Rural Wage Employment in Developing Countries

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Abstract

Using nationally-representative data from 14 developing countries, this paper explores rural wage employment and its potential as a mechanism for improving the well being of the rural population. The analysis suggests that the sector of employment (agricultural or non-agricultural) and the overall household livelihood strategy appear to be of limited importance in determining whether a household uses wage employment as a pathway out of poverty. Rather, high-productivity wage employment appears to be linked to the underlying assets of the household and its individual members. In particular, the evidence points to educational and infrastructure investment as critical for providing opportunities in the labour market that lead to higher wages. The analysis also suggests that gender is very important in participation in labour markets as well as wages earned in those markets indicating that special attention be given to the gender consequences of any employment policy.

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1. The role of rural wage employment

A recent study of developing countries that examines what makes the middle class the middle class shows that the primary characteristic of this group in both urban and rural areas is that they have permanent, well-paying jobs (Banerjee & Duflo (2008).[1] Although this study paints a picture of wage employment as a key element of improving household well being, in rural areas the labour market, at least agricultural wage employment, has often been viewed negatively with a general perception that it is a refuge sector for the rural poor (Lanjouw, 2007). Along with this negative perception of agricultural labour, the rural labour force is growing at a rate faster than the agricultural labour force limiting the ability of the agricultural sector to absorb rural labour (World Bank, 2008). If this is correct, it raises questions about the potential for agricultural labour as a pathway to the middle class.

Of course, one alternative option for rural labour in developing countries is to migrate to cities where there may be greater potential for steady employment. There is evidence that the poor have indeed been migrating to urban centres at a rate faster than the rest of the population, although the number of poor in rural areas remains substantially higher than in urban areas (Ravallion, Chen & Sangraula, 2007). Another alternative to agricultural wage employment is the rural non-agricultural labour market. The data show that the rural non-agricultural economy has increased in importance in terms of its share of rural household income it provides and continues to grow (FAO, 1998; Reardon, Berdegue & Escobal, 2001; Davis *et al.*, 2007). What is less clear is the role that rural non-agricultural wage activities can play in providing a clear exit

[1] Banerjee & Duflo (2008) define the middle class as households whose daily per capita expenditures valued at purchasing power parity are between US$2 and $4, and those between $6 and $10.

out of poverty for rural households and whether it is truly so distinguishable from agricultural wage activities. There remains a question of whether the rural non-agricultural economy can provide such employment opportunities.

Given the evidence that permanent wage labour is linked to higher standards of living, it is important to understand whether using wage employment as a pathway out of poverty is a realistic possibility for the rural population. The objective of this paper is to analyze rural employment in developing countries to see the role that off-farm labour participation plays in the well being of the rural population. Rural labour markets differ from urban markets primarily because of the central role of agriculture in the rural economy. Both the nature of the work done on farms and the seasonality of the demand for workers determines how rural labour is organized. Rural labour markets are also likely to be limited by the absence of infrastructure familiar to more densely populated areas. Without good roads and communications, both workers and employers suffer higher transaction costs in labour market interactions, making them "thinner" than they would otherwise be in an urban setting. Search costs are higher in the coordination of employers and workers, and the higher costs of movement reduce geographic integration. These factors are likely to create differences between rural and urban labour employment and in assessing rural labour supply we provide contrasts to the urban sector.

As part of examining rural labour employment, it is important not just to describe the characteristics of employment and how it differs from urban areas, but also to understand why some may achieve higher wages in the labour market while others do not. One difference in returns is in the sector of employment and a common contrast is between agricultural and non-agricultural wage employment with the expectation, noted above, that agriculture tends to be low productivity and non-agricultural activities higher productivity. We explore whether this is the

case both in general and through examining individual non-agricultural industries. Additionally, we want to consider what underlying factors—such as gender, education, land access and infrastructure—might influence labour market employment and the wages earned in such employment. Many rural households are likely to be involved in multiple economic activities, including agricultural production, in part due to the seasonal nature of farming. It is critical to examine what relationship there may exist between a households overall livelihood strategy and wage employment. Through this combination of analysis the hope is to provide a clear understanding of rural labour employment and the factors that influence it.

To meet the objectives of this paper, the analysis presented below is organized around four areas: i) understanding the time dimension of employment participation (Section 3), ii) comparing agricultural and non-agricultural activities including evaluating employment activities by industrial sectors (Section 4), iii) understanding the key factors that influence high productivity wage employment (section 5), and iv) linking individual wage employment to household livelihood strategies (Section 6). This is preceded by Section 2 which provides an overview of the multicountry RIGA data base which is used in this analysis. Section 7 then provides conclusions.

2. The RIGA multicountry database

For this analysis, data from 14 developing countries in the RIGA database are used. The RIGA database is a pool of multipurpose surveys from countries in the four principal developing regions—Asia, Africa, Eastern Europe and Central Asia, and Latin America—made available via a joint initiative of the World Bank (WB) and Food and Agriculture Organization of the United Nations (FAO).[2] Although previous work using the RIGA database has been conducted at the

[2] Information on the RIGA database can be found at http://www.fao.org/es/ESA/riga/index_en.htm.

household level, this paper pursues questions of employment and wage patterns and therefore individual-level labour market data has been constructed.

Creating comparable individual-level labour data requires establishing a consistent framework to resolve the many challenges inherent in a multi-country analysis.[3] The first key step involves defining rurality, which is our primary sample selection criterion. Following previous research using the RIGA database, government definitions are used since they reflect local information about what constitutes a rural area (Carletto *et al.*, 2007). The definition of rural is defined based on the location of the domicile of the household and not of the employment location since the interest in this paper is on the labour market activities of rural households. The focus of this analysis is on individuals of working age, defined here as those between the ages of 15 and 60. Labour market participants are defined as any individual in the household in this age category that responded to labour time and earnings questions in wage employment modules of the corresponding survey. Along with the data on labour market activities, individual-level and household-level variables are also available in these data sets. This allows for an investigation of how labour market participation and remuneration varies based on individual and household factors. The final data set includes data for each country individual labour participation, time participations categories, daily wages, individual characteristics and household level characteristics. Table 1 lists the countries used in this investigation, the particular survey used and the number of rural individuals of working age in each survey.

[Table 1]

3. Rural versus urban employment: Participation and the permanence of work

[3] Details concerning the construction of comparable labor data can be found in Quiñones *et al.* (2008).

The evidence shows that there is a great deal of variance in overall participation rates, suggesting substantial differences in rural labour markets in each developing country (Table 1). In general, rural labour market participation rates are slightly lower than urban rates although somewhat surprisingly not dramatically so. Across all the countries rural participation rates are, on average, 88% of urban rates. This may be due to the fact that in many developing countries self-employment activities are very important even in the urban sector. Within Latin America nearly uniform rates—between 34% and 39%—are found while in the other regions there are broader ranges of participation. Comparing participation rates across level of development (Figure 1) shows there are no clear trends in rural labour market participation rates even though participations rates appear to climb slightly in urban areas as development occurs—possibly reflecting the rise of the middle class noted by Banerjee & Duflo (2008). The lack of clear pattern across the globe provides a strong indication that rural labour market participation reflects local conditions.

[Figure 1]

Because of its association with long-term, stable and presumably high productivity work, we are interested in distinguishing permanent work from casual and seasonal employment. Defining this in practical terms given the available data requires distinguishing the duration and frequency of work. *Duration* is the length of time that a job has continuously been worked at, by a specific person, in a given time span and *frequency* refers to how often a job is worked at, by an individual, in a given time span. To operationalise this distinction in a manageable framework, employment is categorized using combinations of duration and frequency into one of the

following four classifications: i) Full Year-Full Time (FYFT), ii) Full Year-Part Time (FYPT), iii) Part Year-Full Time (PYFT), and iv) Part Year-Part Time (PYPT).[4]

In general, rural labourers are not permanent workers since they do not work full time for a full year and instead work in different combinations of full/part year and full/part time (Table 1), Seasonality and casual work are clearly important features of rural labour markets. In countries with full data[5] only in Bangladesh does full year, full time represent over 50% of the employed. Over half of the countries, including all four Latin American countries, are more or less evenly split between full year and part year employment. Compared to urban workers, rural workers are less likely to be permanent (FYFT). Of those that participate in labour markets, rural workers are, on average, about two-thirds as likely to be in permanent work compared to their urban counterparts. Although this is the case, the amount of permanent work increases with the level of development (Figure 2) suggesting it approaches urban levels as development occurs. Thus, while participation rates in rural labour markets do not appear to increase dramatically with the level of development the composition of rural labour appears to shift towards more permanent work, becoming more like the urban sector.

[Figure 2]

4. Agricultural versus non-agricultural employment OR low versus high productivity employment?

The general view of agricultural wage employment noted in the introduction is put succinctly by Lanjouw in the following:

[4] The precise definitions of these variables can be found in Quiñones et al (2008).

[5] Due to insufficient information on time use in the surveys, it is not possible to distinguish Full Year and Part Year for Ghana, Nigeria and Bulgaria. Instead these are divided only by Full Time and Part Time.

> "A fairly robust stylized fact about rural poverty in many parts of the developing world is that the poor are highly represented among agricultural wage labourers. Unskilled labour is often the only asset the poor can depend on to raise their living standards. Agricultural wage labour, particularly casual, daily-wage employment, is seen in many places as an occupation of last resort. Remuneration is typically low, the work is physically demanding, employment is prone to significant seasonal variation and it can be associated with a lack of social status." (Lanjouw, 2007, p 57)

This view is largely confirmed by the rural employment data from the countries under study with some caveats noted below. Among the rural population that participate in each set of activities, the poorest quintile in every country participates in greater numbers in agricultural wage employment than in non-agricultural wage employment (Figure 3, first panel). This is most pronounced in Asia and Latin America where 30-50% of all agricultural wage participants are in the poorest quintile. In all countries except Ghana and Bulgaria, the share of agricultural wage participants declines at higher expenditure levels. This is in contrast to non-agricultural activities which tend to be more evenly distributed across expenditure quintiles only declining in Nepal and Ecuador and even rising in a number of cases. Furthermore, the richest quintile participates in greater numbers in non-agricultural wage employment.

Along with agricultural wage being more dominated by the poor, the analysis also points to the relatively unskilled nature of agricultural wage employment. In general, agricultural labourers have lower education than non-agricultural workers (Figure 3, second panel). In fact, in all cases but Tajikistan the proportion of high school graduates participating in non-agricultural activities is over double the same proportion for agricultural labour.

By virtue of the seasonality of production, agriculture tends to lead to more casual work opportunities than non-agricultural activities. For all countries except Ecuador, non-agricultural activities are more likely to be full year and full time (Figure 3, panel 3). These trends are more pronounced in Asia and least pronounced in Latin America where trends across time use for agricultural and non-agricultural activities are most similar. Even among non-agricultural activities, there appears to be greater seasonality and casual labour opportunities when compared to urban counterparts. A clear feature of rural labour markets is the lack of permanence in employment.

