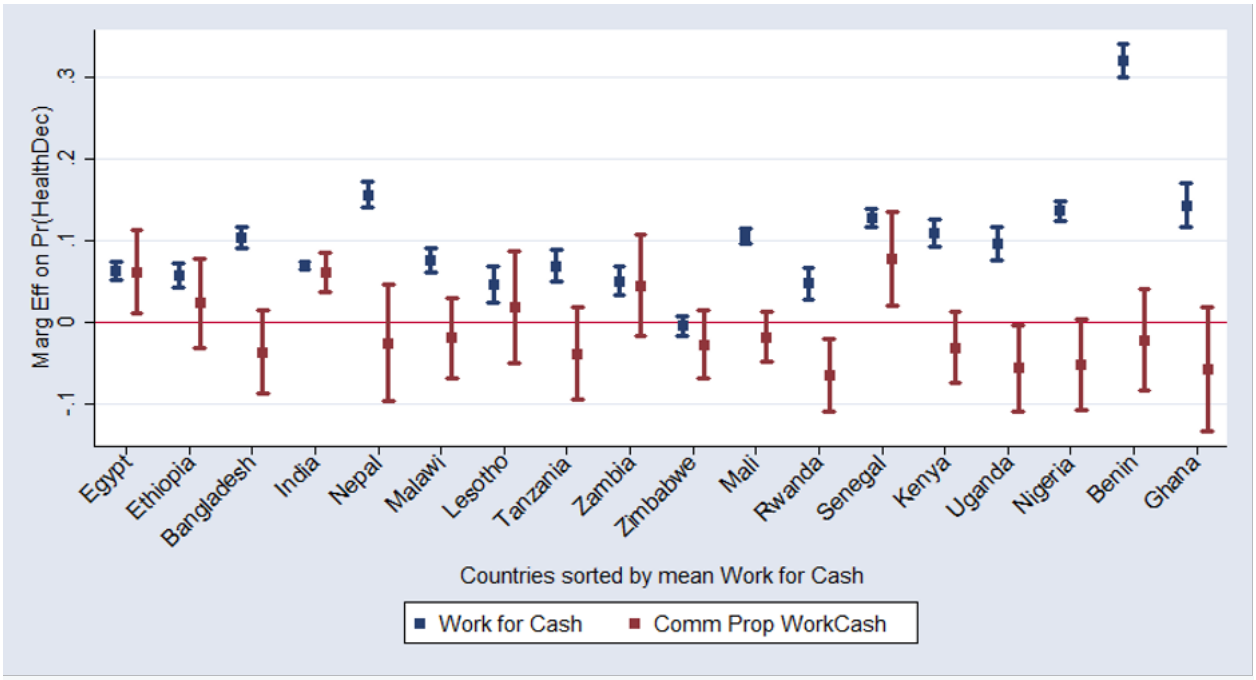

Figure 4b. Marginal effect of participation in paid employment and community level proportion of women participating in paid employment on women's probability to participate in health decision

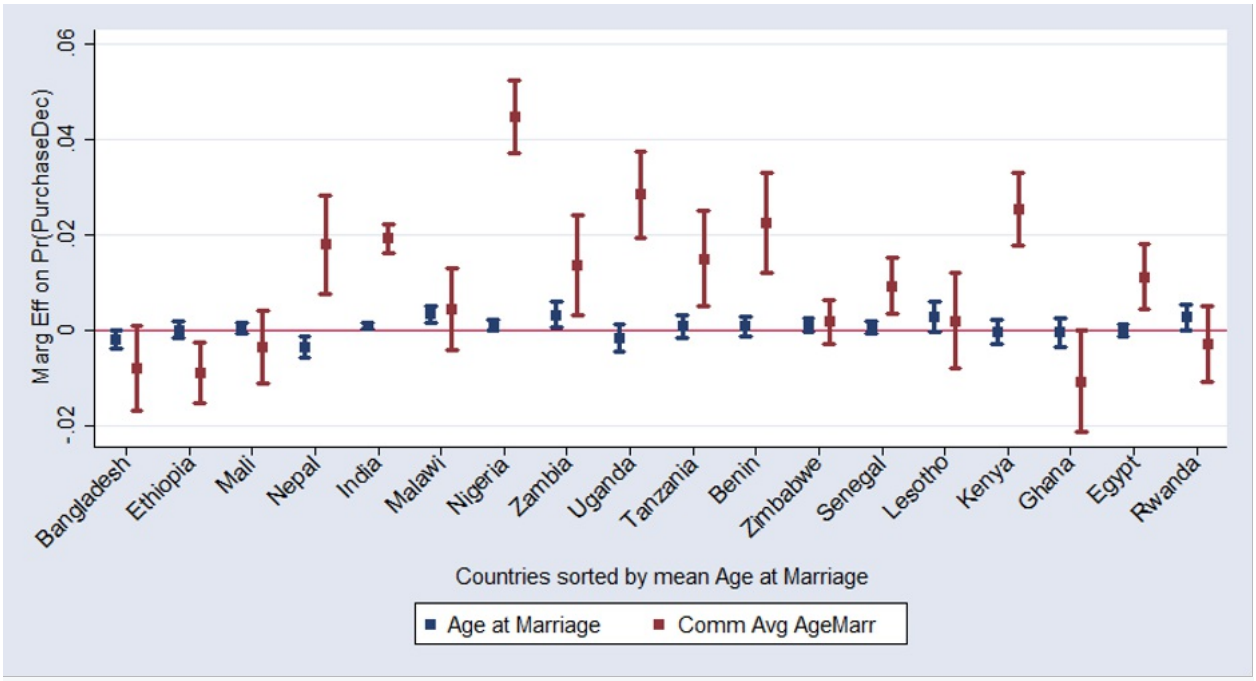

Figure 5a. Marginal effect of age at first marriage and community level average of age at first marriage among women on women's probability to participate in purchase decision

