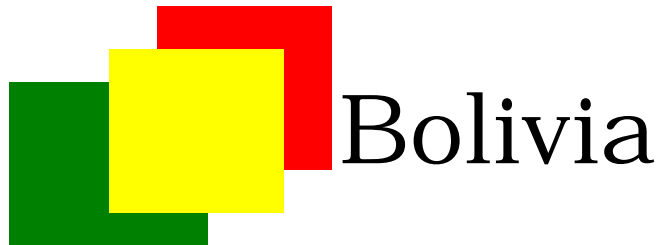


Economic Opportunities for Indigenous Peoples in Latin America

February, 2007



THE WORLD BANK

CONFERENCE EDITION

Economic Opportunities for Indigenous Peoples in Latin America in Bolivia

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Economic Opportunities for Indigenous People in Bolivia

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The authors are grateful for the comments of Emmanuel Skoufias. This paper was financed by the World Bank. Any errors or omissions are responsibility of the authors.

Abstract

This paper examines the factors that determine the income-generating activities of indigenous households in Bolivia and assesses how social networks affect these economic decisions. The relation between public policies and family welfare is also examined. Our evidence shows that indigenous households are more likely to participate in low-quality sectors of employment than non-indigenous households, even after controlling for education and labor market experience. Social networks increase the likelihood of indigenous people being employed but only in low-quality jobs in the informal sector or in agricultural activities. We found that social networks have a positive effect on indigenous children's school enrollment and on indigenous households' access to modern health services. Finally, we found that Bolivia's public health insurance program and social security transfers have been well targeted to the poor.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
I - INTRODUCTION.....	1
II - METHODOLOGY.....	3
Social Networks	3
Public Interventions	4
III - DATA.....	5
IV - INCOME PROFILE.....	5
V - EMPIRICAL RESULTS.....	10
Household Characteristics and Employment Outcomes	10
Social Networks and Other Outcomes	14
Public Policy Programs	16
VI - CONCLUSIONS.....	18
REFERENCES.....	19

TABLES

Table 1: Contribution to Poverty by Ethnic Group _____	1
Table 2: Extreme Poverty, Poverty, and Consumption by Area and Ethnicity _____	6
Table 3: Income by Ethnicity and Area _____	6
Table 4: Economic Opportunities by Ethnicity and Area _____	7
Table 5: Income Patterns and Average Monthly Household Income (in Bolivianos) _____	8
Table 6: Labor Force Characteristics by Ethnicity and Area _____	9
Table 7: Effects of Social Networks on Economic Outcomes _____	13
Table 8: Effects of Social Networks on Economic Outcomes (Spouses) _____	14
Table 9: Effects of Social Networks on Other Outcomes by Geographic Area _____	15
Annex Table 1.1: Dependent Variables (MECOVI 2001) _____	21
Annex Table 1.2: Independent Variables _____	23
Annex Table 1.3: Mean Characteristics of Indigenous and Non-indigenous Households _____	24
Annex Table 1.4: Mean Characteristics of Indigenous and Non-indigenous Household Heads and Spouses _____	25
Annex Table 1.5: Pair wise Correlations: HH Demographic and Economic Variables _____	26
Annex Table 1.6: Average Monthly Income (In Bolivianos.) Earnings and Employment Type _____	27
Annex Table 1.7: Income Patterns and Average Monthly Household Income _____	28

Annex Table 1.8: Bolivia: All Households - Probit regressions _____	29
Annex Table 1.8A: Bolivia: All Urban Households- Probit regressions _____	30
Annex Table 1.8B: Bolivia: All Rural Households - Probit regressions _____	31
Annex Table 1.9: Bolivia: All Indigenous Households - Probit regressions _____	32
Annex Table 1.9A: Bolivia: Indigenous Households, Urban - Probit regressions _____	33
Annex Table 1.9B: Bolivia: Indigenous Households, Rural - Probit regressions _____	34
Annex Table 1.10: Bolivia: All Population - Probit Regressions _____	35
Annex Table 1.11: Bolivia: Indigenous Households - Probit Regressions _____	36
Annex Table 1.12: Bolivia: All Population, Other Outcomes - Probit Regressions _____	37
Annex Table 1.13: Bolivia: Indigenous Households, Other Outcomes - Probit Regressions ____	38
Annex Table 1.14: Bolivia: Children's Outcomes (Children aged 7 to 14 Years) Probit Regressions _____	39
Annex Table 1.14: Bolivia: Children's Outcomes (Children aged 7 to 14 Years) Probit Regressions _____	39
Annex Table 1.15: Bolivia: Indigenous Children's Outcomes (Children aged 7 to 14 Years) Probit Regressions _____	40
Annex Table 1.15: Bolivia: Indigenous Children's Outcomes (Children aged 7 to 14 Years) Probit Regressions _____	40
Annex Table 1.16: Bolivia: Welfare Effects of the Basic Health Insurance Program _____	41
Annex Table 1.17: Bolivia: Welfare Effects of BOLIVIDA Program _____	42

EXECUTIVE SUMMARY

Indigenous people in Bolivia represent almost 40 percent of the country's population, yet they represent a disproportionate share of the country's poor. Although they have historically been excluded and/or marginalized from the political process, political representation of the indigenous population has increased dramatically in recent years. Not only has their representation in the legislature been increasing, but also the election of President Evo Morales in 2005 was an unprecedented victory for the indigenous social movement. Notwithstanding these recent transformations, most of the indigenous population of Bolivia continues to live in circumstances of exclusion, poverty, and inequality.

Income Decomposition Analysis

Poverty and extreme poverty rates are significantly higher, and average consumption is lower, among indigenous people than among non-indigenous people in both rural and urban areas.

There are significant differences between indigenous and non-indigenous households, both in terms of income levels and their sources. In Bolivia, mean income per capita in indigenous households was about US\$46 per month in 2001 compared with US\$ 74 for non-indigenous households.¹ This gap can partly be explained by the fact that the largest source of income among the non-indigenous (47.4 percent) is non-agricultural wages, which are higher – on average – than income from self-employment and from agricultural activities. The most important source of income for indigenous families, on the other hand, is agricultural self-employment, followed closely by non-agricultural wages. Despite the fact that the relative importance of their income sources differs, indigenous families receive lower average incomes even within each type of activity. The differences in income between indigenous and non-indigenous workers may also be due to differences in worker characteristics. However, neither labor market experience nor female participation seem to drive the differences in incomes, but education seems to play an important role. Non-indigenous heads of households have almost four more years of education than the indigenous.

The sector of employment is also an important determinant of income. The non-indigenous tend to be employed in higher-quality jobs in terms of formality, occupation, and sector of employment in both rural and urban areas. On average, rates of participation in the informal sector are about 50 percent higher among indigenous heads of household than among non-indigenous heads of households. A higher proportion of non-indigenous families than indigenous families are headed by waged workers in both rural and urban areas, while a bigger share of indigenous households than non-indigenous households is self-employed.

¹ Using the exchange rate for December 2001. In Bolivian bolivianos the monthly per capita income of the indigenous was 300 compared to 480 for non-indigenous.

Determinants of Economic Opportunities

Being indigenous is correlated with having lower-quality employment even after controlling for household characteristics, regardless of the ethnic group to which an indigenous head of the household belongs. Indigenous heads of households and spouses are more likely to be employed in the informal sector, in agriculture, and self-employed than their non-indigenous counterparts. Among the range of indigenous families, Quechua households are slightly better off in terms of the quality of their employment as they are more likely to be employers and less likely to be self-employed. Being indigenous and bilingual (in other words, speaking both an indigenous language and Spanish) did not affect employment outcomes. Spouses who belong to any indigenous group are more likely to be employed than spouses who are not indigenous, but they are more likely to work in lower-quality jobs (usually informal or agricultural employment) than non-indigenous spouses.

Education is a key determinant in accessing higher-quality jobs for all households, including the indigenous. Additional education increased the likelihood of an individual being employed in the formal sector, and the higher the education levels of the members of an indigenous household, the more likely the head of household is to work in the non-agricultural sector.

Female heads of households are less likely to be employed in general than male heads of households, and they are more likely to be self-employed, to work in the informal sector, and to work in non-agricultural activities. Heads of households with more labor market experience are more likely than others to be employed and are more likely to work in the formal sector and to be self-employed.

Living in a rural area is associated with lower-quality employment in Bolivia, which is similar to patterns that have been observed in other Latin American countries. Heads of households who live in rural areas, including indigenous heads, are less likely to be employed in the formal sector and in non-agricultural activities than heads of households in urban areas.

Living in Bolivia's plains departments (Santa Cruz, Beni, and Pando) increases the likelihood of working in agriculture, and, among the indigenous, it increases the likelihood of being employed in the informal sector. Indigenous families are more likely to migrate to the plains' regions, probably due to the greater economic activity that has developed there.

Home ownership is associated with a higher probability of employment in agriculture and in self-employment, reflecting the fact that many people in Bolivia own agricultural land for production. We also found that among families that own their home – including indigenous families – the household head is less likely to migrate.

Family size has negative effects on the likelihood and quality of employment, with similar effects across ethnic lines. Household demographic composition has some additional effects on the indigenous. For example, the presence of child aged 0 to 5 years in the household reduces the probability of being employed, while the presence of older children aged 6 to 18 is correlated with a higher likelihood of being employed.

The Role of Social Networks

In order to study the impact of social networks on the various economic choices made by Bolivia's households, we constructed a measure that captured two dimensions of a social network – size and quality. Larger networks provide households with more contacts and information,

while the quality of the network reflects how successful the members of the network are in terms of their own economic and employment outcomes.

We found that social networks are an effective channel through which households can gain access to employment opportunities. However, social networks do not appear to provide access to higher-quality jobs but only to jobs in the informal sector, in agriculture, and as self-employed, all of which yield lower incomes than non-agricultural, formal sector employment. These results are similar for both indigenous and non-indigenous households and in both urban and rural areas. Social networks also affect the economic choices of the spouses of household heads, who are more likely to be employed if they have access to a social network but are more likely to work in agriculture than in a higher-quality job.

Social networks did not affect the likelihood that a child from the household would work, but access to social networks did increase the likelihood that all children in the household were enrolled in school. This finding was consistent across ethnic lines and in both rural and urban locations, which shows that social networks are an important mechanism in increasing children's human capital, which is likely to increase family income in the future.

Access to a social network also increased access to modern health services for indigenous families only, which is another positive role that networks play in increasing households' human capital. This finding suggests that social networks may play a complementary role to the country's public health programs by promoting or facilitating the use of modern health services.

Public Programs and Welfare

We analyzed the effects of two public policies on the welfare of indigenous and non-indigenous households. One of the public programs that we studied was Bolivia's Basic Health Insurance program (BHI), which provides free health care for the country's most common problems. The other program was the BOLIVIDA program, which provides an annual pension transfer of US\$60 to all Bolivians over the age of 65.

Households that used the BHI program during the previous year had lower welfare levels than those that did not. This negative correlation applied to both indigenous and non-indigenous families in both urban and rural areas. We did not interpret this finding as causal but rather as a reflection of the fact that it is the poor who usually make use of publicly provided health and education services. Thus, we concluded that the BHI program is well –targeted to the poor.

We found a negative correlation between the share of household income represented by the BOLIVIDA transfer (a fixed amount transfer) and per capita household expenditures, which simply reflects the fact that expenditure falls with income.

The following characteristics are correlated with lower family consumption – having a female head of the household (although not among indigenous families), rural location, and larger family size. The following characteristics are found to have a positive correlation with household consumption – education and labor market experience for both indigenous and non-indigenous households, living in Bolivia's plains regions, and access to infrastructure such as drinkable water, electricity and sewerage systems.

I - INTRODUCTION

Bolivia is one of the poorest countries of Latin America, and the economic and political crises that it has gone through since 1999 have contributed to worsening this situation. With per capita GDP of less than US\$1,000 per year, 64 percent of its population lives below the poverty line. Although higher levels of economic growth during the 1990s helped to reduce poverty levels, a crisis at the end of the decade reversed the trend. As a result, by the year 2000, poverty rates in the main cities of the country were as high as they had been at the beginning of the 1990s.¹

Indigenous people in Bolivia represent almost 40 percent of the country's population, yet they have historically been excluded from the country's socioeconomic development.² As the Table 1 indicates, the indigenous population represents a disproportionate share of the country's poor, which is in turn correlated with lower education and health outcomes and lower incomes in general.