[Figure 3]

The relatively poor and unskilled nature of agricultural wage is apparent even when non-agricultural activities are divided by industry (manufacturing, construction, commerce and related activities, services, mining and utilities, and other activities). In general, agricultural wage participation rates among the richest quintile are lower compared to all non-agricultural industries (Figure 4, panel 1). Within the non-agricultural sector, there is some variance, with a higher share of richer households (Quintile 5) participating in the service sector and lower share participating in construction. All sectors boast higher education levels than agriculture (Figure 4, panel 2) and education seems to be one reason for the positive link between higher expenditures and the service sector. The average years of education for participants in the service industry are higher than the total average education for participants in agriculture in all cases. This is in contrast to construction where in most cases the average education of participants is near or below the total average education although it remains higher than the education levels found for agricultural participants in all cases but one. It suggests that while construction is not a high education activity, it appears to be an activity for those with at least a minimal level of education.

[Figure 4]

The reason behind the positive link between higher expenditures and skill level, and non-agricultural wage employment is likely to be the fact that agricultural wages tend to be lower than non-agricultural wages. In fact, in all of the African and Latin American countries, the agricultural wage distribution is lower than the non-agricultural wage distribution for rural workers (Figure 5).[6] In Asia, it also is unambiguously lower in all countries except Vietnam where clear differences are harder to observe. The only country where the agricultural wage distribution is higher is in Albania. This pattern of higher wages for non-agricultural employment holds even when examining permanent versus casual/seasonal work. Looking across levels of development (Figure 6), the ratio of agricultural to non-agricultural wage appears to decline over time. Overall the picture that emerges is that, as development occurs, rural labour become more permanent and the gap between agricultural and non-agricultural wages narrow.

[Figure 5]

[Figure 6]

Although agricultural wages tend to be lower than non-agricultural wages and the poor and unskilled tend to disproportionately participate in agricultural wage activities, there are better off households that are employed in agricultural wage and there are a substantial number of relatively poor households involved in non-agricultural wage activities along with the wealthier households. The wage distributions shown in Figure 5 clearly show a significant overlap in the daily earnings in each sector. As such, this sectoral distinction is not exceptionally useful for

[6] Distributions are presented as the log of daily wages. Daily wages are used rather than hourly wages since these are the most consistent across the national surveys for the included countries and do not require assumptions about the hours per day worked.

understanding the role of rural labour markets in improving the well being of the rural population and correspondingly what policies to implement. Since our underlying interest is in knowing which activities tend to be more productive and thus a potential pathway out of poverty, it would be valuable to come up with such a categorization. To get a sense of the share of activities that are high and low productivity, Lanjouw (1999) uses the average agricultural wage as a reference point defining those higher than this as high productivity and those below this as low productivity. Here we follow a similar approach but use both agricultural and non-agricultural wages and take into account that non-agricultural wages tend to be higher than agricultural wages. Three productivity categories are defined: i) *low productivity*: activities earning less than the median agricultural wage; ii) *medium productivity*: activities earning between the median agricultural wage and the median non-agricultural wage; and iii) *high productivity*: activities earning more than the median non-agricultural wage. This distinction works well except in the cases of Albania, Bulgaria and Vietnam where non-agricultural wage is not clearly higher than agricultural wage. In these cases, we divide the sample between high and low productivity based on the median agricultural wage.

Using this productivity categorization, it is clear that a significant number of agricultural workers are considered high productivity and similarly a significant amount of non-agricultural work is low productivity (Table 2). In Africa, 25-30% of agricultural work is high productivity and thus has equivalent returns to higher-value non-agricultural work. Similarly, about a quarter to a third of non-agricultural work is low-productivity work and similar to low-value agricultural work. Comparable numbers emerge for Latin America except that high value agricultural work is slightly less prevalent (just below 20 percent). In Asia, the numbers are lower for Nepal and Bangladesh where only around 10% of agricultural earnings are in the high productivity category

and smaller numbers of non-agricultural workers are in the low productivity category. Tajikistan follows a similar pattern. Thus, in these cases the two sectors are more distinct. Interestingly, the analysis of time categories (not shown) suggest that there are no clear distinctions in productivity for permanent, casual and seasonal work. Even when examined by non-agricultural industry (not shown), a range of levels of productivity are found across industry, with only services and mining and utilities consistently high productivity. These results suggest that there appears to be other factors are driving the differences in wages. The question we then want to address is what key factors tend to allow workers to participate in more productive activities.

[Table 2]

5. Key factors influencing access to high productivity employment

To explore the factors that are driving differences in labour market participation and wages we turn to regression analysis. First, we analyze participation in wage employment and then, among those that participate, what drives them into low versus higher levels of productivity. This is done by examining probit regressions (one is participation and zero otherwise) on overall labour market participation followed by probit regressions on participation in the particular productivity category (one is participation in the activity and zero otherwise). This second set of probit regressions is run only for those individuals that participate in wage employment activities, and allows us to distinguish the key factors that pull an individual labourer into a high productivity activity versus those characteristics that push individuals into a low productivity activity. Results for this analysis are available in Appendix 1 and results are summarized in Figure 7. Along with examining participation, the factors influencing daily wages earned are also analyzed using standard wage equations where the dependent variable is the log wage. Key results are presented in Table 3 and full results are in the Appendix. Overall, the results suggest that three factors

matter most in labour markets: i) the gender of the individual, ii) their education level, and iii) their location and thus access to infrastructure. Somewhat surprisingly, land access, appears to have a minimal influence in labour markets.

Gender has a substantial impact on labour market activity. Controlling for other factors, women are generally less likely to participate in labour markets than men. This is possibly because of social constraints and requirements to stay at home to manage the household activities. The magnitude of this effect varies across regions with the largest effects found in Latin America where on average rural women are 35-50% less likely than men to participate in labour markets. In fact, in general there appears to be a link between labour market participation and development with women being even less likely to participate in rural labour markets in more developed countries (Figure 7, panel 1). The analysis also clearly indicates that employed women have a higher probability of working in low productivity jobs than high productivity jobs. Examination of daily wage earnings confirms that males earn substantially more than females in general in the wage market (14 of 15 countries the results are significantly different) with females earnings between 5 and 50 percent lower than males when controlling for basic individual characteristics (Table 3).

[Figure 7]

The key to participating in high value wage employment activities appears to be education. Generally, there is a positive relationship between education and participation in rural labour markets suggesting that education is linked to labour markets and that labour markets are used as a pathway out of poverty for the educated (Figure 7, panel 2). Again, the magnitude of the results varies across country but tend to be increasing with the level of development. Examination of interaction terms in participation equations (not shown) indicate that the impact on participation

of education is larger for women with each additional year leading to even greater participation for women than men. Along with influencing overall participation, education is closely linked to high productivity employment. In 13 of the 15 countries, education is negatively associated with participation in low productivity employment and positively associated with participation in high productivity employment with each additional year of education increasing the probability of high productivity employment by 1 to 4 percent. The results indicate the effects are stronger for higher levels of development suggesting education becomes even more important for participation in high productivity activities in relatively wealthier countries. Not surprisingly then, education is associated with higher wages in all countries except for Vietnam and Albania (Table 3).

[Table 3]

Infrastructure access and proximity to urban areas[7] appears to play a mixed role in participation in labour market, but an important role in the type of activity and the wages earned on those activities. The results for participation are not consistent across country although appear to slightly increase with the level of development (Figure 7, panel 3). However, infrastructure/proximity tends to be negatively associated with low productivity work and positively associate with high productivity work in 12 of the 15 countries. This relationship gets slightly stronger with the level of development. Infrastructure and proximity also appears to be

[7] Access to infrastructure (such as electricity) and distance to urban centers is likely to influence labor market participation yet creating comparable measures of infrastructure access and proximity is challenging because of difference in variables available across countries. Following Filmer & Pritchett (2001), a principal components approach is used to create an infrastructure/proximity access index that includes both public goods (electricity, telephone, etc.) and distance to infrastructure (schools, health centers, towns, etc.). The higher the index the more remote households are from urban areas.

associated with higher wages with those closer to urban settings earning higher income except in Eastern Europe (Table 3). Those that are close to urban centres and thus with greater access to infrastructure are in a better position to get high productivity work and to earn more money from that work. Location of a household in a rural setting and access to public infrastructure influence the ability to take advantage of rural labour markets.

Land has historically been viewed as a key asset for rural households because of the link between land and agriculture. The relationship between household land ownership and wage employment is of interest since it may represent an agricultural path as opposed to one based on labour employment. The analysis indicates there is generally a negative relationship between land and participation in labour markets suggesting that the lack of land pushes working age individuals into the labour market (Figure 7, panel 4). Yet the magnitude of this effect is generally not great and in terms of productivity, there appears to be little influence of land ownership on the type of activity of the labourer (few results are significant and thus not shown in the figure). Other factors seem to be more important in determining whether individuals work and the type of work they obtain.

A similar analysis of the factors influencing participation and wages in individual industries provides additional insight into the role of these key factors. Women are much less likely to be involved in construction and mining/utilities, but more likely to be in the service sector (Table 4). Their wages (Table 5) in the service sector are either not significantly different from males or are less, particularly in Latin America. This pattern generally holds for wages across sector where they tend to be insignificantly different from men or significantly less, with significant differences found mostly in Latin America. For agriculture, the influence of gender on

participation varies except in Latin America where it is clearly negative and with a high magnitude. In nearly all countries, women also earn less than men in agricultural activities.

[Table 4]

Wage employees with high levels of education are less likely to be involved in agriculture in every country (Table 4). On the other hand, the service industry seems to be the most influenced by education with an increase in education leading to a greater probability of participation in all countries. In Asia and Latin America, a similar pattern is found for commerce. Participation in construction, alternatively, is found to be negatively related to education in most countries including all of Asia and most of Latin America. Given participation, education has a positive effect or no significant effect on wages (Table 5) regardless of the industry. This is particularly true of agriculture and services. While agriculture is not chosen as the sector to participate in by the educated, the educated workers that find the right opportunities do receive higher wages.

[Table 5]

Finally, infrastructure or proximity to urban settings tends to be negatively associated with participation in agriculture while generally positively associated with commerce and services. Although greater proximity was found to have an overall positive influence on wages except in Eastern Europe, it is often insignificant for the individual industries. There are a number of cases in which it is significantly positive but no broader pattern across the industries emerges.

The rural labour economy is clearly complex and the characterization of the agricultural labour employment as a refuge sector of the poor and unskilled while appropriate in some circumstances fails to recognize that agricultural wage labour can offer a pathway out of poverty and that much of the non-agricultural sector can be characterized in a similar manner. The differences across the non-agricultural industries indicate that even within in the sectoral

categorization there remain substantial differences across the industries. The analysis presented indicates that in evaluating rural labour markets, it is more appropriate to consider the level of productivity and, correspondingly wage earners of these activities and the factors that influences this productivity.

6. Rural wage employment in household livelihood strategies

As noted in the introduction, a key characteristic of the rural economy is the central role played by agriculture. Participation rates in agriculture of rural households in developing countries remain high, even if household members work off-farm (Davis et al, 2007). Individuals decision making on labour market participation is likely to be at least partially based on the households overall livelihoods strategy. As such understanding rural labour markets requires considering labour participation in the context of household livelihood strategies.

In an overall household strategy to improve well being, wage employment may be used as a specific pathway out of poverty and thus the focus of the livelihood strategy or as a mechanism to diversify income to obtain liquidity or hedge against risk. Understanding the motivation for a household strategy is complicated by the fact that multiple household members are involved in economic activities and what may appear to be diversification at the household level may actually be individual specialization in the highest return activity available to that particular individual. While high productivity wage employment opportunities are likely to reflect specialization, low return activities are less likely to be so except in those cases where households have such limited assets they have no option but to be employed primarily in low return activities.