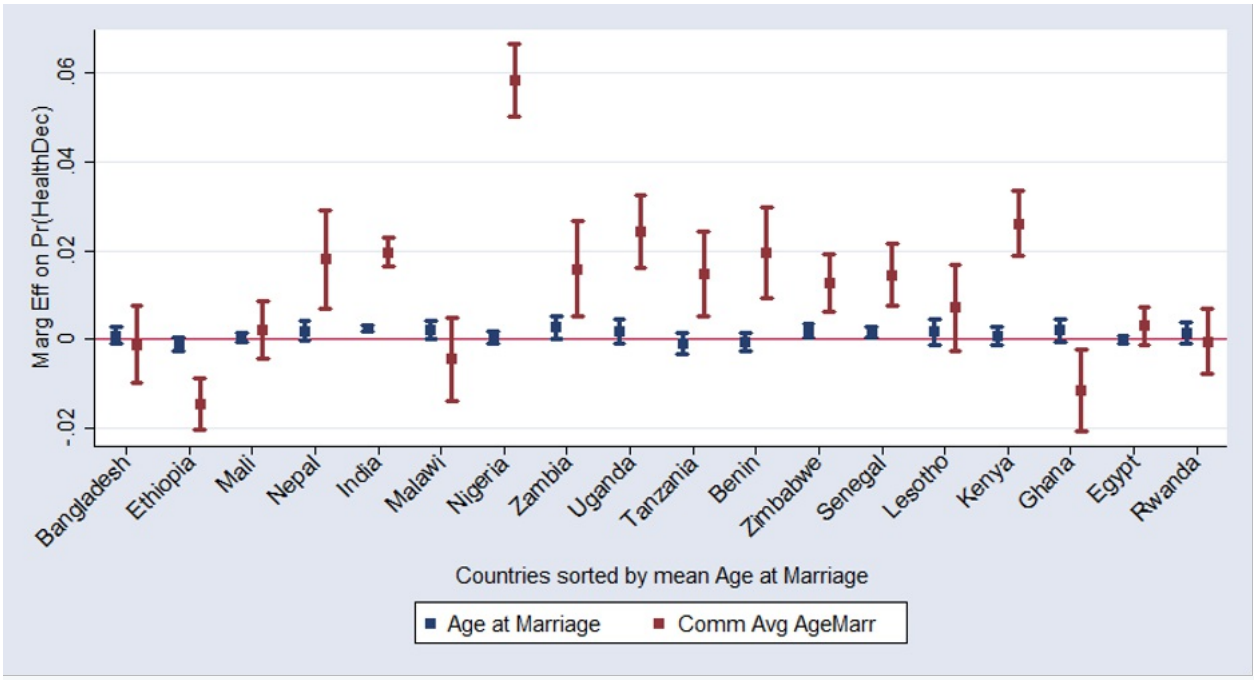

Figure 5b. Marginal effect of age at first marriage and community level average of age at first marriage among women on women's probability to participate in health decision

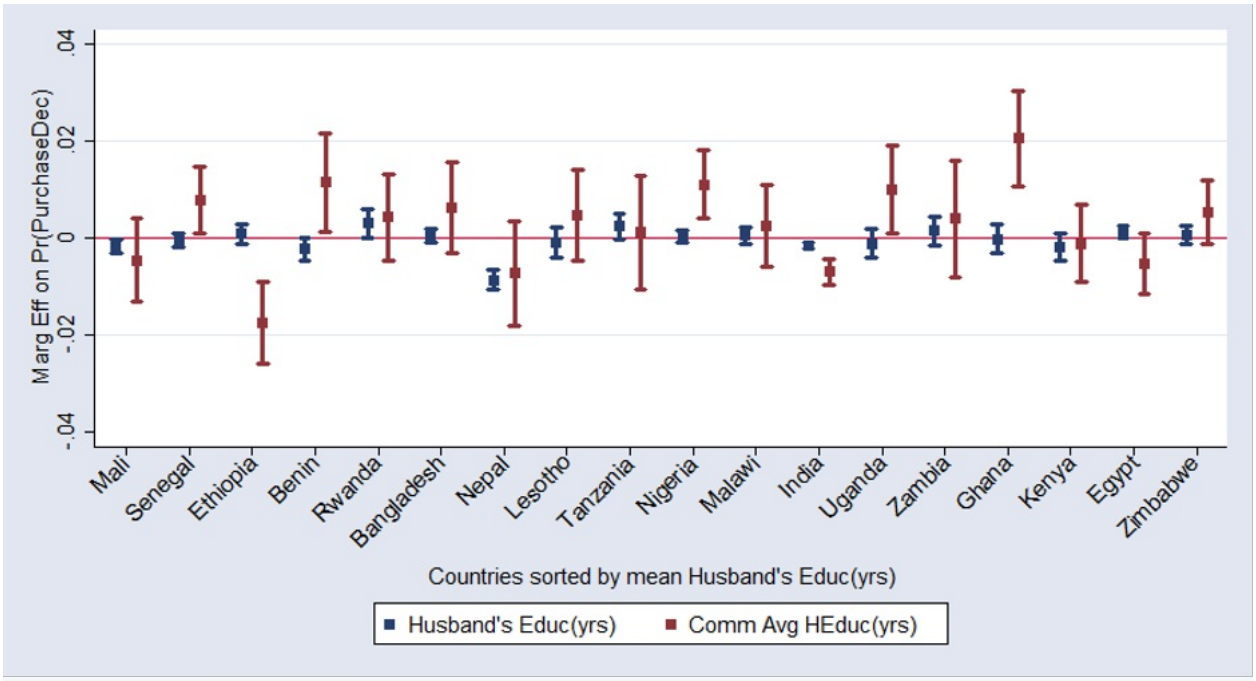

Figure 6a. Marginal effect of husband's education and community level average of education among husband's on women's probability to participate in purchase decision.