Table 1: Contribution to Poverty by Ethnic Group

Ethnic group	Number (N)	%	Poverty (N)	Contribution (%)
Quechua	1,431,504	17.6	1,157,692	22.1
Aymara	869,656	10.7	704,931	13.5
Other Indigenous	60,807	0.7	55,096	1.1
Non-Indigenous	5,777,390	71.0	3,310,809	63.3
Total	8,139,357	100.0	5,228,528	100.0

Note: Ethnic group based on mother tongue. Poverty includes extreme and non-extreme poor. Does not include foreign language speakers or persons who do not speak. Source: Own calculations based on MECOVI 2001.

Source: Own calculations based on MECOVI 2001.

This exclusion from the country's economic progress has united indigenous people in Bolivia (as in other Latin American countries) and motivated various indigenous social movements (Lucero, 2005). Political representation of the indigenous population has changed dramatically in the recent years. Until 1997, indigenous political parties never made up more than 2 percent of Bolivia's national legislature, but by the 2002 elections, 41 out of 157 members of the National Congress represented indigenous parties. The country's Constitution was recently reformed to recognize Bolivia as a multi-ethnic and multi-cultural country.³ The indigenous political movements culminated with the election of President Evo Morales in 2005.

Despite this noteworthy political transformation, most of the indigenous population continues to live in circumstances of exclusion, poverty, and inequality. This paper examines the differences in the composition of income and the income-generating activities of Bolivian indigenous households. We also investigate the factors that determine the participation of indigenous households in income-generating activities, giving particular emphasis to the role of social

¹ World Bank, 2005.

² We define indigenous based on mother tongue and the language normally spoken in the household.

³ Constitución Política del Estado, 1995.

networks in these economic decisions for urban and rural areas separately. Furthermore, we assess the welfare effects of two public programs: Basic Health Insurance, which provides coverage for the most common health ailments affecting Bolivia's population, and Bonosol-Bolivida, an annual lump-sum transfer to all persons aged 65 years and older.

The results of this study are important because Bolivia is one of the poorest countries of the region, and because the focus of this study — the indigenous population — represents the poorest among the poor, people who have lagged behind other groups for centuries in terms of development indicators and who continue to have limited economic opportunities. Our results will contribute to a better understanding among the research community of the determinants of behavior within the indigenous population, which can be a very useful input into the design of effective public policies aimed at improving the welfare of this group. Furthermore, the study will be an important contribution to the growing empirical literature on the effect of social networks on the welfare of and the economic opportunities available to indigenous and non-indigenous households.

Our income composition analysis revealed that there are significant differences between indigenous and non-indigenous households, both in terms of income levels and their sources. Average per capita income in indigenous households is about 60 percent lower than in non-indigenous households. This could be due to the fact that a greater proportion of indigenous heads of households are employed in the informal sector and in agriculture, both of which pay less than formal non-agricultural jobs. Part of the difference in income may also be due to worker characteristics; we found that, even though indigenous workers have similar labor market experiences as the average population, they have about three fewer years of education than the average worker.

Our empirical analysis revealed that female household heads are less likely to be employed than their male counterparts and, when these women do work, they are employed in lower-quality jobs. Labor market experience has a positive effect on the likelihood and quality of a person's employment. Education has a positive effect on the quality of employment of both heads of households and their spouses. Living in rural areas is associated with lower-quality employment, while living in Bolivia's plains region has mixed effects. Larger-family size has a negative effect on employment outcomes. Being indigenous is correlated with lower quality jobs, even after controlling for other characteristics.

Finally, this paper provides new evidence on the role played by social networks in the economic decisions made by indigenous and non-indigenous households. The evidence shows that social networks help workers to find employment but only in occupations in the informal sector, in self-employment, and in agricultural activities, but they do not help them to obtain high-quality jobs. Social networks do have important positive effects on indigenous families' human capital, as we found that access to a larger and better social network is positively correlated with school attendance for children aged 7 to 14 years and with access to modern health services. We also found evidence that the two public programs that we analyzed have been well targeted to the poorest segments of Bolivia's population.

The paper is organized as follows. In Part II, we present the methodology that we used to carry out our analysis; while a detailed description of the data can be found in Part III. In Part IV, we provide background information on Bolivia, as well as a descriptive analysis of household income and its sources. Our econometric results are presented in Part V, followed by concluding comments in Part VI.

II - METHODOLOGY

We sought to answer two broad questions: what are the main determinants of household employment outcomes? And secondly, what are the effects of public policy interventions on household welfare?

Social Networks

We analyzed the determinants of household participation in different income-generating activities, with a specific focus on how social networks can influence households' economic choices. Although traditional theory and empirical studies have demonstrated that it is mainly market incentives that determine individual decisions, recent studies suggest that this is not so among more traditional and/or indigenous populations. These groups are also influenced by other factors such as social or community norms. Policymakers need to understand these non-market factors to be able to design effective public policies and initiatives that aim to create economic opportunities for indigenous people.

We attempted to capture the role of these non-market interactions by building a measure of the social networks to which an individual or household has access. A social network has two dimensions: size and quality. Larger networks provide more contacts and information about different relevant decisions, such as job opportunities or the coverage of the health system. The quality of the network reflects how successful the members of the network are in their own employment outcomes or how intensively they use the health or financial system. Following Bertrand et al (2000), we used a social network measure that summarizes the product of the quantity and the quality of the network. The social network of individual i living in municipality j and speaking language k is equal to:

$$SN_{ijk} = CA_{ijk} * \bar{Y}_{jk}$$

Where CA_{ijk} , the contact availability of individual or household i , measures the fraction of the population in municipality j that speaks language k , and \bar{Y}_{jk} is the average economic outcome at the municipality level of people speaking language k .

In order to study the impact of social networks on various economic choices of Bolivia's households and to quantify the magnitude of the social network effect relative to other relevant household characteristics, we performed the following estimation:

$$\Pr(Y_{ijk}) = X_{ijk}' \mathbf{b} + (SN_{ijk})' \mathbf{g} + CA_{ijk} * \mathbf{a} + Z_j' \mathbf{q} + \mathbf{d}_k + \mathbf{e}_{ijk} \quad (1)$$

where Y_{ijk} is a binary variable that equals one if household i participates in an economic outcome (more details below). Vector X includes family controls such as the gender, age, and education of the head of the household, home ownership, access to basic services, and the age composition of the household. SN is the measure of social networks defined above, CA is the proportion of people in the municipality who speak the same language as the individual, Z is a vector of

municipal controls, and \mathbf{d} are dummy variables for the languages spoken by households. Since we were interested in the behavior of households, i indexes families rather than individuals.⁴

Thus, we estimated the probability that households will participate in different economic activities with probit regressions. Our data allowed us to estimate the determinants of the following relevant economic outcomes: the household head/spouse is employed, the household head/spouse is employed in the formal sector, the household head is an employer, the household head works is self-employed, the household head/spouse works in non-agricultural activities, and the household head has migrated from another place in the last five years. We were also able to identify whether the household has access to financial markets and if the household uses modern health services.

We also studied how social networks affect household decisions about the employment and schooling of children. We defined a categorical variable that equals one if all of the children in the household aged 7 to 14 years old attend school. We also defined a categorical variable that equals one if any of the children in the household aged 7 to 14 years old works. The social network variable for the head of household/spouse outcomes was defined using data on people older than 14 years of age, while in children's regressions, the social network variable was constructed using data on people aged between 7 and 14 years old. Annex 1 contains a detailed description of all of the dependent variables.

Public Interventions

We addressed the second question by estimating the following linear regressions for indigenous and non-indigenous households in urban and rural areas:

$$\ln(Exp_{ij}) = X_{ij}'\mathbf{b} + \mathbf{1} PP_{ij} + \mathbf{e}_{ij} \quad (2)$$

Given that family welfare is highly correlated with consumption, we proxied welfare at the household level using $\ln(Exp_{ij})$, which is the log of per capita household expenditures of household i living in municipality j . Furthermore, X_{ij} is the same vector of the household's socioeconomic characteristics as in the economic outcome regressions; PP_{ij} is a dummy variable equal to one if the household benefited from the public policy interventions, and \mathbf{e}_{ij} is an error term that we assume to be normal.⁵

The public policies that we analyzed were the Basic Health Insurance (BHI) and Bonosol-Bolivida programs, which are the only programs on which we had information. The BHI program seeks to reduce infant and maternal mortality at birth and provides insurance coverage for the main illnesses experienced by the population. The Bonosol-Bolivida program consists of an annual pension benefit of approximately US\$60 paid out to all Bolivians aged 65 or older.

⁴ All estimations have robust standard errors and were adjusted according to the size of the municipality. The estimations were performed for the whole population, for indigenous households only, and separately for urban and rural households.

⁵ We controlled for heteroskedasticity and municipality fixed effects in these regressions and reported robust standard errors.

III - DATA

The household data that we used in this study comes from the 2001 round of Bolivia’s national household survey (MECOVI), which is administered by the National Statistical Institute (INE) during the months of November and December of each year. MECOVI is a nationally representative survey that collects detailed data on the characteristics of every person in the households. The survey interviewed 5,845 households that included 25,166 individuals.

Because the MECOVI survey is not representative at the municipality level, we constructed the measure of the social network of the household, as well as all municipal-level variables, using information from the Bolivian census, which was administered by INE in 2001. The social networks measure summarizes the product of the quantity and the quality of the social networks. The quantity of the social network for each household was calculated as the fraction of the municipality’s population that speaks the same language as the household head. The quality of the social network was defined as the average value of the dependent variable being analyzed, for the language group in the municipality. That is,

$$\bar{Y}_{jk} = \sum_{i=1}^N \frac{Y_{ijk}}{N}$$

where Y_{ijk} is the relevant outcome for household i speaking language k living in municipality j , and N is the total number of households at the municipality speaking language k .⁶

According to the census, Bolivia has a population of 8,274,325 people, 62 percent of whom living in urban areas. The country is divided into 314 municipalities, though only 211 municipalities were covered by the MECOVI survey. In our study, we analyzed those municipalities that were covered both by the census and the MECOVI survey. The final merged database contained household-level information constructed from MECOVI and municipal controls constructed from the census.

IV: INCOME PROFILE

This section presents a descriptive analysis of the composition of the income and income-generating activities of indigenous households compared with those of non-indigenous households in both rural and urban areas.⁷ Notwithstanding the fact that most of Bolivia’s population is indigenous and poor, very few studies have analyzed the circumstances of the indigenous population and their economic opportunities. A noteworthy exception is Hall and Patrinos (2006), which found that over the last 15 years indigenous communities have benefited from increasing coverage of basic services and greater access to education, health, and other public services. Nonetheless, significant gaps in human development remain between the indigenous and non-indigenous populations, as the indigenous have less access to work, earn less, and have worse health and morbidity indicators.

⁶ The language spoken by the household head defines the language of the household. If a household head speaks more than one language, then main language spoken and mother tongue are considered to define the language of the family.

⁷ Since most of the indigenous are poor, the more appropriate comparison group would be that of the poor non-indigenous. However, due to the small sample size of this group, this analysis was sometimes not feasible. We decided to compare indigenous families with non-indigenous families.

Table 2: Extreme Poverty, Poverty, and Consumption by Area and Ethnicity

	INDIGENOUS			NON-INDIGENOUS		
	Extreme poverty	Poverty	Av. Pc cons.	Extreme poverty	Poverty	Av. Pc cons.
National	0.517	0.800	193	0.212	0.541	408
Rural	0.644	0.865	137	0.394	0.709	207
Urban	0.269	0.672	303	0.162	0.494	464

Source: Own calculations based on MECOVI 2001. Consumption measured in Bolivianos per month

As Table 2 above reveals, poverty (and extreme poverty) rates are significantly higher, and average consumption is lower, among indigenous than among non-indigenous people in both rural and urban areas. Poverty rates are much higher in rural areas for both groups, yet the scope of the problem is alarming among the indigenous with almost two out of every three indigenous rural residents being extremely poor and almost nine of every ten being poor. This is correlated with the fact that the average rural consumption of an indigenous household (137 Bolivianos per month) is equivalent to about 66 percent of the mean consumption of a non-indigenous rural family (207 Bolivianos per month).