To understand how individual wage employment fits with a households overall livelihood strategy, we need to turn to household-level data and categorize household strategies.

Households can be defined as having income from three main sources: i) wage employment, ii) agricultural production, and iii) nonfarm self employment including transfers and other income sources. Households can then be defined as diversified if less than 75% of their income is from a single source and specialized if 75% or more of their income comes from a single source. Using this definition, between a quarter and a half of rural households can be viewed as diversified while the rest specialize in certain activities (Figure 8, panel 1). Except in Africa, diversified households are the norm. In Africa, specialisers tend to be in farming with over half of households in all three countries specializing in agricultural production.

Among households that are diversified a clear component of that diversification is through labour employment (Figure 8, panel 2). Wage labour participation rates are over 50% in most countries for diversified households with rates over 70% in a number of countries including all Latin American countries. Furthermore, it is common for multiple household members to work off farm with nearly all countries having over a quarter of households in which diversified households have more than one member in wage employment. Outside Africa, among household that specialize in wage employment this number is even greater with over one-third of households having more than one member in wage employment. In Africa, those that specialize in wage employment tend to rely on one wage earner. Even among households specializing in farm and nonfarm self employment activities, there is a certain share of households—often above 20%— participating in wage employment and in a number of cases more than one member. Even households that appear to specialize are using labour markets to a degree.

[Figure 8]

Individuals in households that specialize in wage employment income tend to be in high productivity activities especially in Africa (Figure 8, panel 3). Within these wage specializing

households there are, however, a large share of individuals in medium and low productivity employment. Specializing in wage employment does not guarantee that it will be lucrative. Diversified households also have a mix of wage earners in the various levels of productivity although there are slight more high than low productivity. Those households in the two other categories of wage specialization tend to be less likely to be in high productivity activities if they participate in labour markets.

Overall, the analysis shows that labour markets play a critical role in the livelihood strategies of rural households. Among those that specialize in wage labour, there is a clear tendency for those households to have a member in a high-productivity activity suggesting these households are using the labour market as a pathway out of poverty. At the same time, a significant number of wage specializing households that remain in low-productivity employment indicating there continues to be a segment of households using wage employment as a survival strategy. Among diversified households a mix of high- and low-productivity wage employment activities are employed reflecting the multiple uses of wage employment in households' livelihood strategies.

7. Discussion and policy implications

Wage employment is clearly an important component of the strategies employed by rural households and individuals to maintain and improve their well-being. Participation rates in rural labour markets, however, vary substantially across developing countries and are complicated by the fact that rural labourers often work in casual or seasonal employment rather than in permanent employment. While the poor and unskilled are disproportionately involved in casual and seasonal agricultural activities, a significant number of better-off individuals are employed in agriculture and significant number of non-agricultural labourers are poor. This suggests that agricultural wage employment is not solely an activity of the poor and non-agricultural wage

employment the activity of the rich. Even when broken down by non-agricultural industry, while services in particular appear to be generally more lucrative and others like construction less productive, what is striking is the range of returns obtained across the subsectors. The analysis suggests that the distinction in labour markets between the agricultural and non-agricultural sectors is to a degree a false dichotomy. Both can play similar roles for the household in terms of a pathway out of poverty, as a refuge sector for those with few options or as a mechanism to provide liquidity and hedge against risk.

Whether a household is diversified or specialized the role of agricultural and non-agricultural activities appears similar. Households that are specialized in wage employment appear to be largely taking this path because they have access to high-productivity work. The sector of employment and the overall household strategy appear to be less important in determining whether a household uses wage employment as a pathway out of poverty. Rather, it appears to be more linked to the underlying assets of the household and its individual members. In particular, education appears to be the critical asset that determines both participation in and wages earned in rural labour market activities. Educational investment in rural areas appears key to providing options to households regardless of industry. Infrastructure/proximity also plays a key role in many cases and proximity to urban centres creates greater opportunities for labour markets to play an important role in poverty alleviation. Unfortunately, the gender of the individual seems to greatly influence the ability to participate and earn wages with females less likely to participate and to generally earn less than their male counterparts. This clearly needs to be further explored.

In terms of policy for developing countries, this analysis points to educational and infrastructure investment as critical for using the labour market to provide opportunities for exiting poverty. It

also requires special attention be directed to the gender consequences of any employment policy and potentially gender-targeted interventions. Of course, this analysis is limited in that it focuses on the labour supply of rural household and the key factors influencing this supply. With such data, it is difficult to assess the demand for rural labour, what influences that demand and how opportunities can be created for rural households through expanded high-productivity employment. Our results do indicate that such returns can be found in any sector, including agriculture, suggesting that what is important is not the sector but the dynamism in that sector. As development occurs the expectation is that agricultural employment will diminish, but agricultural is still likely to be a key driver of growth even in the non-agricultural economy through linkage effects. What is harder to know is what other drivers of the rural economy are. The industrial classifications normally provided in household surveys and used here say little about what is the ultimate source of rural economic growth. Is it ultimately agriculture or are other industries such as tourism, mining, etc driving this growth? While some answers to these questions exist (see Haggblade, Hazell & Reardon, 2007), future research should explicitly consider the link between different sets of rural activities and agricultural and non-agricultural employment.

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Table 1 Participation in Wage Employment

	Name of Survey	Rural Working Age Individuals	Rural Employed Individuals	Rural Participation Rate	Urban Participation Rate	Time use of rural labor market participants				Time use of urban labor market participants			
						FYFT	PYFT	FYPT	PYPT	FYFT	PYFT	FYPT	PYPT
Sub-Saharan Africa													
Ghana98	Ghana Living Standards Survey Round 3	8,600	737	8.3%	14.2%	57.0%		43.0%		77.7%		22.3%	
Malawi04	Integrated Household Survey - 2	22,016	9,000	38.9%	25.0%	8.7%	13.3%	1.2%	76.8%	72.0%	21.9%	3.5%	2.6%
Nigeria04	Living Standards Survey	35,521	1,675	4.4%	9.8%	69.8%		30.2%		81.7%		18.3%	
South & East Asia													
Bangladesh00	Household Income-Expenditure Survey	14,282	6,361	42.7%	54.4%	71.8%	14.5%	8.0%	5.7%	86.3%	5.4%	6.8%	1.5%
Indonesia00	Family Life Survey - Wave 3	13,193	3,409	26.9%	32.1%	34.3%	33.7%	12.7%	19.4%	58.8%	21.5%	11.7%	8.1%
Nepal03	Living Standards Survey II	7,767	4,829	64.5%	56.9%	16.0%	29.8%	7.9%	46.3%	61.1%	15.0%	11.9%	12.1%
Vietnam98	Living Standards Survey	11,772	3,356	27.8%	37.2%	12.5%	54.2%	7.4%	25.9%	49.0%	28.9%	8.2%	13.9%
Eastern Europe & Central Asia													
Albania05	Living Standards Measurement Survey	4,998	671	13.4%	30.5%	49.0%	41.3%	2.8%	6.9%	67.3%	23.0%	3.0%	6.7%
Bulgaria01	Integrated Household Survey	1,340	630	47.0%	61.2%	76.7%		23.3%		89.2%		10.9%	
Tajikistan03	Living Standards Survey	9,795	3,211	32.7%	20.4%	9.3%	9.2%	39.4%	42.2%	10.5%	7.1%	57.4%	25.0%
Latin America													
Ecuador95	Estudio de Condiciones de Vida	6,275	2,342	37.8%	41.6%	33.7%	31.2%	15.8%	19.4%	40.6%	35.0%	10.4%	14.0%
Guatemala00	Encuesta de Condiciones de Vida	10,151	3,935	38.6%	45.4%	38.5%	45.3%	10.6%	5.6%	49.1%	33.7%	10.9%	6.3%
Nicaragua01	Encuesta de Medición de Niveles de Vida	5,408	1,767	34.3%	40.4%	35.9%	43.7%	7.3%	13.2%	50.0%	34.7%	6.8%	8.5%
Panama03	Encuesta de Niveles de Vida	7,001	2,640	36.2%	47.7%	39.8%	39.9%	10.6%	9.7%	57.8%	31.0%	5.6%	5.6%

Notes: This only includes individuals who are of working age (15 and 60 years old). Participation rates are weighted to be nationally representative. For the time categories, it is not possible to classify Ghana98, Nigeria04, & Bulgaria01 according to the four time categories due to insufficient information on time use.