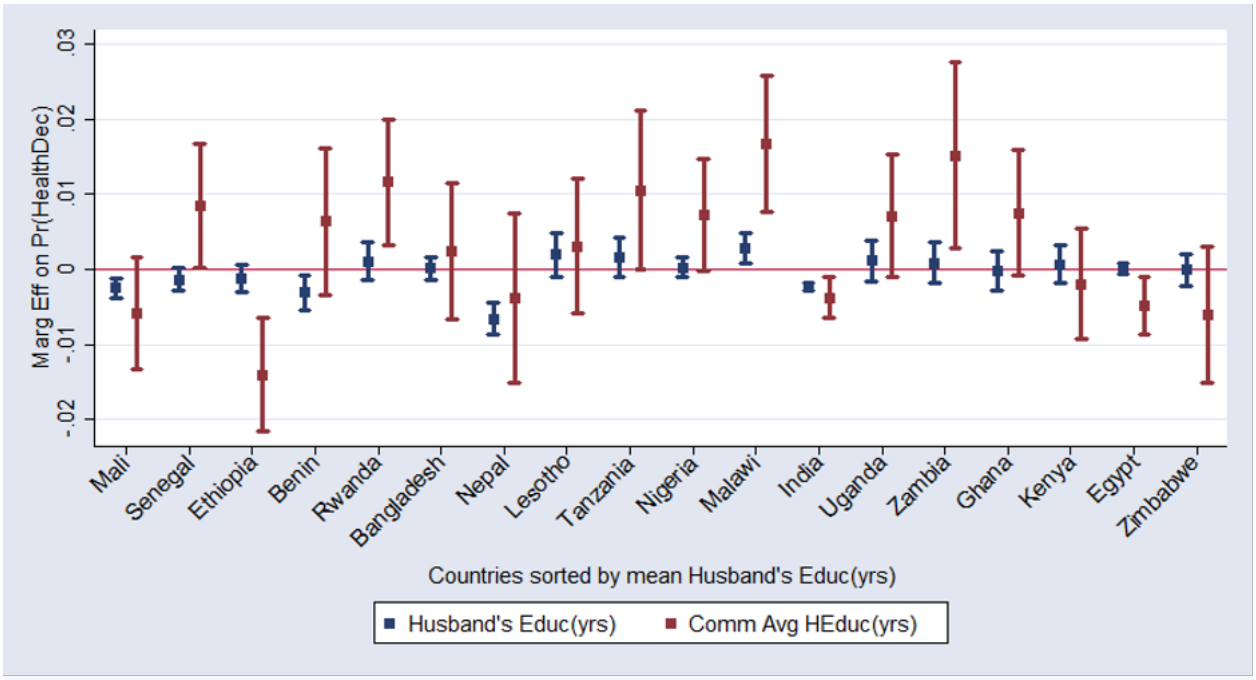

Figure 6b. Marginal effect of husband's education and community level average of education among husband's on women's probability to participate in health decision.

Tables

Table 1. Sample year and size for countries reporting decision variables in the latest three DHS surveys.

Country	Survey years (Sample Size)			Total
Bangladesh	2007 (10996)	2011 (16704)	2014 (16830)	44530
Benin	2001 (6219)	2006 (17794)	2011 (11880)	35893
Egypt	2005 (18134)	2008 (15406)	2014 (20430)	53970
Ethiopia	2005 (8644)	2011 (10204)	2016 (9824)	28672
Ghana	2003 (5691)	2008 (2950)	2014 (5456)	14097
India	1998 (90303)	2005 (87925)	2015 (86811)	265039
Kenya	2003 (8195)	2008 (5041)	2014 (9016)	22252
Lesotho	2004 (7095)	2009 (4129)	2014 (3609)	14833
Malawi	2004 (11698)	2010 (15445)	2016 (15952)	43095
Mali	2001 (12849)	2006 (14583)	2012 (8737)	36169
Nepal	2006 (10793)	2011 (9460)	2016 (9904)	30157
Nigeria	2003 (7620)	2008 (23954)	2013 (27274)	58848
Rwanda	2005 (11321)	2010 (6834)	2014 (6890)	25045
Senegal	2015 (6048)	2016 (6147)	2017 (11394)	23589
Tanzania	2004 (10329)	2010 (6310)	2015 (8189)	24828
Uganda	2006 (5362)	2011 (5352)	2016 (11379)	22093
Zambia	2001 (7658)	2007 (4316)	2013 (9649)	21623
Zimbabwe	2005 (5431)	2010 (5578)	2015 (6015)	17024

Table 2. Distribution of national averages for main independent variables by countries (averaged over latest three DHS survey)

Country	Age at Marriage	Education (yrs)	Husband Educ(Yrs)	Work for Cash
Bangladesh	15.6	4.9	5.2	0.238
Benin	18.6	2.1	3.4	0.667
Egypt	19.8	7.4	8.6	0.148
Ethiopia	16.5	1.8	3.1	0.22
Ghana	19.4	6	8	0.714
India	17.5	4.7	6.8	0.261
Kenya	19.1	7.6	8.5	0.51
Lesotho	19.1	7.6	6	0.331
Malawi	17.6	5.1	6.7	0.299
Mali	16.7	1.3	1.6	0.432
Nepal	17.3	3.7	5.9	0.267
Nigeria	17.6	4.9	6.1	0.608
Rwanda	20.6	4.1	4.4	0.453
Senegal	19	2.6	2.6	0.476
Tanzania	18.4	5.4	6.1	0.361
Uganda	18	5.5	7.2	0.577
Zambia	17.9	6	7.8	0.365
Zimbabwe	19	8.6	9.5	0.411

Appendix (Supplementary Materials)