Since income and consumption are strongly correlated, it is not surprising that we also found large differences when comparing average incomes. In Bolivia, mean per capita income in indigenous households is about 300 Bolivianos per month compared with 480 Bolivianos in non-indigenous households (Table 3).

Table 3: Income by Ethnicity and Area

	Indigenous	Non-indigenous	Indigenous/ Non-indigenous
Average Monthly Income P/Capita			
Rural	190	259	0.73
Urban	511	543	0.94
Total	298	482	0.62

Source: Authors' estimations using MECOVI (2001).

These large differences in consumption and income may be correlated with differences in the types of employment among these groups and/or to worker characteristics. Table 4 (below) describes the economic activities undertaken by indigenous and non-indigenous heads of households, while Table 5 reveals the income composition and average incomes by source of these two groups of households.

According to our data, the non-indigenous are employed in higher-quality jobs in both rural and urban areas. Job quality is defined by two criteria - income and stability. Jobs that earn higher incomes are considered to be of better quality, as are jobs with worker benefits and stability. In this paper, we consider formal, waged, and non-agricultural jobs to be of higher quality than those

in the informal, self-employment, and agricultural sectors (see Table 5)

As Table 4 reveals, more indigenous than non-indigenous workers are employed in the informal sector in both rural and urban areas. On average, about 50 percent more indigenous heads of households are employed in the informal sector than non-indigenous heads of household (78.9 compared with 53.5 percent). Furthermore, a higher proportion of non-indigenous families are headed by waged workers in both rural and urban areas, while a greater share of indigenous households is self-employed than non-indigenous households.

Table 4: Economic Opportunities by Ethnicity and Area

	Indigenous	Non-Indigenous	Total
Head Household Employed (%)			
Rural	96.9	95.3	96.4
Urban	86.4	81.7	82.8
Total	92.8	84.2	87.7
Head hold. Employed-Informal Sector (%)			
Rural	92.4	82.2	89.3
Urban	55.9	45.9	48.5
Total	78.9	53.5	64.4
Occupation - Head of Household (%)			
Rural			
Waged worker	9.6	32.3	15.6
Self-employed	87.5	62.3	80.9
Employer	1.6	4.6	2.4
Unpaid worker	1.3	0.8	1.1
Urban			
Waged worker	47.9	56.4	53.6
Self-employed	46.3	35.1	38.8
Employer	3.0	5.8	4.8
Unpaid worker	2.8	2.8	2.8
Head Household Migrated (%)			
Rural	7.4	15.9	10.0
Urban	10.9	9.2	9.7
Total	8.8	10.5	9.8

Source: Authors' estimates using MECOVI (2001).

A significantly higher proportion of non-indigenous heads of household have migrated to rural areas during the last five years, while indigenous heads of households are more likely to have migrated to urban areas.

The pattern that we observed in household income sources (Table 5 below) is consistent with the sectors in which they are most likely to be employed. As discussed above, the average monthly income of an indigenous household is equivalent to about 50 percent of the monthly income of a non-indigenous family. This gap is mainly due to the fact that the largest source of income in non-indigenous households (47.4 percent) is non-agricultural wages, which are higher—on average—than income from self-employment and from agricultural activities. In other words, a higher share of non-indigenous household income comes from the highest-paying occupations. The most important source of income for indigenous families on average is agricultural self-employment, followed closely by non-agricultural wages. However, patterns are strikingly different in urban and rural areas.

Table 5: Income Patterns and Average Monthly Household Income (in Bolivianos)

	All Population			Urban			Rural		
	Indigenous	Non-Indigenous	Non-Indigenous Poor	Indigenous	Non-Indigenous	Non-Indigenous Poor	Indigenous	Non-Indigenous	Non-Indigenous Poor
Labor Income	84.4	82.3	88.6	82.0	80.0	86.7	87.3	91.2	93.0
Wage Agricultural	0.6	0.9	1.9	0.7	0.3	0.7	0.5	3.4	4.8
Wage Non-Agricultural	29.6	47.4	44.7	44.6	52.5	52.3	12.0	28.0	27.1
Self-emp. Agricultural	30.5	11.5	17.4	1.8	1.6	2.3	63.9	49.6	52.5
Self-emp. Non-Agricultural	23.5	21.9	23.3	34.5	25.1	30.3	10.8	9.5	7.3
Wage Child Labor	0.2	0.5	1.2	0.2	0.5	1.2	0.1	0.7	1.3
Non Labor Income	15.6	17.7	11.4	18.0	20.0	13.3	12.7	8.8	7.0
Total Monthly Income	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	All Population			Urban			Rural		
	Indigenous	Non-Indigenous	Non-Indigenous Poor	Indigenous	Non-Indigenous	Non-Indigenous Poor	Indigenous	Non-Indigenous	Non-Indigenous Poor
Ingreso Laboral	1,019	1,987	1,149	1,382	2,181	1,240	612	1,239	935
Wage Agricultural	9	15	21	11	10	9	6	33	50
Wage Non-Agricultural	503	1,362	677	821	1,608	826	146	416	329
Self-emp. Agricultural	128	148	156	17	45	35	252	547	439
Self-emp. Non-Agricultural	378	454	278	530	511	353	207	235	103
Wage Child Labor	2	7	17	3	7	18	1	8	14
Ingreso No Laboral	170	448	103	265	537	124	64	106	54
Ingreso Total Mensual	1,189	2,435	1,252	1,647	2,718	1,365	676	1,345	990

Source: Mecovi, 2001

In urban areas, the main source of income for both indigenous and non-indigenous families is non-agricultural wages, followed by non-agricultural self-employment, whereas in rural areas

agricultural self-employment is the main income-generating activity in both kinds of household. Within urban and rural areas, the contribution of different income sources to total household income is similar. However, we found that indigenous families receive lower average incomes within each type of activity.

The differences in employment outcomes and average wages between indigenous and non-indigenous households may be due to differences in worker characteristics (see Table 6 below). However, neither labor market experience (proxied by age) nor female participation seem to be the cause of these differences, since non-indigenous heads of households are on average younger (have less experience) than their indigenous counterparts and an almost equal proportion of the indigenous and non-indigenous labor force is comprised of men.

Education, on the other hand, seems to play an important role. Non-indigenous heads of households have almost four additional years of education on average than indigenous household heads, with the largest differences occurring in urban areas. Our empirical analysis in Part V will reveal the impact of education once we controlled for other characteristics.

Table 6: Labor Force Characteristics by Ethnicity and Area

	Indigenous	Non-indigenous	Total
Age - Head of Household			
Rural	46.2	43.0	45.0
Urban	44.5	43.2	43.5
Total	45.6	43.2	44.0
Education - Head of Household (Years)			
Rural	4.0	5.1	4.4
Urban	6.1	9.5	8.8
Total	4.7	8.5	7.2
Male workers (% total workers)			
Rural	0.49	0.52	0.5
Urban	0.47	0.49	0.48
Total	0.48	0.49	0.49

Source: Authors' estimations using MECOVI (2001).

V - EMPIRICAL RESULTS

This section is divided into four sub-sections. First, we summarize the effects of household characteristics on the various employment outcomes that we analyzed both for heads of households and for their spouses. We continue by summarizing the effects that social networks have on adult employment and on other non-employment outcomes (children's work/schooling, access to financial services, and access to modern health services). The last sub-section analyzes the welfare effects of the two public policy programs described above. Annex Tables 1.1 to 1.16 present all of our empirical results in statistical form.

HOUSEHOLD CHARACTERISTICS AND EMPLOYMENT OUTCOMES

In this section, we investigate the relation between household characteristics and the economic outcomes of heads of households and their spouses for all households and for just indigenous households considering urban and rural families separately. Our results are similar to others found in the labor market literature.

Heads of Households. Gender is an important determinant of economic opportunities. Female heads of households are less likely to be employed in general than male heads, and they are more likely to be self-employed, work in the informal sector, and to work in non-agricultural activities. As Annex Table 1.8 reveals, female heads of households are 10 percent less likely to be employed than their male counterparts. Although on average female heads of households are more likely to migrate than males, the gender of the head of the household does not affect the likelihood of migration among indigenous households, which may be due to different behavior due to ethnic differences.¹

We found that labor market experience (proxied by age) has a positive effect on employment outcomes and that the effect is similar among indigenous families alone (see Annex Tables 1.8 and 1.9 respectively). Older heads of households are more likely to be employed in general, are more likely to be employed in the formal vs. the informal sector, and more likely to be self-employed. Furthermore, labor market experience increases the likelihood that heads of households will be employers.

Education is a key determinant in accessing higher-quality jobs for all households, including the indigenous. We found that an additional year of education of the head of the household increased the likelihood that he or she would be employed in the formal sector and reduced the likelihood of self-employment.² Furthermore, among indigenous families, higher educational attainment is correlated with a higher probability that the head of the household works in the non-agricultural sector.³

Geographic location is an important determinant of employment outcomes. Rural location is associated with lower-quality employment in Bolivia, which is similar to patterns observed in other Latin American countries. Heads of households who live in rural areas, including indigenous heads, are more likely to be employed in the informal sector, to work in agriculture, and be self-employed (and are less likely to be employed in the formal sector and in non-

¹ The lack of statistical significance could be due to the smaller sample size.

² We found similar results when we used average household adult education as a control variable.

³ This result is true and of similar magnitude with both measures of education: years of education of the household head, and average education of adults in the household.

agricultural activities).

Living in Bolivia's plains has mixed effects on employment outcomes. We found that heads of household living in the plains' regions of Bolivia are less likely to be employed in agriculture than those living in other regions. Furthermore, indigenous household heads are more likely to be employed in the informal sector and are more likely to have migrated to the plains' regions. This is probably due to the fact that the economies of these regions (Santa Cruz, Beni and Pando) have been revitalized in recent years by new investments (both private and public) (Hall and Patrinos, 2005). Furthermore, Hall and Patrinos found that, even after controlling for household and other characteristics, residents of Bolivia's plains regions are 9 percent less likely to be poor than residents of other areas of the country.

In Bolivia, home ownership is associated with a higher probability that the head of the household will be employed in agriculture rather than non-agricultural activities and that he/she is self-employed. This probably reflects the effect of owning land for agricultural production. We also find that among families that own their home—including indigenous families—the household head is less likely to migrate.

Household infrastructure is correlated with some economic outcomes. Access to running water, telephone service, a toilet, and electricity are associated with higher-quality employment. This is due to the probable correlation between the wealth level of the family and higher-quality jobs and better infrastructure.

In general, we found that larger family size has negative effects on the likelihood and quality of employment. A family's demographic composition is correlated with their economic outcomes, and some of these effects differ along ethnic lines. The presence of young children (aged 5 or younger) does not affect the employment outcomes of non-indigenous heads of households; yet having a young child reduces the probability of being employed among the indigenous. The presence of older children (aged 6 to 18 years) in the household is correlated with a higher likelihood of employment among the indigenous and with a lower likelihood of migration in general.

The presence of additional adults in the household is correlated with lower-quality employment in both kinds of households. Having more members between the ages of 19 and 60 is correlated with a higher likelihood of being employed in agriculture (and with more self-employment), while the presence of an elderly family member (aged 61 or older) is correlated with lower employment in general, and more self-employment. The presence of an elderly member also reduces the likelihood of migration, except among the indigenous.

Being indigenous is correlated with lower-quality employment even after controlling for other characteristics, regardless of the ethnic group to which an indigenous head of the household belongs. When all households were considered, we found that, if the head of the household's main language is Aymara, Quechua, or another native language (rather than Spanish), then he or she is more likely to be employed in the informal sector, to work in agriculture, and to be self-employed. Within indigenous families (Annex Table 1.9), Quechua households are slightly better off in terms of quality of employment, as they are more likely to be employers and less likely to be self-employed. Being indigenous and bilingual, in other words, able to speak both an indigenous language and Spanish, did not affect employment outcomes.