Figure 1 Labour market participation: Rural versus urban

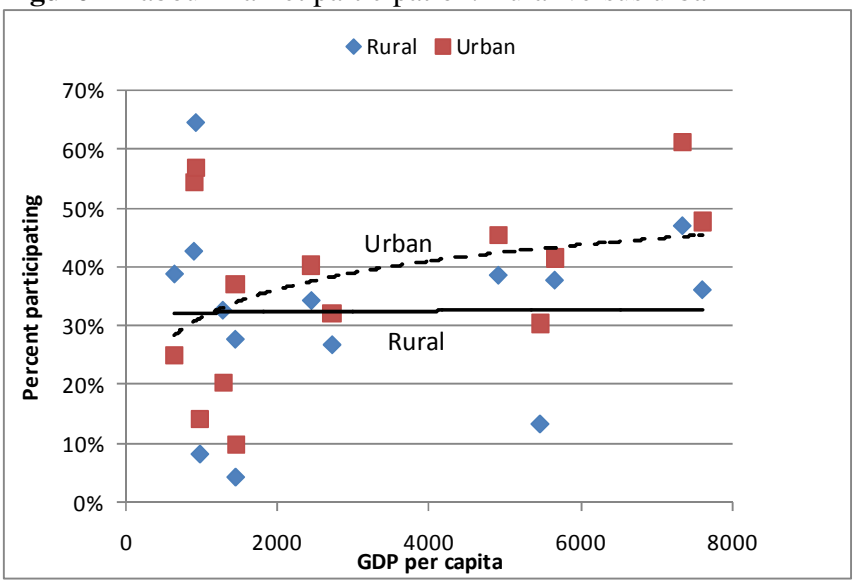


Figure 2 Participation in permanent work: Rural versus urban

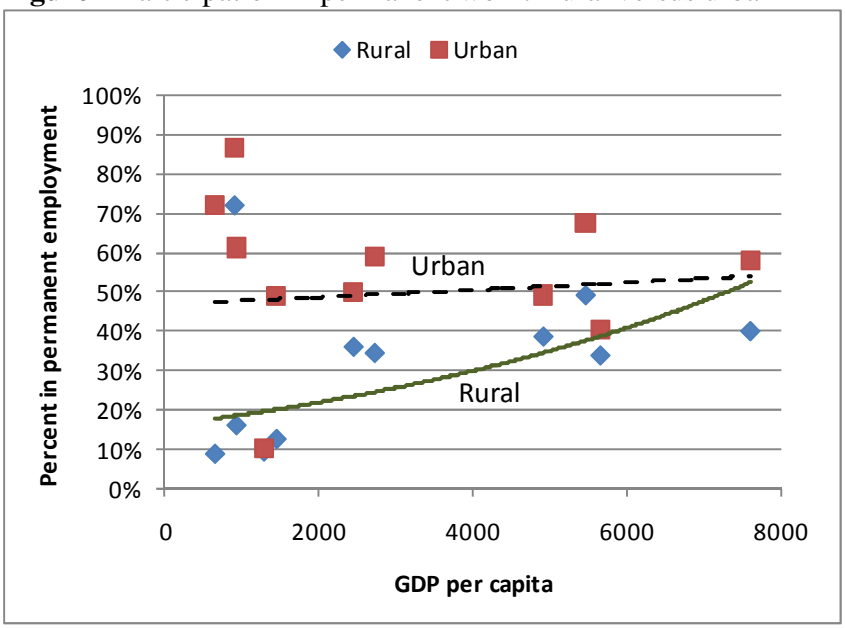


Figure 3 Agricultural and non-agricultural activities

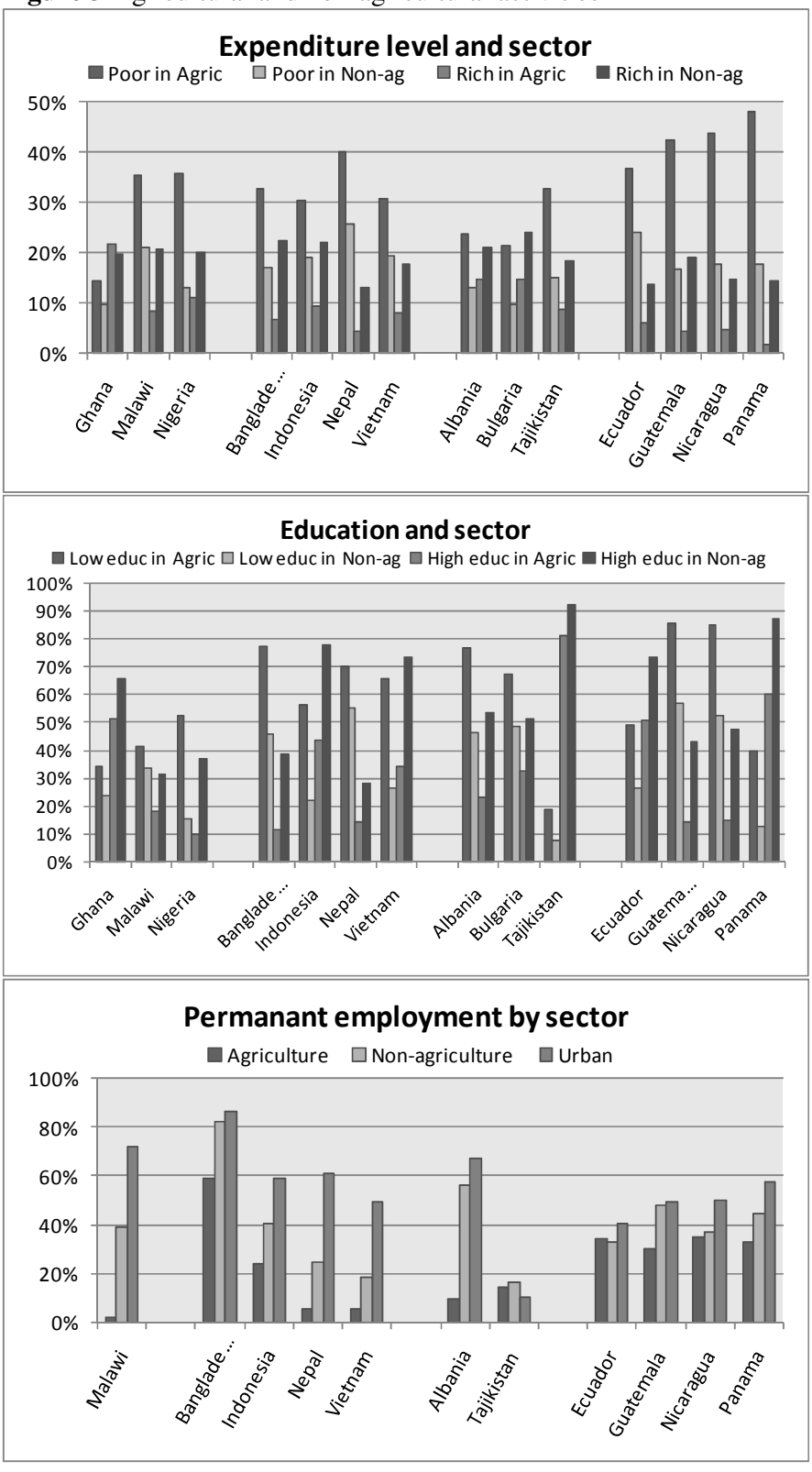
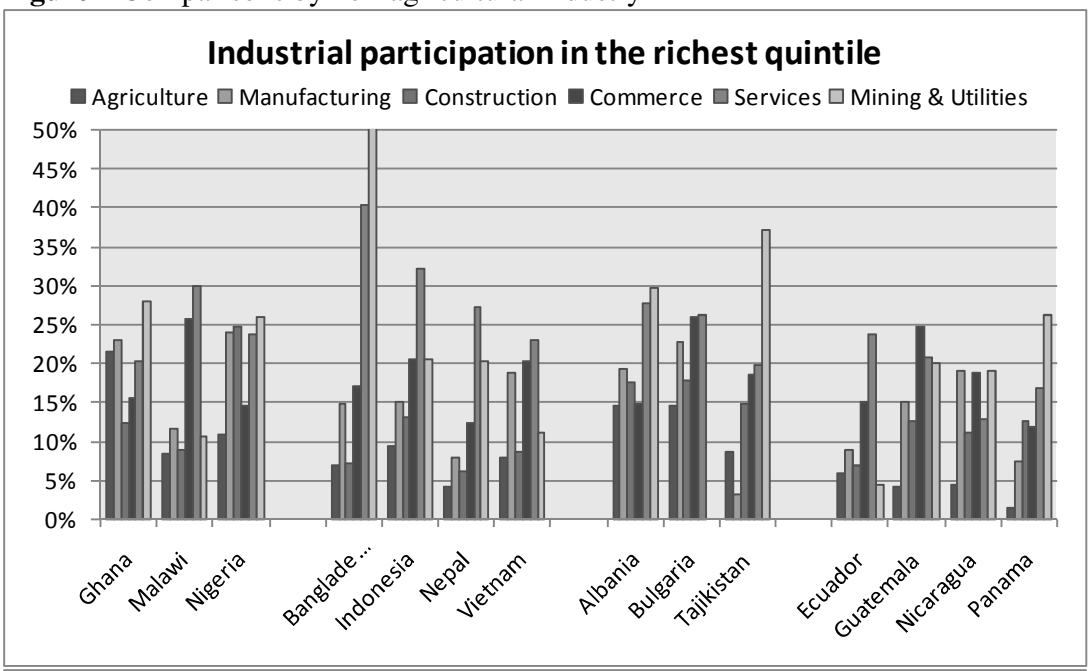