	Bangladesh	Benin	Ethiopia	Ghana	India	Kenya	Lesotho	Malawi	Mali
Education(yrs)	-0.016***	0.038***	0.044***	0.033***	0.010***	0.045***	0.045***	0.028***	0.041***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Work for Cash	0.575***	1.011***	0.262***	0.662***	0.411***	0.723***	0.421***	0.446***	0.892***
	(0.03)	(0.04)	(0.04)	(0.07)	(0.01)	(0.04)	(0.07)	(0.03)	(0.04)
Age at first Marriage	-0.008*	0.003	0.001	-0.002	0.005***	-0.001	0.015*	0.015***	0.003
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Nuclear Family	0.431***	-0.148***	0.029	-0.206***	0.272***	-0.271***	0.113*	-0.247***	-0.251***
	(0.02)	(0.03)	(0.03)	(0.05)	(0.01)	(0.04)	(0.06)	(0.03)	(0.04)
Husband's Education(yrs)	0.003	-0.009*	0.004	-0.000	-0.007***	-0.008	-0.005	0.002	-0.014**
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Wealth (omitted Quintile1)									
Wealth Quintile 2	0.081**	-0.051	0.193***	0.020	0.101***	0.076	0.033	-0.017	-0.009
	(0.04)	(0.05)	(0.05)	(0.09)	(0.02)	(0.06)	(0.08)	(0.04)	(0.06)
Wealth Quintile 3	0.073**	-0.206***	0.236***	0.104	0.213***	0.167**	0.072	0.030	0.035
	(0.04)	(0.05)	(0.05)	(0.11)	(0.02)	(0.07)	(0.09)	(0.04)	(0.06)
Wealth Quintile 4	0.089**	-0.340***	0.293***	-0.082	0.360***	0.184***	0.287***	0.054	0.026
	(0.04)	(0.06)	(0.05)	(0.13)	(0.02)	(0.07)	(0.09)	(0.04)	(0.06)
Wealth Quintile 5	0.260***	-0.377***	0.525***	-0.129	0.514***	0.174*	0.313***	0.164***	-0.135
	(0.05)	(0.08)	(0.07)	(0.15)	(0.02)	(0.09)	(0.11)	(0.05)	(0.09)
Rural	-0.204***	0.091	-0.258**	-0.001	-0.290***	0.007	-0.097	-0.064	-0.121
	(0.04)	(0.07)	(0.10)	(0.12)	(0.02)	(0.06)	(0.10)	(0.06)	(0.11)
Community Variables									
Avg Education(Women)	0.057**	-0.029	0.172***	0.020	0.019***	0.008	0.052	0.064***	0.142***
	(0.02)	(0.03)	(0.03)	(0.03)	(0.01)	(0.02)	(0.04)	(0.02)	(0.05)
Prop Work for Cash(Wom	0.028	0.055	0.107	-0.065	0.209***	-0.410***	0.068	0.039	-0.051
	(0.11)	(0.13)	(0.15)	(0.20)	(0.05)	(0.10)	(0.19)	(0.10)	(0.15)
Avg Age first Marriage(W	-0.033*	0.090***	-0.044***	-0.048**	0.084***	0.110***	0.010	0.020	-0.030
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)	(0.03)
Avg Education(Husband)	0.027	0.046**	-0.086***	0.093***	-0.030***	-0.005	0.025	0.011	-0.037
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)	(0.04)
Constant	0.688**	-3.410***	0.937***	-0.349	-1.697***	-3.058***	-1.758***	-2.799***	-1.780***
	(0.28)	(0.39)	(0.28)	(0.47)	(0.12)	(0.29)	(0.47)	(0.33)	(0.54)
Observations	43,496	23,625	27,227	9,456	258,181	17,275	10,604	35,643	29,950
Number of groups	1,561	1,738	1,774	1,244	14,068	2,374	1,203	2,219	1,222
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table A1. Results from Multilevel Logistic Regression on probability to participate in purchase decision.

(regressions also control for survey year dummies not reported)

	Nepal	Nigeria	Rwanda	Senegal	Zimbabwe	Uganda	Egypt	Tanzania	Zambia
Education(yrs)	-0.061***	0.026***	0.025***	0.005	0.034***	0.035***	0.024***	0.016***	0.035***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Work for Cash	0.857***	0.623***	0.406***	1.094***	0.175***	0.523***	0.557***	0.493***	0.419***
	(0.03)	(0.03)	(0.06)	(0.04)	(0.06)	(0.05)	(0.03)	(0.04)	(0.04)
Age at first Marriage	-0.015***	0.006*	0.014**	0.005	0.012	-0.007	0.000	0.004	0.014**
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Nuclear Family	0.487***	0.008	-0.262***	0.506***	0.046	-0.324***	0.091***	-0.106***	-0.147***
	(0.03)	(0.02)	(0.05)	(0.10)	(0.06)	(0.04)	(0.02)	(0.04)	(0.04)
Husband's Education(yrs)	-0.034***	0.002	0.016**	-0.003	0.008	-0.005	0.005**	0.011*	0.006
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Wealth (omitted Quintile1)									
Wealth Quintile 2	-0.006	-0.010	-0.028	-0.038	0.134*	-0.224***	0.117***	-0.051	0.050
	(0.04)	(0.04)	(0.07)	(0.06)	(0.08)	(0.07)	(0.03)	(0.06)	(0.05)
Wealth Quintile 3	-0.015	0.044	-0.073	-0.233***	0.067	-0.257***	0.259***	-0.028	0.093
	(0.05)	(0.05)	(0.07)	(0.08)	(0.09)	(0.07)	(0.03)	(0.06)	(0.06)
Wealth Quintile 4	0.017	0.001	-0.073	-0.333***	0.319***	-0.363***	0.373***	-0.094	0.250***
	(0.05)	(0.06)	(0.07)	(0.09)	(0.11)	(0.08)	(0.04)	(0.07)	(0.07)
Wealth Quintile 5	0.363***	-0.081	0.001	-0.369***	0.464***	-0.331***	0.438***	-0.220**	0.497***
	(0.06)	(0.07)	(0.09)	(0.11)	(0.14)	(0.10)	(0.05)	(0.09)	(0.10)
Rural	-0.028	0.424***	-0.095	-0.054	0.063	-0.189*	0.063	-0.242***	0.023
	(0.05)	(0.07)	(0.10)	(0.09)	(0.12)	(0.10)	(0.05)	(0.08)	(0.07)
Community Variables									
Avg Education(Women)	0.185***	0.084***	0.033	0.015	0.027	-0.117***	0.071***	0.003	0.045*
	(0.02)	(0.02)	(0.03)	(0.04)	(0.04)	(0.02)	(0.01)	(0.03)	(0.03)
Prop Work for Cash(Wome	0.007	-0.454***	-0.556***	0.143	0.047	-0.177	-0.025	-0.042	0.241*
	(0.14)	(0.13)	(0.12)	(0.22)	(0.18)	(0.13)	(0.17)	(0.14)	(0.13)
Avg Age first Marriage(Wo	0.073***	0.213***	-0.015	0.083***	0.021	0.125***	0.047***	0.066***	0.056***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.01)	(0.02)	(0.02)
Avg Education(Husband)	-0.029	0.053***	0.023	0.069**	0.063	0.044**	-0.022	0.006	0.016
	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.02)	(0.01)	(0.03)	(0.03)
Constant	-1.269***	-6.537***	0.282	-4.025***	0.427	-1.461***	-1.622***	-2.117***	-2.796***
	(0.36)	(0.30)	(0.40)	(0.45)	(0.49)	(0.37)	(0.26)	(0.38)	(0.36)
Observations	27,511	53,579	12,452	21,138	15,721	12,690	53,746	18,004	17,889
Number of groups	932	2,144	1,443	828	1,204	1,444	2,829	1,557	1,360
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table A1. Results from Multilevel Logistic Regression on probability to participate in purchase decision (continued)