Spouses. Education increased the likelihood and quality of employment for the spouses of household heads (see Annex Table 1.10), who were more likely to be employed on average and more likely to be employed in the formal sector with each additional year of education. We

found no significant effects of education on the employment outcomes of indigenous wives.

Spouses with more labor market experience (measured by age) are more likely to be employed and to hold high-quality jobs in Bolivia, including those in indigenous families. Spouses are more likely to be employed on average with each additional year of experience, and they are more likely to be employed in higher-quality jobs in the formal sector and in non-agricultural activities.

The likelihood of a spouse being employed is also affected by the characteristics of the head of the household. In general, spouses are more likely to work in agriculture if their husband is older. Among indigenous families, wives with older husbands (heads of households) are more likely to work. The education of the head of the household had no significant effects on the likelihood of their spouse's employment.⁴

Our results revealed that spouses were more likely to work if they lived in a rural rather than an urban area but were more likely to work in lower-quality jobs (in the informal sector or in agricultural activities), which is similar to our findings about their husbands. Spouses are less likely to work in agriculture if they live in the plains regions of Bolivia, which is similar to our findings about heads of households. Generally, for spouses, home ownership is correlated with a greater likelihood of being employed in agriculture for both indigenous and non-indigenous households.

Family demographic composition affects the likelihood that a spouse will work. The presence of small children (younger than 6 years of age) reduces the likelihood that indigenous spouses will be employed (in urban areas only) and is positively correlated with the likelihood that they will work in agriculture. The presence of school-aged children (between 6 and 18 years) is negatively correlated with the likelihood of a spouse being employed in the formal sector, both in indigenous and all households.

We find that the presence of older family members (aged 61 and older) is positively correlated with the likelihood of the spouse working in the formal sector. However, when only indigenous families are considered, living with an elderly family member is correlated with a lower probability of employment for spouses.

Spouses from any indigenous group are more likely to be employed than non-indigenous spouses but they are more likely to work in lower-quality jobs (informal sector or agricultural employment) than non-indigenous wives. Within the different kinds of indigenous families, Quechua spouses are less likely to work in general but more likely to work in the formal sector than spouses from Aymara households. Spouses who are indigenous and bilingual—in other words, speak Spanish as well as a native indigenous language—have a higher probability of being employed even than non-indigenous spouses - Social Networks and Economic Outcomes.

The effect of social networks on the different economic outcomes is summarized below in Table 7. We found that social networks are an effective channel through which households gain access to employment opportunities. Heads of households were almost 6 percent more likely to be employed if they had access to a larger and better social network (in terms of its quantity and quality).

However, social networks do not appear to facilitate access to higher-quality jobs, since having access to a network increases the likelihood that families work in the informal sector, in

⁴ An exception is for rural non-indigenous families, where the head of the household's education is negatively correlated with the spouse's employment probability.

agriculture, and in self-employment, all of which yield relatively lower incomes than non-agricultural, formal sector jobs (Table 5 above). Results are similar for indigenous households and in urban and rural areas.

Among indigenous families, access to a larger and better social network affects the likelihood that the head of the household will migrate. Indigenous heads of households are less likely to migrate to an urban area if they have more access to a social network, whereas the social network effect on migration to a rural area is positive in the case of indigenous households.

Table 7: Effects of Social Networks on Economic Outcomes

SUMMARY OF RESULTS - HEADS OF HOUSEHOLDS

Outcome	ALL POPULATION No. Obs.		ONLY INDIGENOUS No. Obs.	
NATIONAL				
Employed	0.056*	5,814	0.022	2,932
Formal Sector	-0.276***	5,208	-0.228***	2,701
Agriculture	0.310***	5,208	0.469***	2,701
Employer	0.363	5,208	-0.053	2,701
Self-employed	0.433***	5,208	0.369***	2,701
Head of HH Migrated	0.034	5,814	0.432	2,932
URBAN				
Employed	0.189**	2,945	0.159	1,012
Formal Sector	-0.148*	2,475	-0.352*	866
Agriculture	0.069***	2,475	0.151**	866
Employer	0.812*	2,475	0.227	866
Self Employed	0.088	2,475	-0.153	866
Head of HH Migrated	0.159	2,945	-0.897**	1,012
RURAL				
Employed	-0.003	2,869	0.008	1,920
Formal Sector	-0.111***	2,733	-0.083**	1,835
Agriculture	0.178***	2,733	0.180**	1,835
Employer	0.138	2,685	-0.179	1,787
Self Employed	0.268***	2,733	0.230***	1,835
Head of HH Migrated	0.309	2,869	0.624**	1,920

Summary of Annex Tables 1.8 and 1.9

Social networks also affect the economic choices made by spouses, who were more likely to be employed if they had access to a larger and better social network (Table 8). The effects are similar for all households, among the indigenous households alone, and in both rural and urban areas. As with our findings on heads of households, the social network facilitates employment among spouses, although, again, these spouses are more likely to work in the informal sector and in agriculture.

Table 8: Effects of Social Networks on Economic Outcomes (Spouses)

	ALL POPULATION	ONLY INDIGENOUS
NATIONAL		
Employed	0.405***	0.495***
Formal Sector	-0.129*	-0.083
Agriculture	0.239***	0.598**
URBAN		
Employed	0.303**	0.580**
Formal Sector	0.075	-0.179
Agriculture	0.034**	0.261**
RURAL		
Employed	0.226**	0.245***
Formal Sector	-0.005	-0.000
Agriculture	0.428**	0.540**

Summary of Annex Tables 1.10 and 1.11

These findings reveal that the positive role of social networks (as measured above) must be interpreted with some caution. Although social networks facilitate access to employment, they do not necessarily provide households with a way out of poverty since they do not seem to increase the likelihood of employment in sectors of the economy that pay higher wages. This could in part be due to the quality of the networks. The type of jobs held by the members of the network may be a key factor.

Social Networks and Other Outcomes

Social networks may affect other types of family decisions and outcomes, in addition to those related to the labor market discussed above. We also analyzed how social networks affect household decisions regarding children's human capital, participation in financial services, and access to modern health services, controlling for the household's socioeconomic characteristics.

Table 9 below summarizes these effects.⁵

⁵ Complete results of children's regressions are presented in Annex Tables 1.14 and 1.15 so we limit discussion of social network effects here.

Children's Outcomes. Our analysis focused on the decisions about whether to send school-aged children to school and/or to send them to work in market activities. We defined two dependent variables relating to children's human capital. One was a dummy variable that equals one if all school-aged children in the household attend school (which we term "full household attendance" or "full attendance") and the other was a child labor dependent variable, which equals one if any child aged 14 or younger in the household worked at least 20 hours per week in market activities.

Table 9: Effects of Social Networks on Other Outcomes by Geographic Area

	ALL POPULATION	ONLY INDIGENOUS
NATIONAL		
Children work	0.1594	0.154
Children attend school	0.0638***	0.108**
Financial Services	-0.020	-0.053
Access Modern Health	0.398	1.154**
URBAN		
Children work	-0.322	0.3391
Children attend school	0.065***	0.110**
Financial Services	0.116	0.057
Access Modern Health	0.023	-0.441
RURAL		
Children work	0.1259	-0.1006
Children attend school	0.160***	0.1118
Financial Services	-0.032	-0.037**
Access Modern Health	0.391	1.262*

Summary of Annex Tables 1.12 – 1.15

We found that social networks did not affect the likelihood that a child works but that access to larger and better social networks increases the likelihood that all children in the household are enrolled in school. These findings were true for all households, for indigenous families, and for both rural and urban areas.⁶ This finding reveals that social networks provide an important mechanism through which children's human capital is increased, which will have important indirect effects on indigenous family income in the long term.

Financial Markets We defined a household as having access to financial markets if the family reported making a credit payment or receiving interest from deposits in a commercial bank or

⁶ The exception is indigenous rural households on whom social networks seem to have no effect. The lack of statistical significance could also be due to the smaller size of this sample.

private financial funds. Our findings revealed that, in most households, access to a larger and better social network does not increase their access to financial markets. In fact, we found that, among rural indigenous households, having access to a larger and better social network is negatively correlated with a household's access to financial services.

Modern Health Services Modern health services is a dummy variable that takes the value of 1 if any of the women in the household gave birth during the previous 12 months and if they were assisted by a modern health providers (a doctor, nurse, or any other health professional). The variable is 0 if the woman received help from any other person or if she did not seek medical assistance. The effect of social networks is summarized above in Table 9, while detailed results for all of the determinants of access to modern health are found in Annex Table 1.12 and Annex Table 1.13 for all households and for indigenous families respectively.

We found that having access to a social network is positively correlated with a household's access to modern health services for indigenous families only, which reveals another positive role that networks play in relation to households' human capital. This finding suggests that social networks have positive effects on Bolivia's more vulnerable population in terms of their socioeconomic development, and that they may play a significant complementary role to the country's public health programs.

Public Policy Programs

We analyzed the effect of two public policies on the welfare of indigenous and non-indigenous households. One of the public programs that we studied was Bolivia's Basic Health Insurance program (BHI), whose objective is to reduce infant and maternal mortality at birth, as well as to reduce the risk, duration, and severity of the main causes of illness and death in the population. The program provides 76 free health services that address the main epidemiological problems of Bolivia, focusing particularly on maternity and child-related health problems. Although the program does not exclude anyone, evaluations of the program have found that it is targeted towards lower-income families. To be able to use BHI services, an individual must obtain a membership card that allows him or her to access the benefits of the program. In practice, hospitals do not verify whether the patient has officially registered in the BHI program. If the patient suffers from a medical condition that is covered by the program, then he or she will receive treatment free of charge at public health clinics and hospitals.

The second program that we analyzed is the Bonosol-Bolivida program. Roughly 50 percent of the shares of capitalized state enterprises were endorsed to a collective capitalization fund. During the second half of 1997, an annual pension of US\$248 (called Bonosol) was paid from the dividends of this fund to all Bolivians older than 65 years. At the beginning of 1998 when a new government took office, the payments of this transfer stopped, both for financial and political reasons. However, by mid-1998, Bonosol was replaced by a less generous scheme, Bolivida, which consists of an annual pension of US\$60, and which began to pay out benefits in December 2000.

We analyzed the effects of these two public programs on indigenous and non-indigenous families' per capita expenditures in urban and rural areas, after controlling for household characteristics. As described above, the dependent variable was household welfare measured as expenditure per capita, and our control variables included: (i) a dummy variable if a female is the head of the household; (ii) the age and education of the head of the household; (iii) the average education of adults in the household; (iv) a control for household location (rural and plains); (v) dummy variables for several household infrastructure characteristics as proxies for wealth (home

ownership and whether the house has running water, telephone service, a toilet, and electricity); and (vi) controls for the household's demographic composition.

Our variables of interest were the two public programs for which we had data in the MECOVI survey. The survey gathered data on whether any member of the household (aged 6 and older) had made use of the Basic Health Insurance program (BHI) and what proportion of household income came from the BONOSOL-BOLIVIDA program. Results can be found in Annex Tables 1.16 and 1.17 respectively.

We found that households where at least one member aged 6 years or older had used the BHI program during the previous year had lower welfare levels than those that had not. We did not interpret this finding as causality but rather as a reflection of the fact that it is the poor who usually make use of publicly provided health and education services. We found a negative correlation for both indigenous and non-indigenous families in both urban and rural areas.

We also found negative correlations between the share of household income from the BONOSOL-BOLIVIDA program and per capita household expenditures. Since the BONOSOL-BOLIVIDA transfer is of a fixed monetary amount, it plays a more significant role in the consumption of poorer households, which means that the variable is indirectly measuring income levels (a higher value of the variable implies lower household income). This simply reflects the fact that expenditure falls with income.

The remaining variables in the regressions confirmed the relationships between welfare and households' socioeconomic characteristics that we found in other empirical analyses.⁷ As Annex Table 1.16 reveals, non-indigenous households that are headed by women have lower per capita consumption than those headed by males. We found no correlation among indigenous families.