Figure 4 Comparisons by non-agricultural industry



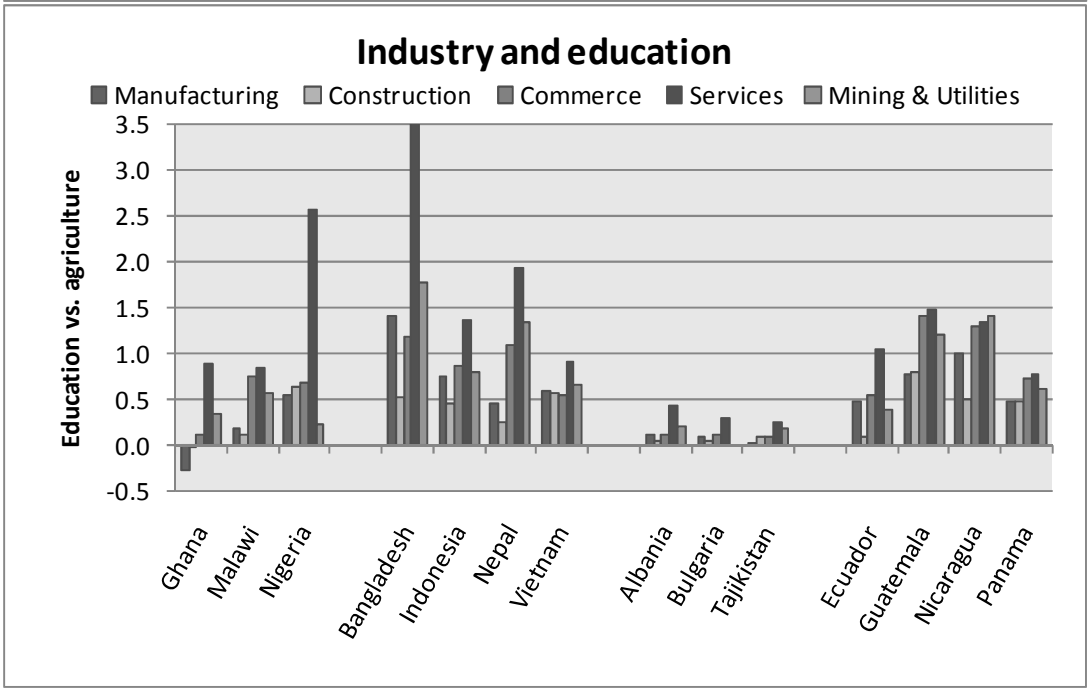


Figure 5 Agricultural versus non-agricultural wage distributions

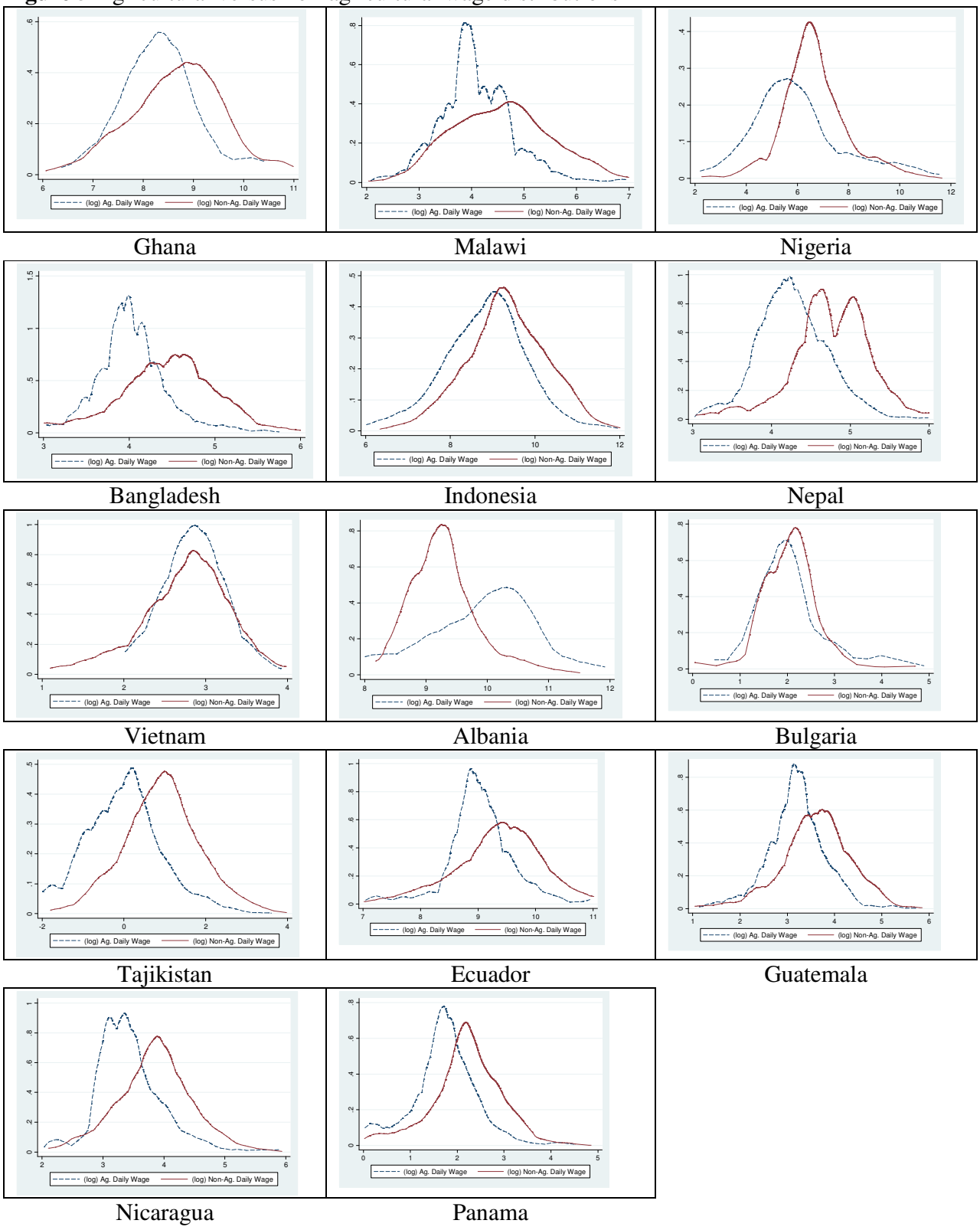


Figure 6 Non-agricultural versus agricultural wage ratios by level of development

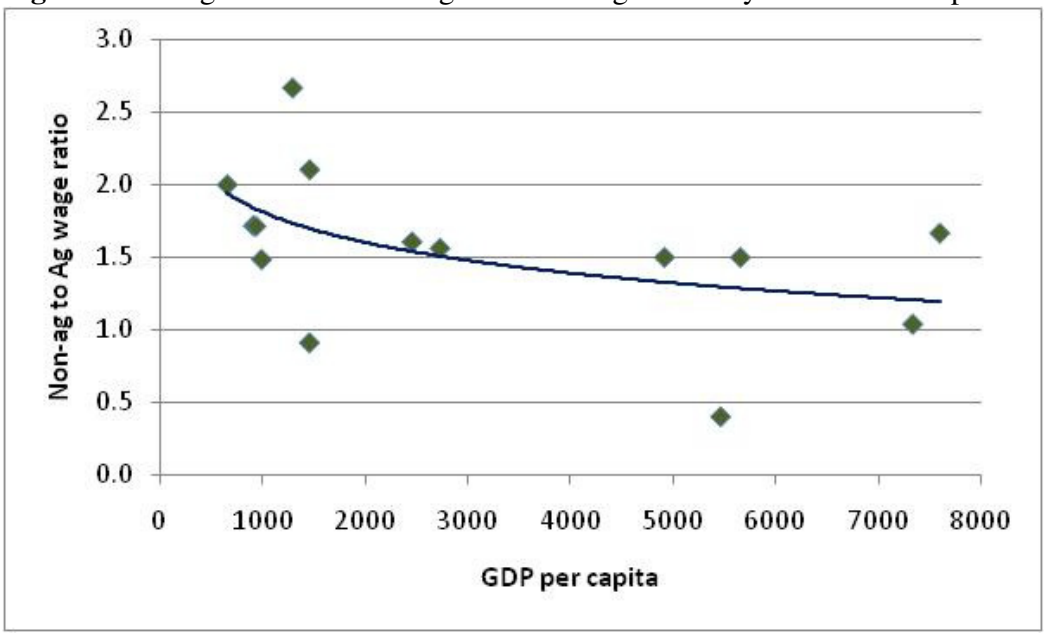


Table 2 Participation by levels of productivity (for participants only)

	All participants			Agriculture			Non-agriculture			Urban		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Sub-Saharan Africa												
Ghana98	36.2%	16.6%	47.2%	48.3%	26.7%	25.1%	33.9%	14.7%	51.4%	25.2%	16.0%	58.9%
Malawi04	47.3%	22.9%	29.8%	51.7%	23.3%	25.1%	27.8%	21.3%	50.9%	7.8%	14.5%	77.7%
Nigeria04	31.1%	23.3%	45.7%	51.5%	18.0%	30.5%	22.9%	25.4%	51.8%	21.8%	24.3%	54.0%
South & East Asia												
Bangladesh00	34.6%	31.9%	33.5%	51.3%	36.7%	12.1%	20.4%	27.9%	51.7%	21.6%	20.6%	57.8%
Indonesia00	38.6%	19.7%	41.7%	51.6%	19.2%	29.2%	30.5%	20.1%	49.4%	23.6%	16.4%	60.0%
Nepal03	32.0%	37.8%	30.3%	54.6%	35.4%	10.0%	13.6%	39.7%	46.7%	20.2%	22.8%	57.0%
Vietnam98	55.5%	-	44.5%	53.0%	-	47.0%	57.6%	-	42.4%	36.4%	-	63.6%
Eastern Europe & Central Asia												
Albania05	81.4%	-	18.6%	43.0%	-	57.0%	88.1%	-	11.9%	86.4%	-	13.6%
Bulgaria01	49.0%	-	51.0%	52.7%	-	47.3%	47.9%	-	52.1%	39.7%	-	60.3%
Tajikistan03	44.0%	32.1%	24.0%	53.5%	31.6%	14.9%	15.0%	33.4%	51.5%	9.6%	21.5%	68.9%
Latin America & the Caribbean												
Ecuador95	41.9%	26.2%	32.0%	54.5%	27.0%	18.5%	28.8%	25.3%	45.8%	23.0%	19.6%	57.4%
Guatemala00	44.8%	23.7%	31.5%	56.7%	24.7%	18.6%	29.8%	22.3%	47.9%	18.6%	17.5%	63.9%
Nicaragua01	39.9%	27.0%	33.0%	56.5%	25.7%	17.8%	23.7%	28.4%	47.9%	14.7%	24.7%	60.6%
Panama03	36.8%	29.7%	33.5%	54.7%	28.0%	17.3%	24.2%	31.0%	44.8%	12.8%	22.2%	64.9%

Figure 7 Key factors in labour market participation

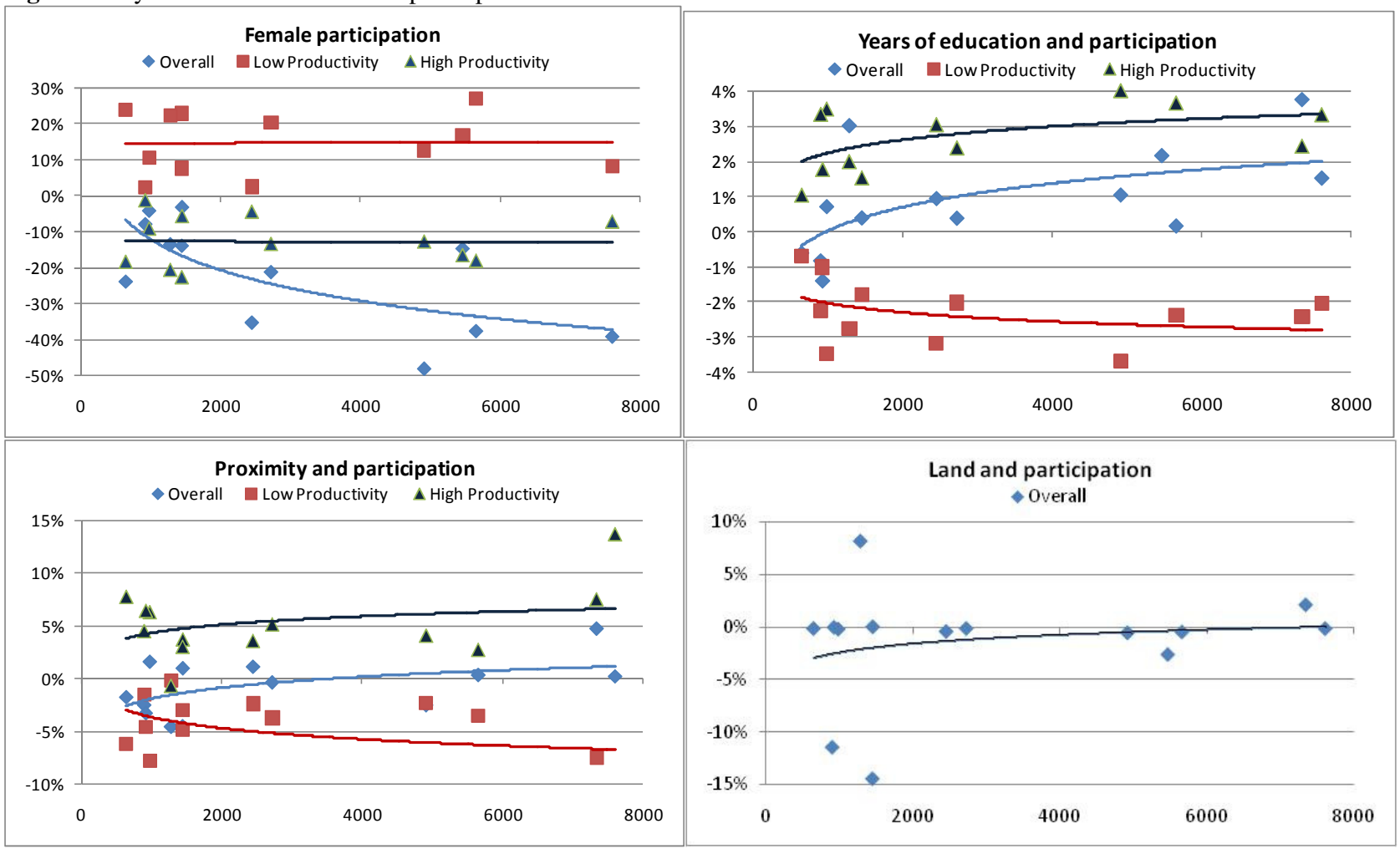


Table 3 Regressions on Total Wages in Rural Labor Markets

	Sub-Saharan Africa			South & East Asia				Eastern Europe & Central Asia			Latin America			
	Ghana	Malawi	Nigeria	Banglades	Indonesia	Nepal	Vietnam	Albania	Bulgaria	Tajikistan	Ecuador	Guatemala	Nicaragua	Panama
Gender (female=1)	-0.1469**	-0.2971***	-0.1776**	-0.0253*	-0.3215***	-0.0320*	-0.1851***	-0.4296***	-0.0452	-0.5027***	-0.3648***	-0.2969***	-0.1244***	-0.1050***
	0.0333	0.0000	0.0399	0.0804	0.0000	0.0654	0.0000	0.0000	0.4562	0.0000	0.0000	0.0000	0.0005	0.0028
Education (years)	0.0626***	0.0201***	0.0378***	0.0415***	0.0584***	0.0218***	-0.0060**	0.0135	0.0386***	0.0507***	0.0457***	0.0635***	0.0397***	0.0484***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0254	0.2122	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
Infrastucture/proximity index	0.1337***	0.1760***	0.0477	0.0276*	0.1015***	0.0936***	0.0431***	-0.0041	0.0333	-0.0041	0.0553***	0.0452***	0.0280*	0.2108***
	0.0000	0.0000	0.1548	0.0504	0.0000	0.0000	0.0000	0.8991	0.3156	0.8072	0.0066	0.0003	0.0612	0.0000
Number of observations	725	8936	1668	6350	3402	4778	3343	670	630	3204	2321	3930	1764	2638

Notes: p-values are reported below coefficients. *** indicates signficance at the 99% level, ** at the 95% level, and * at the 90% level.