(regressions also control for survey year dummies not reported)

	Bangladesh	Benin	Ethiopia	Ghana	India	Kenya	Lesotho	Malawi	Mali
Education(yrs)	0.001	0.032***	0.042***	0.019**	0.017***	0.047***	0.094***	0.031***	0.043***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Work for Cash	0.453***	1.289***	0.345***	0.752***	0.318***	0.570***	0.271***	0.306***	0.953***
	(0.03)	(0.04)	(0.05)	(0.07)	(0.01)	(0.05)	(0.07)	(0.03)	(0.04)
Age at first Marriage	0.004	-0.003	-0.007	0.011	0.011***	0.004	0.010	0.009**	0.005
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)
Nuclear Family	0.168***	-0.223***	0.006	-0.107*	0.097***	-0.248***	-0.165***	-0.197***	-0.291***
	(0.02)	(0.03)	(0.03)	(0.06)	(0.01)	(0.04)	(0.06)	(0.02)	(0.04)
Husband's Education(yrs)	0.000	-0.012***	-0.007	-0.001	-0.011***	0.004	0.011	0.011***	-0.022***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Wealth (omitted Quintile1)									
Wealth Quintile 2	0.002	-0.048	0.092*	-0.121	0.068***	-0.115*	-0.022	-0.067*	-0.051
	(0.04)	(0.05)	(0.05)	(0.09)	(0.02)	(0.07)	(0.08)	(0.04)	(0.06)
Wealth Quintile 3	0.001	-0.170***	0.088*	-0.054	0.167***	-0.010	0.126	-0.054	0.008
	(0.04)	(0.05)	(0.05)	(0.11)	(0.02)	(0.07)	(0.09)	(0.04)	(0.06)
Wealth Quintile 4	0.065	-0.307***	0.222***	-0.059	0.342***	-0.081	0.322***	-0.005	0.034
	(0.04)	(0.06)	(0.06)	(0.13)	(0.02)	(0.08)	(0.10)	(0.04)	(0.06)
Wealth Quintile 5	0.226***	-0.324***	0.463***	-0.147	0.491***	0.055	0.387***	0.139***	-0.193**
	(0.05)	(0.08)	(0.08)	(0.15)	(0.02)	(0.10)	(0.12)	(0.05)	(0.09)
Rural	-0.095**	0.012	-0.307***	0.074	-0.188***	0.221***	-0.092	-0.210***	-0.117
	(0.04)	(0.07)	(0.12)	(0.12)	(0.02)	(0.07)	(0.11)	(0.06)	(0.10)
Community Variables									
Avg Education(Women)	0.059**	0.009	0.192***	0.050*	0.010	0.064***	0.016	-0.028	0.187***
	(0.02)	(0.03)	(0.03)	(0.03)	(0.01)	(0.02)	(0.04)	(0.02)	(0.05)
Prop Work for Cash(Wom	-0.157	-0.086	0.141	-0.298	0.279***	-0.158	0.107	-0.076	-0.161
	(0.11)	(0.13)	(0.17)	(0.20)	(0.05)	(0.12)	(0.20)	(0.10)	(0.14)
Avg Age first Marriage(W	-0.005	0.079***	-0.087***	-0.060**	0.090***	0.135***	0.041	-0.018	0.021
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)	(0.03)
Avg Education(Husband)	0.011	0.026	-0.084***	0.039*	-0.017***	-0.010	0.018	0.068***	-0.053
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)	(0.03)
Constant	0.116	-3.102***	2.271***	0.363	-2.009***	-3.393***	-2.055***	-1.228***	-2.499***
	(0.28)	(0.38)	(0.31)	(0.47)	(0.13)	(0.33)	(0.50)	(0.34)	(0.49)
Observations	43,499	23,625	27,227	9,451	258,186	17,276	10,606	35,656	29,952
Number of groups	1,561	1,738	1,774	1,244	14,068	2,374	1,203	2,219	1,222
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table A2. Results from Multilevel Logistic Regression on probability to participate in health decision

(regressions also control for survey year dummies not reported)