The age of the head of the household—which is a proxy for labor market experience—is positively correlated with per capita consumption, with similar effects for both indigenous and non-indigenous households. This suggests that the returns to labor market experience affect consumption the same way regardless of ethnicity. We found no correlation between welfare and the education of the head of the household, but we did find a positive relationship between the average education of adults in the household and household expenditures for both indigenous and non-indigenous families, which confirms the importance of education in improving welfare.

Indigenous and non-indigenous families that live in rural locations have lower per capita expenditures than their urban counterparts. This reflects the fact that poverty in Bolivia is concentrated in rural areas as in other poor countries. Living in Bolivia's plains regions, on the other hand, is positively correlated with household welfare, due to the fact that the plains regions enjoy better economic conditions than the rest of the country (see above).

As expected, better household infrastructure is positively correlated with family wealth. The only exception is home ownership in rural areas, where we found a negative correlation with welfare for indigenous households. This is probably due to ownership of agricultural land and agricultural activity, which is associated with higher poverty levels and lower wages (see Annex Table 1.7). We found that **[large]** family size is negatively correlated with welfare.

⁷ The results are similar in Annex Tables 1.16 and 1.17; we discuss only results from Annex Table 1.16.

VI - CONCLUSIONS

Our descriptive analysis has revealed that a greater proportion of indigenous households than non-indigenous households are employed in informal occupations and in agriculture, both of which yield lower incomes. This partly explains why indigenous households are poorer than non-indigenous ones. Another part of the explanation may lie in the fact that heads of indigenous households have four fewer years of education than non-indigenous heads, although our empirical analysis sheds light on the factors affecting employment (and other) outcomes once all characteristics are controlled for.

We found that, even after we controlled for factors such as gender, labor market experience, education, location, wealth, and family size, belonging to any of Bolivia's indigenous groups is correlated with lower-quality employment. If the mother tongue or main language spoken by a household head is Aymara, Quechua, or another native language, then he or she is more likely to be employed in the informal sector, work in agriculture, and be self-employed.

Education, labor market experience, and being a bilingual (if indigenous) facilitated high-quality employment for all household spouses, while the presence in the household of young children aged 5 years or younger reduced the likelihood of indigenous spouses being employed in urban areas. This suggests that public policy programs such as publicly funded pre-schools targeted to the indigenous population would help to increase female labor force participation among the indigenous population. These findings also reveal that in Bolivia, indigenous women benefit greatly from public education, which is consistent with the gender and ethnic bias found in other studies (see Zapata, Contreras, and Kruger, 2006).

One of this paper's main contributions is to provide new findings on the roles that social networks play in determining various economic outcomes. We found evidence that social networks are an effective channel through which heads of households and their spouses obtain access to employment opportunities, as they are more likely to be employed if they belong to a larger and better social network. However, social networks in Bolivia do not appear to provide access to high-quality jobs. Access to a larger and better social network is correlated with a higher likelihood that heads of households (and their spouses) will find employment in the informal sector, in self-employment, or in agriculture. This finding is consistent across ethnic lines and in both rural and urban locations.

We also found that access to a larger and better social network has a positive effect on the likelihood of full school attendance by all children aged 6 to 14 in the household and of access to modern health services among indigenous households. Thus, social networks do not necessarily provide an immediate way out of poverty in the sense that they do not facilitate employment in high-wage sectors. However, they confer other positive benefits in terms of education and health outcomes on the country's most vulnerable groups.

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Annex 1: Tables

Annex Table 1.1: Dependent Variables (MECOVI 2001)

Dependent Variables, MECOVI 2001		IMPACT OF PUBLIC POLICIES ON WELFARE
INCOME COMPOSITION	SOCIAL NETWORKS	
<u>Estimations for the head of the household:</u>	<u>Estimations for the head of the household:</u>	Mean per capita consumption
Household Head is an Immigrant (from another city or municipio within the country or from another country)	Household Head is an Immigrant (from another city or municipio within the country or from another country)	
Household Head worked last week for at least an hour in market oriented activities==1	Household Head worked last week for at least an hour in market oriented activities==1	
Household Head is a Self Employer==1	Household Head is a Self Employer==1	
Household Head is an Employer==1	Household Head is an Employer==1	
Household Head works in the Formal Sector==1 (1)	Household Head works in the Formal Sector==1	
Household Head works in Non-Agricultural Activities==1	Household Head works in Non-Agricultural Activities==1	
<u>Estimations for the Household Spouse:</u>	<u>Estimations for the Household Spouse:</u>	
Household Spouse worked last week for at least an hour in market oriented activities==1	Household Spouse worked last week for at least an hour in market oriented activities==1	
Household Spouse works in the Formal Sector==1 (1)	Household Spouse works in the Formal Sector==1	
Household Spouse works in Agricultural Activities==1	Household Spouse works in Agricultural Activities==1	
<u>Estimations for the Family</u>	<u>Estimations for the Family</u>	
	One or more children (aged between 7 and 14) work==1	
	All the children (aged between 7 and 14) go to school==1	
	The family uses Modern Health Services (2)	
	The family has access to traditional financial services (3)	

NOTES: (1) Following ILO 2002a and ILO 2002b we classified a worker as formal if he has signed a contract or if he has obtained a license or permission to develop his activity, or if he is

affiliated to the Pension System (AFP). We do not consider the number of people working in a firm as a measure of formality or informality.

(2) This variable is equal to 1 if any of the women in the household gave birth and if they were attended by a doctor or a nurse. The variable is equal to 0 if the person was attended for someone else or if was not attended.

(3) This variable is equal to 1 if the family has paid any mortgage quota, credit card quota, consumption credit quota or if the family has obtained any kind of loan from a commercial bank or from a Bank, or Financial Fund, or if the family received interest from deposits.

Annex Table 1.2: Independent Variables

Independent Variables	
<u>Variables</u>	<u>Source</u>
Female household head=1	MECOVI
Age of the household head	MECOVI
(Age of the household head)^2	MECOVI
Years of Education of the Household Head	MECOVI
Age of the household spouse	MECOVI
(Age of the household spouse)^2	MECOVI
Years of Education of the Household Spouse	MECOVI
Average Adult Education in the Household (1)	MECOVI
Rural Area==1	MECOVI
Plains==1 (2)	MECOVI
Own house==1	MECOVI
Piped water==1	MECOVI
Telephone Service (Land line or Cellular) ==1	MECOVI
Bathroom within the house==1	MECOVI
Electricity within the house==1	MECOVI
Number of members aged 0 to 5 years old	MECOVI
Number of members aged 6 to 18 years old	MECOVI
Number of members aged 19 to 60 years old (including parents)	MECOVI
Number of members older than 60 years old (including parents)	MECOVI
Bathroom within the house==1	MECOVI
Bilingual (3)	MECOVI
Social Network (4)	CENSO

Notes: (1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando;

(3) A person is defined as bilingual if he is indigenous and also speaks Spanish;

(4) The Social network is equal to: $CA^*(\text{Average outcome of the the language group } k \text{ in municipio } j)$, where CA is the percentage of people that speaks the same language as the individual.

Annex Table 1.3: Mean Characteristics of Indigenous and Non-indigenous Households

	All Population		Urban		Rural	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
<i>Household Characteristics:</i>						
Average Adult Education in the Household (1)	6.20	9.46	8.09	10.61	4.08	5.02
Average number of members aged 0 to 5 years old	0.66	0.71	0.59	0.65	0.75	0.94
Average number of members aged 6 to 18 years old	1.31	1.33	1.34	1.23	1.28	1.72
Average number of members aged 19 to 60 years old (including parents)	1.88	2.01	2.09	2.05	1.63	1.87
Average number of members older than 60 years old (including parents)	0.30	0.21	0.24	0.20	0.36	0.23
<i>Asset ownership:</i>						
Own house	0.50	0.34	0.35	0.29	0.66	0.53
Piped water	0.60	0.80	0.84	0.91	0.33	0.37
Telephone Service (Land line or Celular)	0.16	0.37	0.30	0.46	0.01	0.02
Bathroom within the house	0.57	0.89	0.76	0.97	0.36	0.59
Electricity within the house	0.63	0.81	0.94	0.94	0.28	0.29

Notes: (1) Persons aged 15 years or more.

Annex Table 1.4: Mean Characteristics of Indigenous and Non-indigenous Household Heads and Spouses

	All Population		Urban		Rural	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
<i>Characteristics of the Households Heads:</i>						
Female	0.22	0.21	0.24	0.23	0.19	0.12
Age	45.53	41.37	44.16	40.81	47.06	43.53
Average years of Education	6.19	9.51	7.92	10.69	4.25	4.96
Average percentage of Immigrant from another city or municipio, within the country or from another country	0.11	0.13	0.12	0.12	0.10	0.17
<i>Characteristics of the Households Spouses:</i>						
Female	0.99	0.98	0.98	0.98	1.00	0.99
Age	28.05	24.73	27.12	24.26	29.09	26.52
Average years of Education	3.03	5.74	4.21	6.51	1.71	2.78
<i>Household Heads Labor Characteristics:</i>						
Average percentage of employed	0.90	0.84	0.84	0.81	0.96	0.95
Average percentage of employed on the formal sector (1)	0.29	0.44	0.47	0.53	0.11	0.15
Average percentage of employed on Non-Agricultural Activities	0.57	0.82	0.94	0.96	0.21	0.37
Average percentage of employers	0.03	0.06	0.04	0.06	0.02	0.05
Average percentage of self-Employers	0.63	0.41	0.42	0.34	0.83	0.63
<i>Household Spouses Labor Characteristics:</i>						
Average percentage of employed	0.68	0.55	0.60	0.56	0.78	0.53
Average percentage of employed on the formal sector	0.19	0.39	0.38	0.47	0.03	0.10
Average percentage of employed on Non-Agricultural Activities	0.63	0.92	0.94	0.99	0.37	0.67

NOTES: (1) Following ILO 2002a and ILO 2002b we classified a worker as formal if he has signed a contract or if he has obtained a license or permission to develop his activity, or if he is affiliated to the Pension System (AFP). We do not consider the number of people working in a firm as a measure of formality or informality.