Table 4 Probits on Participation in Rural Labor Markets: By Industry

	Sub-Saharan Africa			South & East Asia				Eastern Europe & Central Asia			Latin America			
	Ghana	Malawi	Nigeria	Banglades	Indonesia	Nepal	Vietnam	Albania	Bulgaria	Tajikistan	Ecuador	Guatemala	Nicaragua	Panama
Gender														
Agriculture	-0.1527***	0.0848***	0.0698**	-0.0299**	0.0512***	-0.0773***	0.0612***	-0.0771**	-0.0082	0.0927***	-0.2413***	-0.3227***	-0.4466***	-0.4635***
	0.0000	0.0000	0.0304	0.0267	0.0076	0.0000	0.0022	0.0335	0.7924	0.0000	0.0000	0.0000	0.0000	0.0000
Manufacturing	0.0447	-0.0438***	-0.0103	0.0152	0.0783***	0.0006	0.0392***	0.0591**	0.0064	0.0047**	0.0085	0.0926***	-0.0029	-0.0408***
	0.1594	0.0000	0.1423	0.1080	0.0000	0.9583	0.0005	0.0185	0.8624	0.0269	0.5600	0.0000	0.8357	0.0000
Construction	-0.0104	-0.0049	-0.0223***	-0.0157***	-0.1365***	-0.0642***	-0.1276***	-0.2928***	-0.0070	-0.0392***	-0.1424***	-0.1074***	-0.0664***	-
	0.3135	0.2431	0.0000	0.0025	0.0000	0.0000	0.0000	0.0000	0.5229	0.0000	0.0000	0.0000	0.0000	-
Commerce	0.0599*	-0.0190***	-0.0475*	-0.0102	-0.0333***	0.0016	-0.0132*	-0.0339	-0.0389	-0.0425***	0.0146	-0.0172	-0.0240*	0.0231
	0.0947	0.0000	0.0867	0.2761	0.0036	0.8237	0.0672	0.3046	0.2862	0.0000	0.3373	0.1718	0.0533	0.2108
Services	0.1270**	-0.0244***	0.0581*	0.0496***	0.0409**	0.0547***	0.0673***	0.4348***	0.0480*	0.0092	0.1236***	0.2713***	0.4898***	0.4717***
	0.0185	0.0000	0.0805	0.0000	0.0130	0.0000	0.0000	0.0000	0.0587	0.5186	0.0000	0.0000	0.0000	0.0000
Mining/Utilities	-0.0365***	-0.0045***	-	-0.0011	-0.0106***	0.0004	-0.0066**	-0.0436**	0.0040	-	-0.0257***	-0.0027**	-0.0135***	-0.0084**
	0.0034	0.0005	-	0.3985	0.0020	0.9013	0.0280	0.0376	0.8952	-	0.0014	0.0361	0.0058	0.0411
Education														
Agriculture	-0.0137***	-0.0112***	-0.0323***	-0.0405***	-0.0298***	-0.0773***	-0.0371***	-0.0193***	-0.0133**	-0.0573***	-0.0477***	-0.0557***	-0.0562***	-0.0487***
	0.0000	0.0000	0.0000	0.0000	0.1165	0.0000	0.0000	0.0006	0.0311	0.0000	0.0000	0.0000	0.0000	0.0000
Manufacturing	-0.0122***	0.0003	-0.0011**	0.0042***	0.0002	-0.0004	0.0014	-0.0060**	-0.0092	-0.0004	0.0052***	-0.0008	0.0036**	-0.0005
	0.0000	0.4653	0.0416	0.0013	0.1058	0.9583	0.4218	0.0220	0.1628	0.1962	0.0018	0.5814	0.0323	0.6304
Construction	-0.0027**	0.0007	-0.0005	-0.0012*	-0.0038***	-0.0168***	-0.0084***	-0.0419***	0.0022	-0.0015**	-0.0056***	-0.0005	-0.0032**	-0.0029**
	0.0110	0.2767	0.2718	0.0894	0.1203	0.0000	0.0000	0.0000	0.2333	0.0353	0.0001	0.6613	0.0354	0.0129
Commerce	-0.0077**	0.0016***	-0.0132***	0.0034**	0.0017*	0.0022**	0.0020*	-0.0034	-0.0014	-0.0012	0.0071***	0.0106***	0.0057***	0.0069***
	0.0101	0.0000	0.0000	0.0105	0.3514	0.8237	0.0597	0.4649	0.8331	0.1881	0.0001	0.0000	0.0000	0.0003
Services	0.0520***	0.0064***	0.0443***	0.0211***	0.0235***	0.0240***	0.0378***	0.0888***	0.0206***	0.0515***	0.0231***	0.0198***	0.0241***	0.0303***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mining/Utilities	-0.0011	0.0001	-0.0001***	-0.0000	0.0002	0.0004	-0.0005	0.0003	0.0129**	-0.0000	0.0015**	0.0001	0.0012***	-0.0001
	0.2125	0.4688	0.0033	0.8443	0.7704	0.9013	0.3075	0.8913	0.0355	0.9069	0.0196	0.6672	0.0012	0.8650
Infrastucture														
Agriculture	-0.0238*	-0.0632***	-0.1036***	-0.0665***	-0.0779***	-0.1042***	-0.1085***	-0.0403***	-0.1071***	0.0149	-0.0937***	-0.1259***	-0.1272***	-0.1040***
	0.0568	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.1690	0.0000	0.0000	0.0000	0.0000
Manufacturing	-0.0029	0.0032***	-0.0003	0.0092**	0.0240***	-0.0107*	0.0359***	0.0086	0.0203	-0.0080***	0.0096	0.0216***	0.0113*	0.0047
	0.8337	0.0029	0.9323	0.0404	0.0008	0.0787	0.0000	0.3046	0.3130	0.0034	0.1471	0.0001	0.0999	0.2946
Construction	0.0090**	-0.0004	-0.0025	-0.0103***	0.0045	-0.0254***	0.0269***	0.0113	-0.0024	-0.0063**	0.0079	0.0180***	0.0078	0.0158***
	0.0222	0.8315	0.2663	0.0036	0.3970	0.0004	0.0000	0.4815	0.7147	0.0131	0.1483	0.0000	0.1501	0.0050
Commerce	0.0095	0.0014*	0.0466***	0.0036	0.0211***	0.0141***	0.0180***	0.0167	0.0539***	-0.0127***	0.0377***	0.0276***	0.0240***	0.0542***
	0.4868	0.0663	0.0000	0.4182	0.0024	0.0000	0.0000	0.1617	0.0093	0.0013	0.0000	0.0000	0.0003	0.0000
Services	0.0047	0.0283***	0.0784***	0.0165***	0.0242**	0.0340***	-0.0093	0.0067	0.0145	0.0173**	0.0279***	0.0083	0.0278**	-0.0048
	0.7993	0.0000	0.0000	0.0000	0.0124	0.0000	0.2545	0.7145	0.2986	0.0351	0.0001	0.1350	0.0328	0.6654
Mining/Utilities	0.0065*	0.0005***	-0.0003	0.0014***	-0.0006	0.0047***	0.0001	0.0072	0.1078***	-0.0002**	0.0003	0.0018***	0.0026*	0.0056***
	0.0589	0.0009	0.3082	0.0000	0.7325	0.0001	0.9483	0.2554	0.0000	0.0434	0.9043	0.0099	0.0976	0.0007

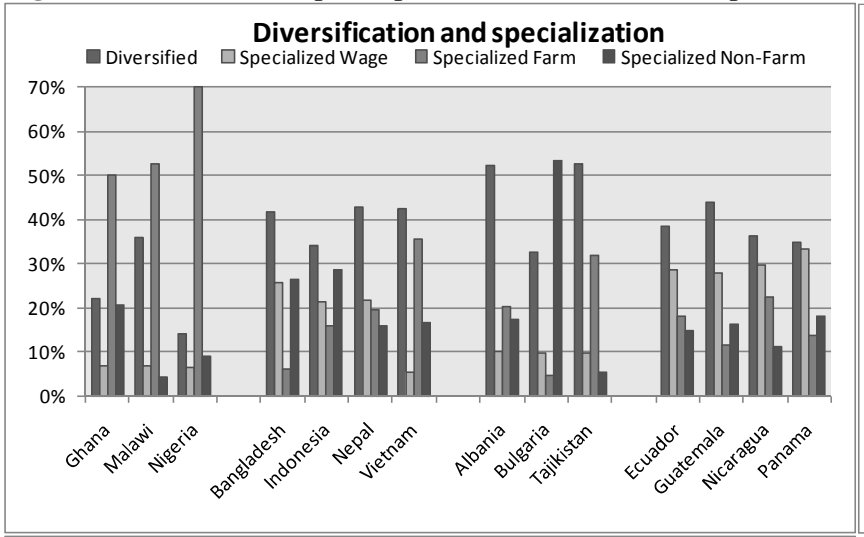
Notes: p-values are reported below coefficients. *** indicates signficance at the 99% level, ** at the 95% level, and * at the 90% level. Empty cells indicate that there was insufficient observations to report the results.

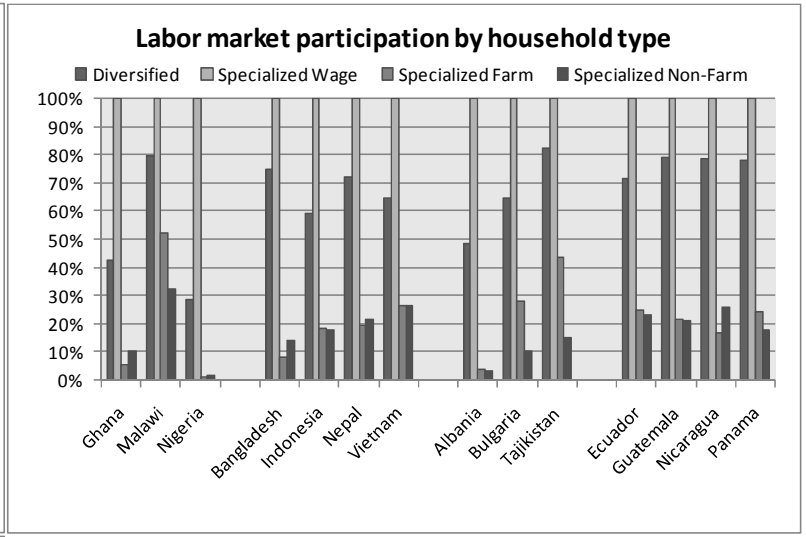
Table 5 Regressions on Wages in Rural Labor Markets: By industry