	Nepal	Nigeria	Rwanda	Senegal	Zimbabwe	Uganda	Egypt	Tanzania	Zambia
Education(yrs)	-0.003	0.026***	0.035***	0.021***	0.048***	0.019**	0.039***	0.030***	0.033***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Work for Cash	0.638***	0.610***	0.299***	0.938***	-0.039	0.480***	0.523***	0.311***	0.230***
	(0.03)	(0.03)	(0.06)	(0.04)	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)
Age at first Marriage	0.008	0.002	0.010	0.012**	0.018**	0.009	-0.001	-0.004	0.013**
	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Nuclear Family	0.170***	-0.038	-0.331***	0.174*	-0.201***	-0.333***	0.018	-0.022	-0.057
	(0.03)	(0.02)	(0.05)	(0.10)	(0.05)	(0.04)	(0.03)	(0.04)	(0.04)
Husband's Education(yrs)	-0.027***	0.001	0.007	-0.010*	-0.001	0.006	0.001	0.007	0.004
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Wealth (omitted Quintile1)									
Wealth Quintile 2	0.006	0.022	0.073	-0.023	-0.145*	-0.165**	0.089**	-0.004	0.049
	(0.05)	(0.04)	(0.08)	(0.06)	(0.08)	(0.07)	(0.04)	(0.06)	(0.06)
Wealth Quintile 3	-0.039	0.007	0.055	-0.303***	-0.079	-0.284***	0.208***	0.103*	0.015
	(0.05)	(0.05)	(0.08)	(0.07)	(0.08)	(0.07)	(0.04)	(0.06)	(0.06)
Wealth Quintile 4	-0.021	-0.025	0.151*	-0.410***	-0.013	-0.317***	0.394***	-0.078	0.074
	(0.05)	(0.06)	(0.08)	(0.09)	(0.10)	(0.08)	(0.05)	(0.07)	(0.08)
Wealth Quintile 5	0.201***	-0.065	0.172*	-0.410***	0.123	-0.308***	0.596***	-0.045	0.220**
	(0.06)	(0.07)	(0.10)	(0.10)	(0.13)	(0.10)	(0.06)	(0.09)	(0.10)
Rural	-0.023	0.305***	0.022	-0.025	0.067	-0.160	0.070	-0.001	-0.141
	(0.06)	(0.07)	(0.11)	(0.09)	(0.12)	(0.11)	(0.06)	(0.08)	(0.09)
Community Variables									
Avg Education(Women)	0.129***	0.077***	-0.003	-0.023	0.067	-0.089***	0.085***	0.032	-0.036
	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
Prop Work for Cash(Wome	-0.102	-0.231*	-0.404***	0.577***	-0.253	-0.280**	0.519**	-0.168	0.207
	(0.15)	(0.13)	(0.14)	(0.21)	(0.20)	(0.13)	(0.21)	(0.13)	(0.14)
Avg Age first Marriage(Wo	0.074***	0.261***	-0.002	0.107***	0.121***	0.121***	0.026	0.066***	0.073***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Avg Education(Husband)	-0.016	0.033*	0.073***	0.062**	-0.057	0.035*	-0.040**	0.047*	0.070**
	(0.02)	(0.02)	(0.03)	(0.03)	(0.04)	(0.02)	(0.02)	(0.02)	(0.03)
Constant	-1.802***	-6.838***	-0.034	-4.417***	-1.064**	-1.192***	0.056	-1.361***	-2.455***
	(0.39)	(0.30)	(0.46)	(0.45)	(0.54)	(0.39)	(0.32)	(0.37)	(0.41)
Observations	27,511	53,602	12,455	21,138	15,721	12,690	53,752	18,007	17,892
Number of groups	932	2,144	1,443	828	1,204	1,444	2,829	1,557	1,360
Standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table A2. Results from Multilevel Logistic Regression on probability to participate in health decision (continued)

(regressions also control for survey year dummies not reported)