Annex Table 1.5: Pair wise Correlations: HH Demographic and Economic Variables

	Female HH head	Age of the HH head	Years of Education of the HH Head	Age of the HH spouse	Years of Education of the HH Spouse	Average Adult Education in the HH (1)	Number of members aged 0 to 5 years old	Number of members aged 6 to 18 years old	Number of members aged 19 to 60 years old (w/ parents)	Number of members older than 60 years old (w/ parents)	Plains (2)	Rural Area	Own house	Piped water	Telephone Service (Land line or Celular)	Bathroom within the house	Electricity within the house	HH Heads employed	HH Heads employed on the formal sector (3)	HH Heads employed on Non-Agricultural Activities	HH Spouses employed on Non-Agricultural Activities	HH Spouses employed on the formal sector (3)	HH Spouses employed on Non-Agricultural Activities	The family uses Modern Health Services (4)	The family has access to traditional financial services (5)	The family has access to non-traditional financial services (6)	All the children (aged between 7 and 14) go to school	One or more children (aged between 7 and 14) work		
Female HH head	1																													
Age of the HH head	0.1366*	1																												
Years of Education of the HH Head	-0.1443*	-0.3528*	1																											
Age of the HH spouse	-0.5859*	0.2485*	-0.0528*	1																										
Years of Education of the HH Spouse	-0.3497*	-0.2424*	0.5486*	0.3040*	1																									
Average Adult Education in the HH (1)	-0.0335*	-0.2687*	0.8863*	-0.1063*	0.5782*	1																								
Number of members aged 0 to 5 years old	-0.1441*	-0.3371*	-0.0046	0.0426*	0.1288*	-0.0597*	1																							
Number of members aged 6 to 18 years old	-0.0804*	-0.0532*	-0.0755*	0.1866*	0.0176	-0.0653*	0.1734*	1																						
Number of members aged 19 to 60 years old (w/ parents)	-0.2333*	-0.1674*	0.1222*	0.2967*	0.2679*	0.2298*	0.2202*	0.2701*	1																					
Number of members older than 60 years old (w/ parents)	0.0369*	0.6582*	-0.2337*	0.2658*	-0.1577*	-0.2333*	-0.2000*	-0.2133*	-0.3699*	1																				
Plains (2)	-0.0416*	-0.0683*	0.0562*	-0.0148	0.1223*	0.0869*	0.0857*	0.0906*	0.0749*	-0.0548*	1																			
Rural Area	-0.0794*	0.0726*	-0.4031*	0.0605*	-0.2981*	-0.4771*	0.0874*	0.0159	-0.1320*	0.0641*	-0.1124*	1																		
Own house	-0.0272*	0.2233*	-0.2407*	0.1369*	-0.1385*	-0.2513*	-0.0256*	0.0621*	0.0143	0.1196*	-0.0452*	0.2325*	1																	
Piped water	0.0880*	-0.0314*	0.3137*	-0.0296*	0.2117*	0.3758*	-0.0843*	-0.0291*	0.0978*	-0.0432*	-0.0227*	-0.4944*	-0.1667*	1																
Telephone Service (Land line or Celular)	0.0408*	0.0477*	0.4228*	0.0314*	0.3440*	0.4844*	-0.1077*	-0.0459*	0.1651*	0.0041	0.0477*	-0.3933*	-0.0681*	0.3009*	1															
Bathroom within the house	-0.0006	-0.0517*	0.3508*	-0.0109	0.2587*	0.4126*	-0.0499*	-0.0056	0.1197*	-0.0554*	0.2711*	-0.3786*	-0.1710*	0.3705*	0.3041*	1														
Electricity within the house	0.0603*	-0.0611*	0.4141*	-0.0490*	0.2909*	0.4877*	-0.0979*	-0.0206	0.1098*	-0.0551*	0.0097	-0.6228*	-0.2236*	0.5763*	0.3363*	0.3984*	1													
HH Heads employed	-0.2075*	-0.2069*	-0.0328*	0.0956*	0.0643*	-0.0825*	0.1112*	0.1049*	0.1193*	-0.2179*	-0.0242*	0.1836*	0.0153	-0.1161*	-0.1212*	-0.0842*	-0.1384*	1												
HH Heads employed on the formal sector (3)	-0.0264*	-0.1047*	0.4405*	-0.0284*	0.3185*	0.4600*	-0.0658*	-0.0279*	0.0936*	-0.1138*	0.0327*	-0.3885*	-0.1488*	0.2911*	0.3205*	0.2555*	0.3727*	.	1											
HH Heads employed on Non-Agricultural Activities	0.0923*	-0.2005*	0.4381*	-0.1518*	0.3167*	0.4990*	-0.0410*	-0.0157	0.0937*	-0.1814*	0.1386*	-0.6575*	-0.3197*	0.4174*	0.3125*	0.3614*	0.5738*	.	0.4757*	1										
HH Heads employers	-0.0143	0.0244*	0.0786*	0.0095	0.0598*	0.0758*	-0.0182	-0.0004	-0.0018	0.0152	0.0325*	-0.0730*	-0.0094	0.0755*	0.1163*	0.0948*	0.0634*	.	0.0710*	0.0091	1									
HH Heads self-Employers	0.0712*	0.2239*	-0.3912*	0.0761*	-0.2678*	-0.3965*	0.0008	0.0356*	-0.0563*	0.1579*	-0.1189*	0.3803*	0.2731*	-0.2386*	-0.1971*	-0.2465*	-0.3440*	.	-0.3712*	-0.5590*	-0.2363*	1								
HH Spouses employed	0.0504*	0.0417*	-0.0405*	0.0889*	-0.0385*	-0.0454*	-0.0590*	0.0474*	0.0183	-0.0371*	-0.1612*	0.1576*	0.0898*	-0.0792*	-0.0293*	-0.1157*	-0.1021*	0.1078*	-0.0841*	-0.1752*	-0.0185	0.1554*	1							
HH Spouses employed on the formal sector (3)	0.0473*	-0.0522*	0.4446*	-0.0539*	0.5058*	0.5136*	-0.0813*	-0.0791*	0.1515*	-0.0609*	0.1082*	-0.4418*	-0.1451*	0.2643*	0.3983*	0.2632*	0.3485*	-0.0833*	0.4015*	0.4116*	0.0687*	-0.3369*	.	1						
HH Spouses employed on Non-Agricultural Activities	0.0182	-0.1267*	0.3413*	-0.1432*	0.3921*	0.4046*	-0.0332*	0.0345*	0.1427*	-0.1226*	0.2346*	-0.5151*	-0.2204*	0.3687*	0.2678*	0.3033*	0.3994*	-0.0513*	0.2772*	0.4956*	0.0840*	-0.3083*	.	0.3621*	1					
The family uses Modern Health Services (4)	0.0491*	0.3806*	-0.1222*	0.0941*	-0.1357*	-0.0920*	-0.2989*	-0.0127	-0.1172*	0.3215*	-0.0059	-0.0183	0.0722*	-0.0057	0.0555*	0.0168	-0.003	-0.1692*	-0.0001	-0.0696*	0.0248	0.0714*	0.0059	-0.0392	-0.0444	1				
The family has access to traditional financial services (5)	-0.0303*	-0.0323*	0.2177*	0.0354*	0.2123*	0.2398*	-0.0270*	0.0466*	0.1130*	-0.0577*	0.0214	-0.1855*	-0.0554*	0.1599*	0.2461*	0.1572*	0.1991*	0.0242*	0.1835*	0.1659*	0.0904*	-0.1062*	0.0275*	0.2255*	0.1730*	-0.0284	1			
The family has access to non-traditional financial services (6)	-0.0095	-0.0659*	0.2340*	0.0119	0.2258*	0.2607*	-0.0074	0.0540*	0.1136*	-0.0855*	0.0316*	-0.2004*	-0.0861*	0.1714*	0.2515*	0.1686*	0.2181*	0.0427*	0.2098*	0.1962*	0.0767*	-0.1310*	0.0266*	0.2562*	0.1888*	-0.0031	0.8190*	1		
All the children (aged between 7 and 14) go to school	0.0289	-0.0485*	0.1982*	-0.0430*	0.1342*	0.2199*	-0.0972*	-0.1603*	0.0036	-0.0165	0.0046	-0.1899*	-0.0796*	0.1704*	0.1178*	0.1514*	0.2450*	-0.0410*	0.1386*	0.1845*	0.0304	-0.1257*	-0.0024	0.1292*	0.1264*	-0.0059	0.1031*	0.1085*	1	
One or more children (aged between 7 and 14) work	0.0181	0.0559*	-0.1820*	0.0099	-0.1493*	-0.1912*	0.0181	0.1268*	-0.0236	0.0095	-0.0291	0.2174*	0.1004*	-0.1465*	-0.1230*	-0.1171*	-0.2098*	0.0949*	-0.1439*	-0.2384*	-0.0308	0.1598*	0.1304*	-0.1091*	-0.2062*	-0.0131	-0.0762*	-0.0700*	-0.2482*	1

NOTES:

- (1) Persons aged 15 years or more
- (2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.
- (3) Following ILO 2002a and ILO 2002b we classified a worker as formal if he has signed a contract or if he has obtained a license or permission to develop his activity, or if he is affiliated to the Pension System (AFP). We do not consider the number of people working in a firm as a measure of formality or informality.
- (4) This variable is equal to 1 if one or more family members got sick or if any of the women in the household gave birth and if they were attended by a doctor or a nurse. The variable is equal to 0 if the person was attended for someone else or if was not atendido.
- (5) This variable is equal to 1 if the family has paid any mortgage quota, credit card quota, consumption credit quota or if the family has obtained any kind of loan from a comercial bank or from a Bank, or Financial Fund, or if the family received interest from deposits.
- (6) Is equal to 1 if the traditional financial services is equal to 1 or if the family has obtained any loan from friends or "pasanaku". - HH: Household

Annex Table 1.6: Average Monthly Income (In Bolivianos.) Earnings and Employment Type

	All Population		Urban		Rural	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
Mean Labor Income	487	961	830	1,119	245	488
<i>By Type of Work:</i>						
Formal	1,263	1,884	1,289	1,932	1,136	1,238
Informal	285	500	504	544	189	413
<i>By gender:</i>						
Male	633	1,154	1,074	1,358	327	616
Female	322	681	559	798	151	248
<i>By sector:</i>						
Agricultural	163	554	262	819	157	493
Non-Agricultural	718	1,027	867	1,130	422	485
<i>Employee vs. Self Employed:</i>						
Wage Agricultural	675	751	914	1,043	479	527
Wage Non-Agricultural	1,050	1,486	1,104	1,566	813	843
Self-emp. Agricultural	310	951	335	1,371	308	867
Self-emp. Non-Agricultural	902	960	807	925	1,359	1,375
Trabajador Familiar sin remuneracion	0	0	0	0	0	0
<i>Child Labor</i>	12	75	64	106	3	37
<i>By years of Education:</i>						
Incomplete Primary	310	475	565	534	201	414
Complete Primary-Incomplete Secondary	586	627	774	661	349	460
Complete Secondary-Incomplete University	833	1,020	913	1,007	558	1,257
Complete University and more	1,861	2,717	1,993	2,768	1,138	1,499
Mean Non-Labor Income	59	77	108	92	19	18

Source: Mecovi, 2001

Annex Table 1.7: Income Patterns and Average Monthly Household Income

	All Population			Indigenous	Urban		Indigenous	Rural	
	Indigenous	Non-Indigenous	Non-Indigenous Poor		Non-Indigenous	Non-Indigenous Poor		Non-Indigenous	Non-Indigenous Poor
Labor Income	84.4	82.3	88.6	82.0	80.0	86.7	87.3	91.2	93.0
Wage Agricultural	0.6	0.9	1.9	0.7	0.3	0.7	0.5	3.4	4.8
Wage Non-Agricultural	29.6	47.4	44.7	44.6	52.5	52.3	12.0	28.0	27.1
Self-emp. Agricultural	30.5	11.5	17.4	1.8	1.6	2.3	63.9	49.6	52.5
Self-emp. Non- Agricultural	23.5	21.9	23.3	34.5	25.1	30.3	10.8	9.5	7.3
Wage Child Labor	0.2	0.5	1.2	0.2	0.5	1.2	0.1	0.7	1.3
Non Labor Income	15.6	17.7	11.4	18.0	20.0	13.3	12.7	8.8	7.0
Total Monthly Income	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Average Household Monthly Income (In Bolivianos)

	All Population			Indigenous	Urban		Indigenous	Rural	
	Indigenous	Non-Indigenous	Non-Indigenous Poor		Non-Indigenous	Non-Indigenous Poor		Non-Indigenous	Non-Indigenous Poor
Ingreso Laboral	1,019	1,987	1,149	1,382	2,181	1,240	612	1,239	935
Wage Agricultural	9	15	21	11	10	9	6	33	50
Wage Non-Agricultural	503	1,362	677	821	1,608	826	146	416	329
Self-emp. Agricultural	128	148	156	17	45	35	252	547	439
Self-emp. Non- Agricultural	378	454	278	530	511	353	207	235	103
Wage Child Labor	2	7	17	3	7	18	1	8	14
Ingreso No Laboral	170	448	103	265	537	124	64	106	54
Ingreso Total Mensual	1,189	2,435	1,252	1,647	2,718	1,365	676	1,345	990