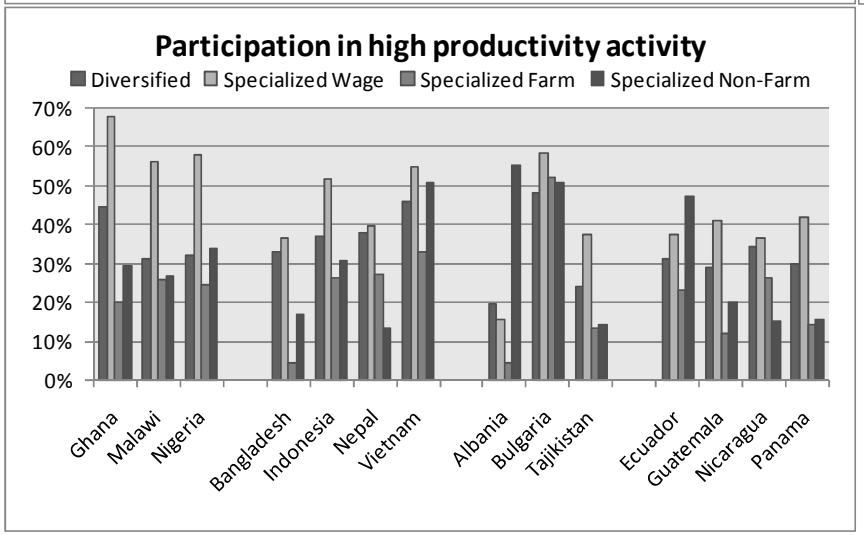
	Sub-Saharan Africa			South & East Asia			Eastern Europe & Central Asia				Latin America			
	Ghana	Malawi	Nigeria	Banglades	Indonesia	Nepal	Vietnam	Albania	Bulgaria	Tajikistan	Ecuador	Guatemala	Nicaragua	Panama
Gender														
Agriculture	-0.0696	-0.2721***	-0.2704	-0.0321**	-0.4637***	-0.0543***	-0.1945***	-1.1884**	0.0171	-0.3438***	-0.1708**	-0.1270***	-0.0392	0.0733
	0.7864	0.0000	0.2117	0.0492	0.0000	0.0025	0.0000	0.0106	0.8876	0.0000	0.0352	0.0038	0.5030	0.3904
Manufacturing	-0.1337	0.0291		-0.1222***	-0.3332***	0.0133	-0.2638***	-0.5638***	-0.1513		-0.5738***	-0.6556***	-0.1252	-0.8078***
	0.4811	0.7311		0.0006	0.0000	0.7778	0.0000	0.0031	0.2216		0.0000	0.0000	0.2433	0.0038
Construction		-0.3577***		-0.0461	-0.4789**	-0.0156	-0.1981***	-0.5693***		-0.4214	-0.5356***	-0.8436**	-0.2756	-
		0.0000		0.3509	0.0111	0.5771	0.0001	0.0059		0.2286	0.0000	0.0319	0.6437	-
Commerce	-0.4660**	-0.0474	0.0091	0.0402	-0.2676**	0.0441	-0.1837**	0.2346	-0.1529	-0.1896	-0.2689**	-0.3555***	-0.2884*	-0.3622***
	0.0139	0.7754	0.9547	0.2490	0.0102	0.5617	0.0320	0.4910	0.1693	0.4940	0.0154	0.0000	0.0588	0.0000
Services	-0.0573	-0.1168	-0.0726	0.0574	-0.0834	-0.0553	0.0900*	-0.2531***	0.0298	-0.6400***	-0.4780***	-0.5099***	-0.3058***	-0.3220***
	0.5676	0.1694	0.5356	0.3469	0.2356	0.3408	0.0858	0.0001	0.6951	0.0000	0.0000	0.0000	0.0000	0.0000
Education														
Agriculture	0.0531***	0.0089***	0.0482*	0.0139***	0.0260***	0.0087**	-0.0039	-0.0513	0.0719***	0.0229**	0.0301***	0.0286***	0.0151**	0.0014
	0.0046	0.0013	0.0683	0.0002	0.0000	0.0108	0.2267	0.2007	0.0013	0.0116	0.0017	0.0000	0.0231	0.8535
Manufacturing	-0.0058	0.0100		0.0313***	0.0304***	0.0291***	0.0086	-0.0304	0.0136		0.0343**	0.0213*	0.0441***	0.0380**
	0.8350	0.2160		0.0000	0.0000	0.0002	0.3504	0.4740	0.5184		0.0109	0.0548	0.0017	0.0176
Construction		0.0143		0.0246***	0.0014	0.0048	0.0064	0.0728***		0.0860**	0.0174	0.0376***	0.0559***	0.0409**
		0.1846		0.0024	0.8679	0.3409	0.2614	0.0013		0.0393	0.2280	0.0048	0.0058	0.0177
Commerce	0.0285	0.0457***	0.0025	0.0397***	0.0468***	0.0179*	0.0134	0.0400	0.0412**	0.0277	0.0340***	0.0578***	0.0424**	0.0288***
	0.2120	0.0031	0.8881	0.0000	0.0000	0.0776	0.4314	0.3614	0.0446	0.3482	0.0055	0.0000	0.0207	0.0008
Services	0.0631***	0.0401***	0.0132	0.0484***	0.0722***	0.0088	0.0277***	0.0378**	0.0390**	0.0250*	0.0393***	0.0672***	0.0358***	0.0692***
	0.0000	0.0000	0.1066	0.0000	0.0000	0.1349	0.0001	0.0104	0.0464	0.0681	0.0002	0.0000	0.0000	0.0000
Infrastucture														
Agriculture	0.0735	0.0776***	-0.0018	-0.0730***	0.0247	0.0820***	0.0247**	0.0730	0.2916***	0.0569***	0.0332	-0.0194	0.0083	0.2167***
	0.3512	0.0025	0.9843	0.0025	0.4040	0.0000	0.0139	0.4386	0.0001	0.0080	0.2886	0.2406	0.6509	0.0000
Manufacturing	0.0647	0.0041		0.0588**	0.0047***	-0.0530*	0.1443**	0.1834	0.0566		0.0030	-0.0267**	-0.0031	0.0084*
	0.1100	0.4395		0.0246	0.0000	0.0985	0.0360	0.2493	0.2573		0.2484	0.0437	0.1513	0.0822
Construction		0.0033		0.3621***	0.0010	0.0287	-0.0778	0.0265		-0.2839	0.0005	0.0021	0.0044	0.0023
		0.7526		0.0064	0.7792	0.1036	0.1374	0.7873		0.6108	0.9460	0.6354	0.1719	0.3588
Commerce	0.0409	0.0458	0.0009	-0.0050	0.0028	-0.1592***	-0.4036**	0.3043**	0.0228	0.2724	0.0103*	0.0046	-0.0058***	0.0032***
	0.2116	0.3562	0.3558	0.9403	0.1816	0.0004	0.0320	0.0241	0.4056	0.6983	0.0552	0.2224	0.0014	0.0001
Services	0.0179	0.0004	0.0006	-0.0333	-0.0028	0.0147	0.0665	-0.0401	0.0732***	-0.3336*	0.0049*	0.0038***	-0.0011	0.0027***
	0.2539	0.9427	0.2671	0.2728	0.6297	0.1498	0.5151	0.3521	0.0000	0.0792	0.0772	0.0045	0.4695	0.0021

Notes: p-values are reported below coefficients. *** indicates signficance at the 99% level, ** at the 95% level, and * at the 90% level. Empty cells indicate that there was insufficient observations to report the results

Figure 8 Labour market participation for diversified and specialized households







Appendix

Table A1 Probits on Participation in Rural Labor Markets

	Sub-Saharan Africa			South & East Asia				Eastern Europe & Central Asia			Latin America & Caribbean			
	Ghana98	Malawi04	Nigeria04	Bang00	Indonesia00	Nepal03	Vietnam98	Albania05	Bulgaria01	Tajik03	Ecuador95	Guat00	Nica01	Panama03
Gender (female=1)	-0.0401***	-0.2383***	-0.0301***	-0.0142	-0.2115***	-0.0776***	-0.1380***	-0.1459***	0.0149	-0.1341***	-0.3767***	-0.4818***	-0.3529***	-0.3919***
	0.0000	0.0000	0.0000	0.1078	0.0000	0.0000	0.0000	0.0000	0.6164	0.0000	0.0000	0.0000	0.0000	0.0000
Education (years)	0.0070***	-0.0062***	0.0038***	-0.0084***	0.0037***	-0.0141***	-0.0004	0.0215***	0.0374***	0.0300***	0.0015	0.0103***	0.0093***	0.0151***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7985	0.0000	0.0000	0.0000	0.4319	0.0000	0.0000	0.0000
Age	0.0110***	0.0233***	0.0066***	0.0002	0.0291***	0.0092***	0.0365***	0.0163***	0.0244***	0.0550***	0.0165***	0.0262***	0.0382***	0.0373***
	0.0000	0.0000	0.0000	0.9174	0.0000	0.0021	0.0000	0.0000	0.0018	0.0000	0.0000	0.0000	0.0000	0.0000
Age2	-0.0001***	-0.0003***	-0.0001***	-0.0000	-0.0004***	-0.0002***	-0.0005***	-0.0002***	-0.0003***	-0.0007***	-0.0003***	-0.0004***	-0.0005***	-0.0005***
	0.0000	0.0000	0.0000	0.3082	0.0000	0.0000	0.0000	0.0000	0.0027	0.0000	0.0000	0.0000	0.0000	0.0000
Marital status (married=1)	0.0194***	0.0317***	0.0113***	-0.0650***	-0.0139	0.0086	-0.0628***	0.0056	0.0500	-0.0235	-0.0500***	-0.1072***	-0.0580***	-0.0155
	0.0009	0.0015	0.0000	0.0000	0.2227	0.5889	0.0000	0.6745	0.1990	0.1208	0.0046	0.0000	0.0006	0.3181
Household labor size	-0.0080***	-0.0287***	-0.0016***	0.0038	-0.0097***	0.0207***	0.0057*	-0.0045*	0.0627***	-0.0119***	0.0022	0.0011	-0.0051	-0.0038
	0.0000	0.0000	0.0000	0.2066	0.0000	0.0000	0.0627	0.0786	0.0000	0.0000	0.5796	0.7539	0.1873	0.2823
Female headed household	-0.0084	0.1302***	0.0109***	0.0181	0.0599***	-0.0850***	0.0484***	0.0052	0.0605	-0.0025	0.0347	0.0899***	0.1208***	0.0621***
	0.1409	0.0000	0.0005	0.3586	0.0000	0.0000	0.0000	0.7723	0.2497	0.8721	0.1436	0.0000	0.0000	0.0009
Land owned	-0.0022***	-0.0016***	-0.0000**	-0.1148***	-0.0016**	-0.0005***	-0.1449***	-0.0264***	0.0209*	0.0817***	-0.0049***	-0.0058***	-0.0044***	-0.0017***
	0.0032	0.0000	0.0113	0.0000	0.0491	0.0006	0.0000	0.0001	0.0831	0.0075	0.0000	0.0009	0.0000	0.0000
Infrastucture/proximity index	0.0160***	-0.0176***	0.0098***	-0.0250***	-0.0036	-0.0327***	-0.0451***	0.0013	0.0473***	-0.0455***	0.0034	-0.0251***	0.0112	0.0021
	0.0000	0.0000	0.0000	0.0000	0.4100	0.0000	0.0000	0.7424	0.0037	0.0000	0.6333	0.0000	0.1198	0.7773
Number of observations	8600	22016	35521	14282	13193	7767	11772	4998	1340	9795	6275	10151	5408	7001

Note: Marginal effects at the sample mean reported with p-values presented below calculated using robust standard errors. *** indicates signficance at the 99% level, ** 95% level and * 90% level.