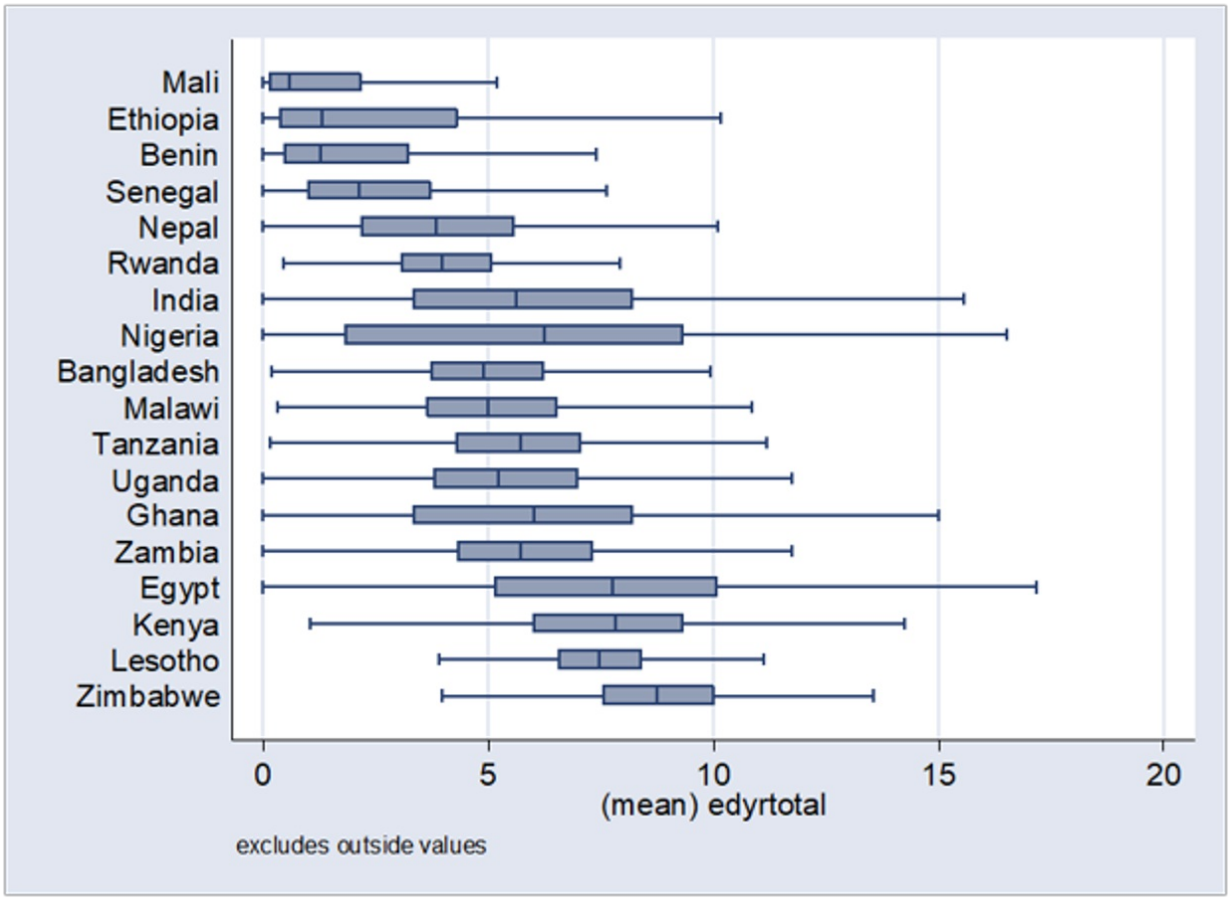

Figure A1. Distribution of PSU averages for education by country

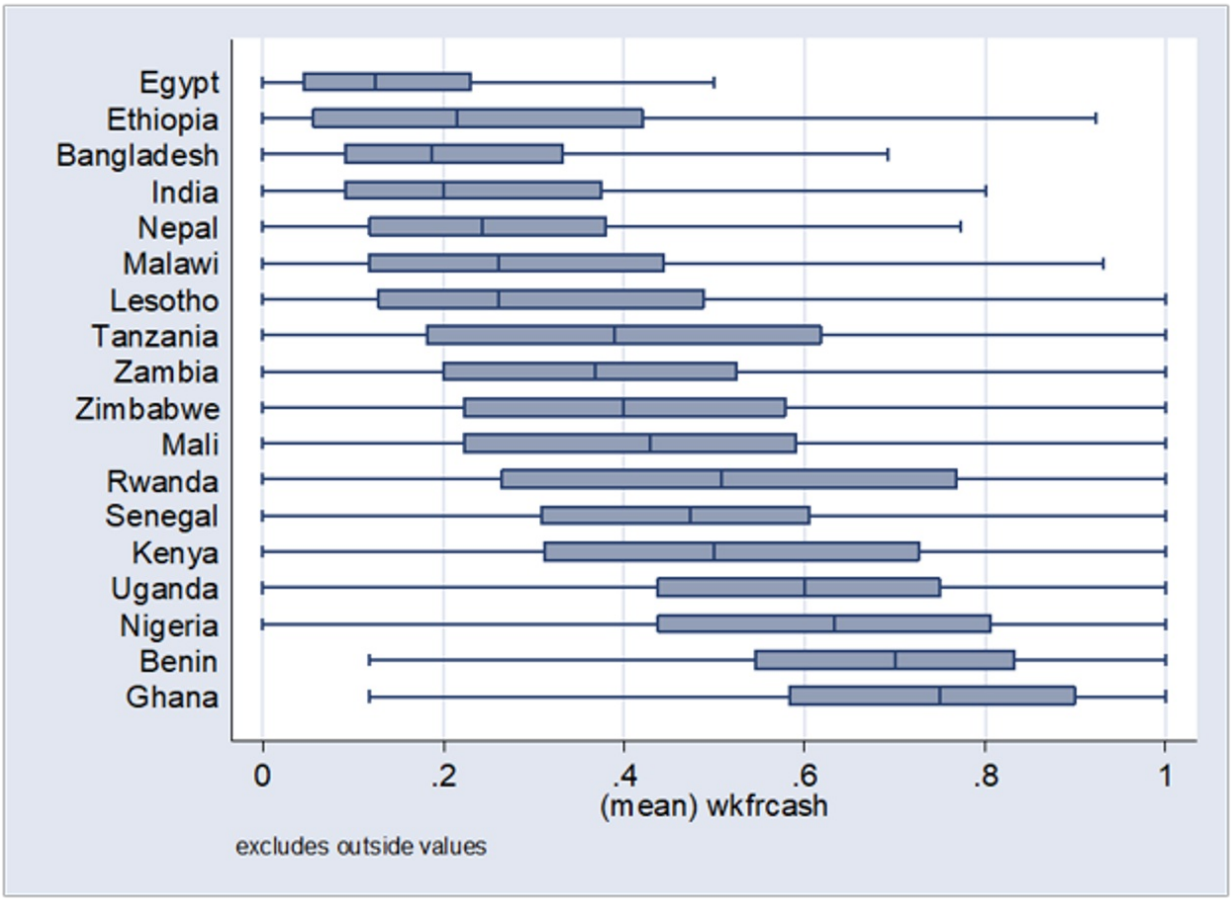

Figure A2. Distribution of PSU proportions of paid work by country

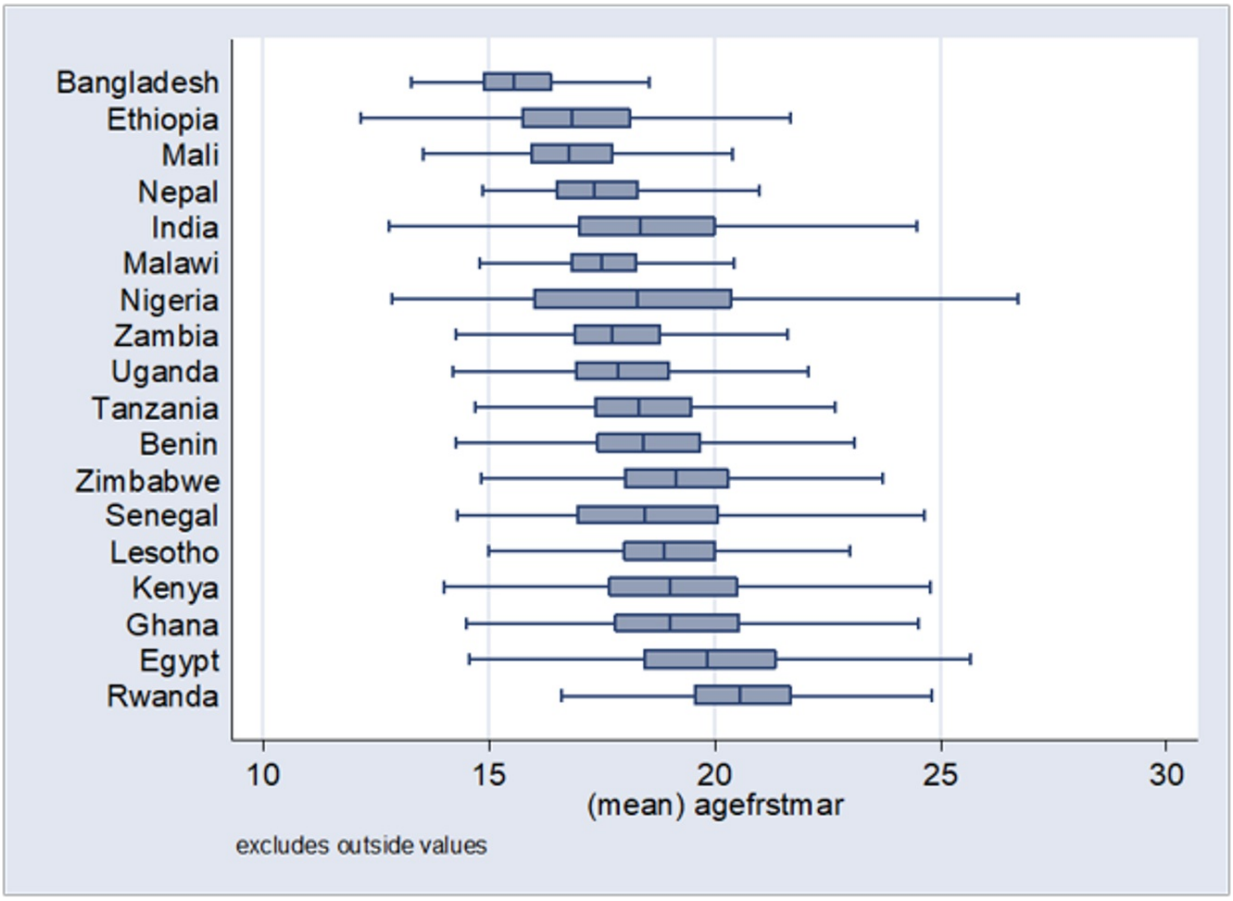