Source: Mecovi, 2001

Annex Table 1.8: Bolivia: All Households - Probit regressions

Explanatory Variable	Dependent variable: Probability that the Household Head is					
	Employed	Employed in Formal Sector	Employed in Agriculture	An Employer	Self-employed	An immigrant (1)
Female household head	-0.099*** (0.018)	-0.065*** (0.018)	-0.079*** (0.027)	-0.009 (0.005)	0.120*** (0.024)	0.016** (0.008)
Age of the household head	0.012*** (0.002)	0.018*** (0.005)	-0.001 (0.004)	0.003** (0.001)	0.016*** (0.005)	-0.001 (0.003)
Years of Education of the Household Head	-0.000 (0.002)	0.016*** (0.004)	0.003 (0.005)	0.002 (0.001)	-0.015*** (0.003)	0.007*** (0.002)
Ave Adult Education in Household (2)	-0.004** (0.002)	0.013*** (0.003)	-0.023*** (0.005)	-0.001 (0.001)	-0.008* (0.004)	0.000 (0.003)
Rural Area	0.090*** (0.013)	-0.154*** (0.033)	0.392*** (0.040)	-0.001 (0.009)	0.145*** (0.043)	0.013 (0.015)
Own house	-0.009 (0.007)	-0.006 (0.031)	0.133*** (0.020)	-0.004 (0.005)	0.147*** (0.018)	-0.068*** (0.008)
Piped water	0.020 (0.016)	0.029 (0.031)	-0.046* (0.027)	0.016*** (0.005)	0.012 (0.028)	-0.018* (0.011)
Telephone Service (Land line or Celular)	0.006 (0.009)	0.067*** (0.018)	-0.018 (0.031)	0.028*** (0.009)	0.027 (0.017)	-0.036** (0.014)
Bathroom within the house	-0.010 (0.011)	0.048* (0.027)	-0.057** (0.028)	0.015** (0.006)	-0.034 (0.028)	0.011 (0.011)
Electricity within the house	-0.031** (0.013)	0.123** (0.051)	-0.113*** (0.031)	0.002 (0.007)	-0.093** (0.038)	0.015 (0.013)
Plains (3)	-0.016 (0.016)	-0.027 (0.032)	-0.075** (0.036)	-0.011 (0.007)	-0.031 (0.047)	0.014 (0.014)
Members aged 0 to 5 years old	0.010 (0.006)	-0.016 (0.015)	0.006 (0.010)	0.002 (0.004)	0.011 (0.010)	-0.006 (0.005)
Members aged 6 to 18 years old	-0.001 (0.003)	-0.004 (0.006)	-0.003 (0.005)	0.001 (0.002)	-0.009 (0.007)	-0.014*** (0.004)
Members aged 19 to 60 years (incl. parents)	-0.003 (0.004)	-0.005 (0.013)	0.044*** (0.010)	-0.007*** (0.003)	0.017* (0.009)	-0.013** (0.007)
Members older than 60 years (incl. parents)	-0.028*** (0.007)	0.021 (0.031)	0.040 (0.026)	0.002 (0.007)	0.049** (0.020)	-0.034** (0.014)
Aymara is the person's main language	0.033** (0.016)	-0.067*** (0.019)	0.082** (0.038)	-0.015* (0.008)	0.091*** (0.032)	-0.018 (0.020)
Quechua is the person's main language	0.015 (0.013)	-0.098*** (0.025)	0.161*** (0.032)	0.004 (0.010)	0.061** (0.028)	0.009 (0.022)
Other Native lang. is person's main language	-0.054 (0.054)	-0.149** (0.075)	0.174* (0.098)	-0.005 (0.022)	0.101 (0.133)	-0.031 (0.032)
Bilingual indigenous person (4)	-0.000 (0.010)	-0.016 (0.019)	-0.034 (0.029)	-0.002 (0.006)	0.021 (0.028)	0.011 (0.011)
Contact Availability (CA) (5)	-0.000 (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	0.000** (0.000)	-0.000*** (0.000)
Social Network= Quality*CA (6)	0.056* (0.033)	-0.276*** (0.060)	0.310*** (0.054)	0.363 (0.222)	0.433*** (0.078)	0.034 (0.181)
No. of Observations	5814	5208	5208	5208	5208	5814

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) This variable takes the value of one if the household head lived in a different place 5 years ago.

(2) Persons aged 15 years or more

(3) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(4) A person is defined as bilingual if he is indigenous and also speaks spanish.

(5) CA measured as proportion of municipal population that speaks same language.

(6) In columns 1-3, quality = share of employed heads of HH in municipality; in columns 4 - 6, quality = mean of the dependent variable of each

Annex Table 1.8A: Bolivia: All Urban Households- Probit regressions

Explanatory Variable	Dependent variable: Probability that the Household Head is					
	Employed	Employed in Formal Sector	Employed in Agriculture	Self-employed	An immigrant (1)	An Employer
Female household head	-0.137*** (0.024)	-0.110*** (0.016)	-0.007 (0.006)	-0.012* (0.006)	0.144*** (0.030)	0.022*** (0.009)
Age of the household head	0.024*** (0.005)	0.027*** (0.007)	-0.002 (0.001)	0.002 (0.003)	0.025*** (0.008)	-0.001 (0.005)
Years of Education of the Household Head	-0.001 (0.003)	0.016*** (0.005)	0.001 (0.001)	0.001 (0.001)	-0.018*** (0.003)	0.008*** (0.002)
Ave Adult Education in Household (2)	-0.004 (0.003)	0.012*** (0.004)	-0.004*** (0.001)	-0.000 (0.001)	-0.003 (0.004)	-0.004 (0.003)
Own house	-0.017* (0.010)	0.032 (0.047)	0.028*** (0.010)	-0.011 (0.007)	0.124*** (0.020)	-0.065*** (0.008)
Piped water	0.013 (0.034)	0.018 (0.051)	-0.015 (0.012)	0.023*** (0.004)	0.045 (0.035)	-0.028 (0.018)
Telephone Service (Land line or Celular)	0.014 (0.013)	0.100*** (0.019)	-0.013** (0.005)	0.029*** (0.008)	-0.010 (0.018)	-0.029 (0.019)
Bathroom within the house	-0.033 (0.021)	-0.008 (0.028)	0.008 (0.007)	0.017** (0.007)	0.027 (0.027)	-0.001 (0.018)
Electricity within the house	0.015 (0.025)	0.071 (0.117)	0.014*** (0.005)	0.013 (0.012)	0.026 (0.051)	0.026 (0.017)
Plains (3)	0.001 (0.025)	-0.030 (0.040)	-0.012 (0.008)	-0.025*** (0.006)	0.018 (0.049)	-0.018 (0.014)
Members aged 0 to 5 years old	0.028*** (0.010)	-0.019 (0.024)	0.003 (0.003)	0.004 (0.006)	0.004 (0.013)	-0.010 (0.006)
Members aged 6 to 18 years old	-0.008** (0.004)	-0.007 (0.009)	0.001 (0.002)	0.004 (0.003)	-0.013* (0.007)	-0.016*** (0.006)
Members aged 19 to 60 years (incl. parents)	-0.008 (0.008)	0.005 (0.016)	0.008*** (0.003)	-0.009** (0.004)	0.003 (0.009)	-0.013 (0.009)
Members older than 60 years (incl. parents)	-0.040** (0.017)	0.053 (0.047)	-0.006 (0.007)	0.002 (0.012)	0.032 (0.020)	-0.055*** (0.018)
Aymara is the person's main language	0.068** (0.028)	-0.042* (0.023)	0.005 (0.015)	-0.011 (0.017)	0.014 (0.025)	-0.008 (0.027)
Quechua is the person's main language	0.052** (0.025)	-0.087* (0.047)	0.038** (0.018)	0.048* (0.029)	-0.034 (0.033)	0.030 (0.032)
Other Native lang. is person's main language	-0.137 (0.146)	-0.337*** (0.112)	0.162* (0.094)	0.218 (0.218)	0.146 (0.227)	0.007 (0.089)
Bilingual indigenous person (4)	0.031* (0.018)	-0.046** (0.019)	-0.002 (0.010)	-0.011* (0.006)	0.038 (0.034)	-0.017* (0.010)
Contact Availability (CA) (5)	-0.000 (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	0.000 (0.000)	-0.000*** (0.000)
Social Network= Quality*CA (6)	0.189** (0.085)	-0.148* (0.080)	0.069*** (0.020)	0.812* (0.459)	0.088 (0.110)	-0.159 (0.175)
No. of Observations	2945	2475	2475	2475	2475	2945

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) This variable takes the value of one if the household head lived in a different place 5 years ago.

(2) Persons aged 15 years or more

(3) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(4) A person is defined as bilingual if he is indigenous and also speaks spanish.

(5) CA measured as proportion of municipal population that speaks same language.

(6) In columns 1-3, quality = share of employed heads of HH in municipality; in columns 4 - 6, quality = mean of the dependent variable of each

Annex Table 1.8B: Bolivia: All Rural Households - Probit regressions

Explanatory Variable	Dependent variable: Probability that the Household Head is					
	Employed	Employed in Formal Sector	Employed in Agriculture	An Employer	Self-employed	An immigrant (1)
Female household head	-0.056*** (0.016)	0.006 (0.017)	-0.124** (0.051)	0.000 (0.009)	0.021 (0.028)	-0.005 (0.016)
Age of the household head	0.003*** (0.001)	0.006** (0.003)	0.000 (0.005)	0.002** (0.001)	-0.001 (0.004)	-0.001 (0.003)
Years of Education of the Household Head	-0.001 (0.002)	0.009*** (0.004)	-0.002 (0.005)	0.002* (0.001)	-0.003 (0.005)	0.004 (0.003)
Ave Adult Education in Household (2)	-0.001 (0.002)	0.007* (0.004)	-0.022*** (0.006)	-0.003* (0.002)	-0.013** (0.005)	0.007** (0.004)
Own house	-0.003 (0.005)	-0.036*** (0.012)	0.126*** (0.019)	0.004 (0.004)	0.122*** (0.023)	-0.063*** (0.015)
Piped water	0.011** (0.004)	0.029* (0.018)	-0.033 (0.028)	0.012* (0.006)	-0.028 (0.023)	-0.003 (0.012)
Telephone Service (Land line or Celular)	-0.033 (0.033)	-0.004 (0.044)	-0.018 (0.126)	0.002 (0.016)	0.026 (0.062)	-0.031 (0.032)
Bathroom within the house	0.009* (0.005)	0.054*** (0.020)	-0.096*** (0.029)	0.009 (0.007)	-0.059** (0.025)	0.016 (0.012)
Electricity within the house	-0.030*** (0.009)	0.069** (0.027)	-0.161*** (0.037)	0.005 (0.006)	-0.080** (0.033)	-0.010 (0.014)
Plains (3)	-0.038* (0.020)	0.016 (0.030)	-0.121** (0.061)	0.010 (0.018)	-0.136** (0.061)	0.073* (0.040)
Members aged 0 to 5 years old	-0.003 (0.003)	-0.005 (0.006)	-0.002 (0.010)	0.000 (0.002)	0.015 (0.009)	-0.003 (0.006)
Members aged 6 to 18 years old	0.005** (0.002)	-0.002 (0.005)	-0.005 (0.006)	-0.001 (0.002)	0.003 (0.005)	-0.011** (0.005)
Members aged 19 to 60 years (incl. parents)	-0.001 (0.004)	-0.025*** (0.009)	0.041*** (0.013)	-0.002 (0.003)	0.033*** (0.013)	-0.015* (0.008)
Members older than 60 years (incl. parents)	0.000 (0.005)	-0.010 (0.017)	0.058* (0.031)	0.002 (0.005)	0.043 (0.029)	-0.005 (0.017)
Aymara is the person's main language	0.011* (0.007)	-0.036** (0.018)	0.116*** (0.032)	-0.012* (0.006)	0.082** (0.033)	-0.034* (0.019)
Quechua is the person's main language	-0.001 (0.007)	-0.033* (0.019)	0.130*** (0.032)	-0.010 (0.006)	0.059* (0.032)	0.000 (0.023)
Other Native lang. is person's main language	-0.029 (0.036)	-0.021 (0.044)	0.028 (0.073)		0.045 (0.075)	-0.024 (0.039)
Bilingual indigenous person (4)	-0.006 (0.006)	0.008 (0.019)	-0.029 (0.032)	0.006 (0.005)	-0.007 (0.026)	0.030* (0.015)
Contact Availability (CA) (5)	-0.000*** (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000* (0.000)
Social Network= Quality*CA (6)	-0.003 (0.013)	-0.111*** (0.043)	0.178*** (0.064)	0.138 (0.255)	0.268*** (0.064)	0.309 (0.226)
No. of Observations	2869	2733	2733	2685	2733	2869

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) This variable takes the value of one if the household head lived in a different place 5 years ago.

(2) Persons aged 15 years or more

(3) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(4) A person is defined as bilingual if he is indigenous and also speaks spanish.

(5) CA measured as proportion of municipal population that speaks same language.