Table A2 - Probits on Participation in Rural Labor Markets, by Productivity Category

	Sub-Saharan Africa			South & East Asia				Eastern Europe & Central Asia			Latin America & Caribbean			
Low Productivity	Ghana98	Malawi04	Nigeria04	Bang00	Indonesia00	Nepal03	Vietnam98	Albania05	Bulgaria01	Tajik03	Ecuador95	Guat00	Nica01	Panama03
Gender (female=1)	0.1057**	0.2368***	0.0745**	0.0154	0.2017***	0.0228*	0.2273***	0.1663***	0.0157	0.2232***	0.2684***	0.1261***	0.0235	0.0809***
	0.0262	0.0000	0.0180	0.2232	0.0000	0.0844	0.0000	0.0000	0.7070	0.0000	0.0000	0.0000	0.4369	0.0009
Education (years)	-0.0348***	-0.0070***	-0.0179***	-0.0225***	-0.0203***	-0.0101***	0.0041	0.0109**	-0.0243***	-0.0278***	-0.0238***	-0.0369***	-0.0320***	-0.0206***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1552	0.0373	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000
Age	-0.0194	-0.0424***	-0.0313***	-0.0098***	-0.0323***	-0.0045	-0.0203***	-0.0126	0.0029	-0.0181***	-0.0168***	-0.0225***	-0.0279***	-0.0236***
	0.1586	0.0000	0.0001	0.0035	0.0000	0.1793	0.0006	0.2702	0.8196	0.0063	0.0026	0.0000	0.0000	0.0000
Age2	0.0002	0.0005***	0.0004***	0.0001***	0.0004***	0.0001	0.0003***	0.0003*	-0.0001	0.0002**	0.0002***	0.0003***	0.0003***	0.0003***
	0.2704	0.0000	0.0002	0.0040	0.0000	0.2010	0.0011	0.0679	0.6874	0.0271	0.0057	0.0000	0.0003	0.0001
Marital status (married=1)	-0.0125	-0.0568***	-0.0027	-0.0779***	-0.0949***	-0.0487***	-0.0145	-0.0362	-0.0951	-0.0479*	-0.0869***	-0.0588**	-0.0742**	-0.0482**
	0.8310	0.0004	0.9385	0.0000	0.0003	0.0086	0.5864	0.4452	0.1092	0.0967	0.0012	0.0108	0.0130	0.0308
Household labor size	-0.0125	0.0035	-0.0030	0.0034	0.0021	-0.0082**	-0.0095	-0.0083	0.0384**	0.0201***	-0.0145**	-0.0206***	-0.0026	0.0024
	0.4060	0.4830	0.6070	0.4626	0.6826	0.0336	0.1436	0.4017	0.0290	0.0000	0.0189	0.0003	0.7276	0.6735
Female headed household	-0.0646	-0.0045	-0.0707	0.0681***	-0.0166	0.1076***	0.0185	-0.0493	0.0179	-0.0277	-0.0585*	-0.0014	0.0121	0.0188
	0.2874	0.7933	0.1577	0.0091	0.5641	0.0000	0.4147	0.5673	0.8023	0.3257	0.0941	0.9607	0.6918	0.4993
Land owned	-0.0036	0.0001	0.0002	0.0259***	-0.0006	0.0005***	0.0390	-0.0199	0.0041	0.1885***	-0.0003	0.0001	0.0016*	-0.0006
	0.6111	0.7512	0.1439	0.0070	0.7066	0.0004	0.2115	0.3733	0.7966	0.0007	0.7653	0.9092	0.0814	0.2178
Infrastucture/proximity index	-0.0779***	-0.0623***	-0.0483***	-0.0156*	-0.0372***	-0.0462***	-0.0297***	0.0180	-0.0746***	-0.0022	-0.0357***	-0.0230**	-0.0240*	-0.1418***
	0.0000	0.0000	0.0000	0.0616	0.0004	0.0000	0.0064	0.1578	0.0020	0.8362	0.0021	0.0150	0.0975	0.0000
High Productivity	Ghana98	Malawi04	Nigeria04	Bang00	Indonesia00	Nepal03	Vietnam98	Albania05	Bulgaria01	Tajik03	Ecuador95	Guat00	Nica01	Panama03
Gender (female=1)	-0.0926*	-0.1847***	-0.0579*	0.0228*	-0.1352***	-0.0137	-0.2273***	-0.1663***	-0.0157	-0.2070***	-0.1814***	-0.1285***	-0.0455	-0.0730***
	0.0744	0.0000	0.0804	0.0650	0.0000	0.3752	0.0000	0.0000	0.7070	0.0000	0.0000	0.0000	0.1145	0.0035
Education (years)	0.0348***	0.0104***	0.0153***	0.0333***	0.0238***	0.0177***	-0.0041	-0.0109**	0.0243***	0.0199***	0.0365***	0.0404***	0.0304***	0.0332***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1552	0.0373	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000
Age	0.0454***	0.0340***	0.0314***	0.0124***	0.0288***	0.0077*	0.0203***	0.0126	-0.0029	0.0059	0.0231***	0.0319***	0.0347***	0.0110*
	0.0080	0.0000	0.0008	0.0001	0.0000	0.0530	0.0006	0.2702	0.8196	0.3155	0.0001	0.0000	0.0000	0.0680
Age2	-0.0005**	-0.0004***	-0.0003***	-0.0001***	-0.0003***	-0.0001	-0.0003***	-0.0003*	0.0001	-0.0000	-0.0003***	-0.0004***	-0.0005***	-0.0001
	0.0255	0.0000	0.0024	0.0030	0.0000	0.1122	0.0011	0.0679	0.6874	0.6439	0.0008	0.0000	0.0000	0.3811
Marital status (married=1)	0.0774	0.0689***	0.0419	-0.0011	0.0836***	0.0353*	0.0145	0.0362	0.0951	0.0473*	0.1097***	0.0725***	0.0660**	0.0729***
	0.2473	0.0000	0.2755	0.9502	0.0024	0.0959	0.5864	0.4452	0.1092	0.0619	0.0001	0.0012	0.0241	0.0027
Household labor size	0.0119	0.0015	0.0105*	0.0038	-0.0020	-0.0133***	0.0095	0.0083	-0.0384**	-0.0164***	0.0095	0.0169***	-0.0013	-0.0118*
	0.4627	0.7428	0.0813	0.3782	0.7156	0.0032	0.1436	0.4017	0.0290	0.0000	0.1353	0.0018	0.8572	0.0609
Female headed household	0.0513	0.0237	0.0778	0.0113	-0.0229	-0.1362***	-0.0185	0.0493	-0.0179	0.0448*	0.0606	0.0151	-0.0195	0.0205
	0.4665	0.1548	0.1729	0.6582	0.4750	0.0000	0.4147	0.5673	0.8023	0.0717	0.1018	0.5924	0.5168	0.5041
Land owned	0.0035	0.0004	-0.0000	0.0000	0.0010	0.0001	-0.0390	0.0199	-0.0041	-0.0543	-0.0008	0.0028**	-0.0010	0.0013***
	0.6661	0.1989	0.9151	0.9962	0.5137	0.6482	0.2115	0.3733	0.7966	0.2703	0.3485	0.0360	0.2726	0.0093
Infrastucture/proximity index	0.0624***	0.0769***	0.0367***	0.0445***	0.0509***	0.0637***	0.0297***	-0.0180	0.0746***	-0.0072	0.0269**	0.0402***	0.0352**	0.1361***
	0.0007	0.0000	0.0024	0.0000	0.0000	0.0000	0.0064	0.1578	0.0020	0.4457	0.0260	0.0000	0.0148	0.0000
Number of observations	737	9000	1675	6361	3409	4829	3356	671	630	3211	2342	3935	1767	2640

Notes: Marginal effects at the sample mean reported with p-values presented below calculated using robust standard errors. *** indicates signficance at the 99% level, ** 95% level and * 90% level.

Table A3 Regressions on Total Wages in Rural Labor Markets

	Sub-Saharan Africa			South & East Asia				Eastern Europe & Central Asia			Latin America			
	Ghana	Malawi	Nigeria	Banglades	Indonesia	Nepal	Vietnam	Albania	Bulgaria	Tajikistan	Ecuador	Guatemala	Nicaragua	Panama
Gender (female=1)	-0.1469**	-0.2971***	-0.1776**	-0.0253*	-0.3215***	-0.0320*	-0.1851***	-0.4296***	-0.0452	-0.5027***	-0.3648***	-0.2969***	-0.1244***	-0.1050***
	0.0333	0.0000	0.0399	0.0804	0.0000	0.0654	0.0000	0.0000	0.4562	0.0000	0.0000	0.0000	0.0005	0.0028
Education (years)	0.0626***	0.0201***	0.0378***	0.0415***	0.0584***	0.0218***	-0.0060**	0.0135	0.0386***	0.0507***	0.0457***	0.0635***	0.0397***	0.0484***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0254	0.2122	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
Age	0.0252	0.0697***	0.0867***	0.0084**	0.0513***	0.0122***	0.0207***	0.0120	0.0172	0.0365***	0.0212**	0.0465***	0.0396***	0.0410***
	0.2554	0.0000	0.0009	0.0323	0.0000	0.0061	0.0003	0.5969	0.3588	0.0028	0.0197	0.0000	0.0000	0.0000
Age^2	-0.0002	-0.0009***	-0.0010***	-0.0001	-0.0005***	-0.0001**	-0.0003***	-0.0003	-0.0001	-0.0004**	-0.0002*	-0.0006***	-0.0005***	-0.0004***
	0.5003	0.0000	0.0028	0.1279	0.0001	0.0186	0.0003	0.2739	0.5671	0.0138	0.0695	0.0000	0.0000	0.0002
Marital status (married=1)	0.0528	0.1122***	-0.0090	0.1089***	0.2067***	0.0732***	0.0074	0.0105	0.0100	0.0898	0.1087***	0.0496*	0.1259***	0.1052***
	0.5480	0.0000	0.9261	0.0000	0.0000	0.0029	0.7564	0.9176	0.8976	0.1007	0.0093	0.0747	0.0001	0.0010
Land owned	0.0168*	-0.0010	-0.0007	-0.0579***	-0.0007	0.0398***	-0.0227	0.0968**	0.0392**	-0.3945***	-0.0009	0.0025*	-0.0010	0.0025***
	0.0656	0.6617	0.1507	0.0001	0.8111	0.0000	0.4696	0.0369	0.0292	0.0023	0.6472	0.0845	0.2894	0.0001
Infrastucture/proximity index	0.1337***	0.1760***	0.0477	0.0276*	0.1015***	0.0936***	0.0431***	-0.0041	0.0333	-0.0041	0.0553***	0.0452***	0.0280*	0.2108***
	0.0000	0.0000	0.1548	0.0504	0.0000	0.0000	0.0000	0.8991	0.3156	0.8072	0.0066	0.0003	0.0612	0.0000
Number of observations	725	8936	1668	6350	3402	4778	3343	670	630	3204	2321	3930	1764	2638

Notes: p-values are reported below coefficients. *** indicates signficance at the 99% level, ** at the 95% level, and * at the 90% level.