Figure A3. Distribution of PSU averages for age at first marriage by country

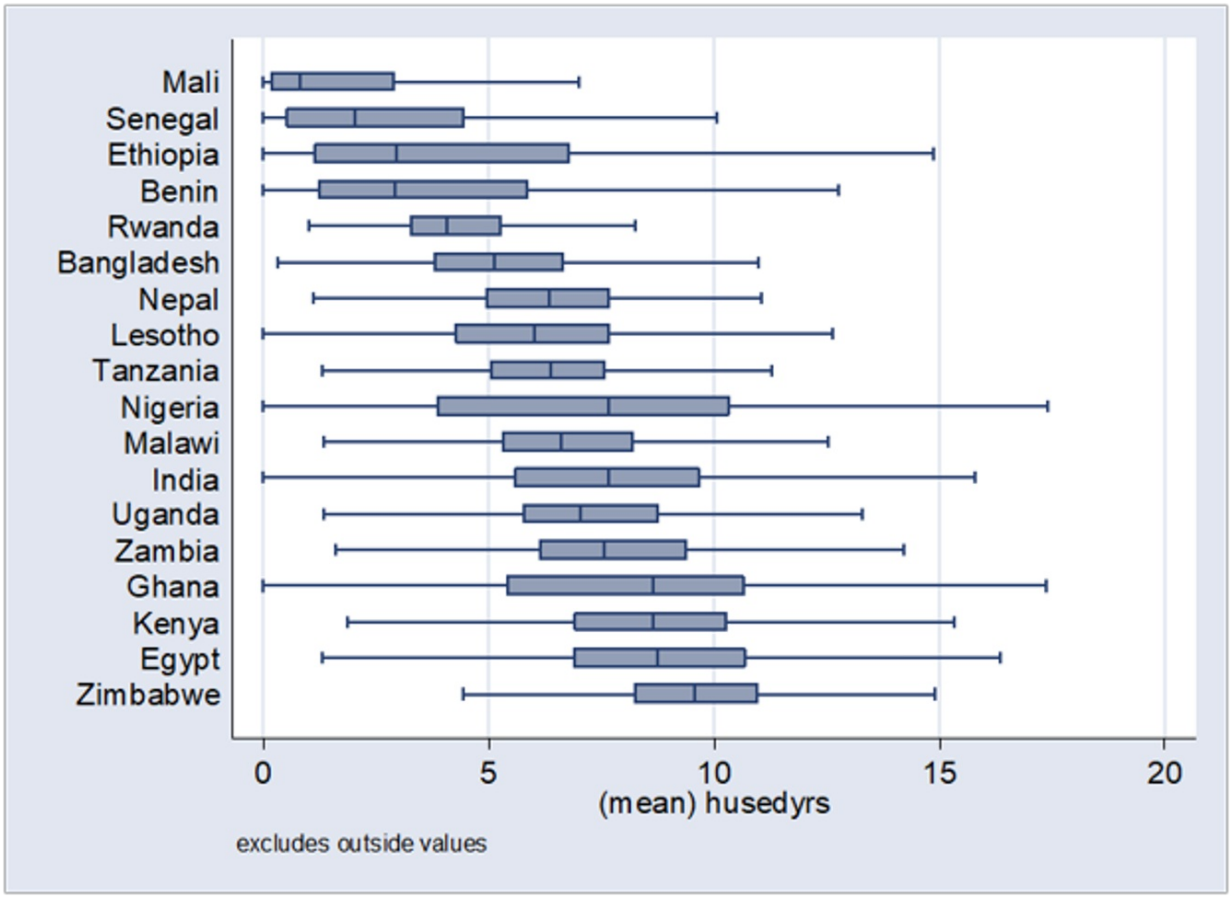

Figure A4. Distribution of PSU averages for spouse's education by country

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