(6) In columns 1-3, quality = share of employed heads of HH in municipality; in columns 4 - 6, quality = mean of the dependent variable of each

Annex Table 1.9: Bolivia: All Indigenous Households - Probit regressions

Explanatory Variable	Dependent variable: Probability that the Household Head is					
	Employed	Employed in Formal Sector	Employed in Agriculture	An Employer	Self-employed	An immigrant (1)
Female household head	-0.070*** (0.016)	-0.042** (0.019)	-0.118** (0.058)	0.003 (0.008)	0.105*** (0.031)	0.007 (0.014)
Age of the household head	0.005*** (0.001)	0.011** (0.005)	0.007 (0.007)	0.001 (0.001)	0.011*** (0.004)	-0.003 (0.002)
Years of Education of the Household Head	-0.003 (0.002)	0.009* (0.005)	-0.015** (0.007)	0.000 (0.001)	-0.016*** (0.004)	0.004 (0.003)
Ave. Adult Education in the Household (2)	-0.001 (0.002)	0.009** (0.004)	-0.029*** (0.009)	-0.000 (0.001)	-0.007 (0.005)	0.003 (0.004)
Rural Area	0.068*** (0.018)	-0.135*** (0.039)	0.523*** (0.053)	-0.007 (0.007)	0.193*** (0.055)	-0.032 (0.021)
Own house	-0.006 (0.009)	-0.027 (0.020)	0.158*** (0.026)	-0.009** (0.004)	0.157*** (0.023)	-0.065*** (0.014)
Piped water	0.012 (0.009)	0.031 (0.027)	-0.059 (0.043)	0.005 (0.004)	0.018 (0.030)	-0.018 (0.014)
Telephone Service (Land line or Celular)	-0.014 (0.014)	0.050 (0.049)	-0.038 (0.094)	0.006 (0.008)	0.048* (0.028)	-0.028 (0.017)
Bathroom within the house	-0.007 (0.011)	0.039 (0.024)	-0.035 (0.046)	0.015** (0.007)	-0.034 (0.026)	0.000 (0.013)
Electricity within the house	-0.030*** (0.010)	0.079 (0.053)	-0.188*** (0.050)	0.001 (0.005)	-0.104*** (0.039)	-0.003 (0.016)
Plains (3)	0.016 (0.016)	-0.049** (0.021)	-0.177* (0.094)	0.014 (0.019)	-0.049 (0.074)	0.075** (0.036)
Members aged 0 to 5 years old	-0.011* (0.006)	-0.012 (0.009)	0.008 (0.018)	-0.001 (0.002)	0.000 (0.011)	-0.001 (0.007)
Members aged 6 to 18 years old	0.005** (0.002)	-0.007 (0.008)	-0.007 (0.011)	0.001 (0.001)	0.002 (0.006)	-0.006 (0.005)
Members aged 19 to 60 years (incl. parents)	0.006 (0.004)	-0.009 (0.011)	0.053*** (0.018)	-0.000 (0.002)	0.010 (0.011)	-0.018** (0.008)
Members older than 60 years (incl. parents)	-0.014** (0.007)	-0.005 (0.029)	0.046 (0.047)	0.003 (0.004)	0.061** (0.025)	-0.018 (0.016)
Quechua is the person's main language	-0.013 (0.011)	-0.010 (0.023)	0.034 (0.045)	0.015** (0.006)	-0.074** (0.031)	0.017 (0.014)
Other Native lang. is person's main language	-0.156 (0.118)	-0.059 (0.069)	0.004 (0.116)	-0.000 (0.014)	-0.075 (0.136)	-0.023 (0.033)
Contact Availability (CA) (4)	-0.000 (0.000)	0.000 (0.000)	-0.000*** (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Social Network= Quality*CA (5)	0.022 (0.032)	-0.228*** (0.079)	0.469*** (0.132)	-0.053 (0.269)	0.369*** (0.101)	0.432 (0.355)
Observations	2932	2701	2701	2701	2701	2932

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) This variable takes the value of one if the household head lived in a different place 5 years ago.

(2) Persons aged 15 years or more

(3) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(4) CA measured as proportion of municipal population that speaks same language.

(5) In columns 1-3, quality = share of employed heads of HH in municipality; in columns 4 - 6, quality = mean of the dependent variable of each r

Annex Table 1.9A: Bolivia: Indigenous Households, Urban - Probit regressions

Explanatory Variable	Dependent variable: Probability that the Household Head is					
	Employed	Employed in Formal Sector	Employed in Agriculture	An Employer	Self-employed	An immigrant (1)
Female household head	-0.110*** (0.026)	-0.092*** (0.031)	-0.024** (0.012)	0.001 (0.010)	0.243*** (0.053)	0.008 (0.019)
Age of the household head	0.014*** (0.004)	0.014 (0.011)	0.001 (0.002)	0.002 (0.002)	0.031*** (0.011)	-0.007 (0.004)
Years of Education of the Household Head	-0.007 (0.004)	0.005 (0.008)	-0.002 (0.001)	-0.000 (0.001)	-0.025*** (0.006)	0.003 (0.004)
Ave. Adult Education in the Household (2)	0.000 (0.004)	0.008 (0.009)	-0.004* (0.002)	0.000 (0.001)	0.001 (0.006)	0.001 (0.006)
Own house	-0.029 (0.028)	0.025 (0.035)	0.028** (0.012)	-0.017*** (0.006)	0.211*** (0.049)	-0.101*** (0.023)
Piped water	0.009 (0.028)	0.049 (0.063)	-0.008 (0.013)	0.014*** (0.004)	0.022 (0.064)	-0.057** (0.025)
Telephone Service (Land line or Celular)	-0.029 (0.029)	0.158** (0.068)	-0.029** (0.012)	0.009 (0.011)	-0.012 (0.040)	-0.011 (0.030)
Bathroom within the house	-0.032 (0.032)	0.021 (0.062)	0.026*** (0.008)	0.009 (0.008)	0.022 (0.030)	-0.035 (0.022)
Electricity within the house	0.008 (0.030)	-0.062 (0.172)	0.014 (0.012)	-0.022 (0.030)	0.000 (0.074)	0.031 (0.021)
Plains (3)	0.083*** (0.028)	-0.121*** (0.044)	-0.026* (0.016)	-0.009 (0.006)	0.101 (0.078)	0.006 (0.022)
Members aged 0 to 5 years old	-0.023 (0.017)	-0.002 (0.020)	0.005 (0.006)	-0.004 (0.003)	-0.015 (0.023)	-0.018 (0.012)
Members aged 6 to 18 years old	0.006 (0.005)	-0.010 (0.015)	-0.003 (0.003)	0.001 (0.002)	-0.001 (0.009)	-0.004 (0.010)
Members aged 19 to 60 years (incl. parents)	0.018* (0.010)	0.012 (0.025)	0.003 (0.005)	0.002 (0.002)	-0.018 (0.017)	-0.021* (0.012)
Members older than 60 years (incl. parents)	-0.031 (0.020)	-0.011 (0.073)	-0.034*** (0.010)	-0.001 (0.008)	0.089** (0.041)	-0.057* (0.031)
Quechua is the person's main language	-0.014 (0.035)	-0.047 (0.058)	0.029 (0.022)	0.041*** (0.016)	-0.073 (0.052)	0.060*** (0.017)
Other Native lang. is person's main language	-0.479* (0.274)	-0.311*** (0.104)	0.230 (0.162)	0.172 (0.234)	-0.050 (0.257)	0.018 (0.104)
Contact Availability (CA) (4)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Social Network= Quality*CA (5)	0.159 (0.104)	-0.352* (0.209)	0.151** (0.066)	0.227 (0.826)	-0.153 (0.231)	-0.897** (0.417)
Observations	1012	866	866	866	866	1012

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) This variable takes the value of one if the household head lived in a different place 5 years ago.

(2) Persons aged 15 years or more

(4) CA measured as proportion of municipal population that speaks same language.

(5) In columns 1-3, quality = share of employed heads of HH in municipality; in columns 4 - 6, quality = mean of the dependent variable of each

Annex Table 1.9B: Bolivia: Indigenous Households, Rural - Probit regressions

Explanatory Variable	Dependent variable: Probability that the Household Head is					
	Employed	Employed in Formal Sector	Employed in Agriculture	An Employer	Self-employed	An immigrant (1)
Female household head	-0.062*** (0.018)	-0.005 (0.017)	-0.076 (0.048)	0.001 (0.004)	-0.010 (0.030)	-0.009 (0.015)
Age of the household head	0.003*** (0.001)	0.007*** (0.002)	0.002 (0.004)	0.001 (0.001)	0.000 (0.002)	-0.002 (0.002)
Years of Education of the Household Head	-0.002 (0.002)	0.009*** (0.004)	-0.008* (0.005)	0.001 (0.001)	-0.008* (0.005)	0.006* (0.003)
Ave. Adult Education in the Household (2)	-0.001 (0.001)	0.004 (0.004)	-0.016*** (0.006)	-0.001 (0.001)	-0.006 (0.005)	0.003 (0.003)
Own house	-0.001 (0.005)	-0.035*** (0.013)	0.090*** (0.019)	-0.002 (0.002)	0.092*** (0.020)	-0.034** (0.014)
Piped water	0.008* (0.004)	0.021 (0.016)	-0.030 (0.028)	0.002 (0.003)	-0.009 (0.019)	-0.001 (0.013)
Telephone Service (Land line or Celular)	-0.040 (0.051)	-0.002 (0.038)	0.039 (0.077)	0.005 (0.016)	0.038 (0.041)	-0.038** (0.018)
Bathroom within the house	0.003 (0.006)	0.043** (0.021)	-0.059** (0.028)	0.010 (0.006)	-0.048** (0.022)	0.012 (0.013)
Electricity within the house	-0.030*** (0.011)	0.066** (0.028)	-0.149*** (0.040)	0.007 (0.005)	-0.095*** (0.034)	-0.009 (0.014)
Plains (3)	-0.039 (0.031)	0.030 (0.048)	-0.119 (0.093)	0.154* (0.086)	-0.276** (0.115)	0.085 (0.065)
Members aged 0 to 5 years old	-0.003 (0.003)	-0.009 (0.006)	-0.002 (0.011)	0.001 (0.001)	0.005 (0.008)	0.007 (0.006)
Members aged 6 to 18 years old	0.005** (0.002)	-0.003 (0.005)	0.001 (0.007)	0.000 (0.001)	0.004 (0.005)	-0.008 (0.005)
Members aged 19 to 60 years (incl. parents)	-0.001 (0.004)	-0.023*** (0.008)	0.036*** (0.012)	-0.002 (0.002)	0.023** (0.010)	-0.012 (0.010)
Members older than 60 years (incl. parents)	-0.003 (0.004)	-0.001 (0.017)	0.057* (0.030)	0.001 (0.002)	0.036 (0.024)	-0.003 (0.016)
Quechua is the person's main language	-0.011** (0.005)	0.009 (0.015)	-0.013 (0.026)	0.001 (0.003)	-0.034* (0.020)	0.022* (0.012)
Other Native lang. is person's main language	-0.068 (0.060)	0.014 (0.054)	-0.088 (0.099)		-0.040 (0.081)	-0.016 (0.030)
Contact Availability (CA) (4)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000*** (0.000)
Social Network= Quality*CA (5)	0.008 (0.014)	-0.083** (0.039)	0.180** (0.076)	-0.179 (0.209)	0.230*** (0.058)	0.624** (0.265)
Observations	1920	1835	1835	1787	1835	1920

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) This variable takes the value of one if the household head lived in a different place 5 years ago.

(2) Persons aged 15 years or more

(4) CA measured as proportion of municipal population that speaks same language.

(5) In columns 1-3, quality = share of employed heads of HH in municipality; in columns 4 - 6, quality = mean of the dependent variable of each

Annex Table 1.10: Bolivia: All Population - Probit Regressions

Explanatory Variable	Dependent variable: Probability that the Household Head Spouse is ...								
	<i>All Households</i>			<i>Urban</i>			<i>Rural</i>		
	Employed:	Employed:	Employed:	Employed:	Employed:	Employed:	Employed:	Employed:	Employed:
	Formal	Sector	Agriculture	Formal	Sector	Agriculture	Formal	Sector	Agriculture
Female household head	0.207*** (0.054)	0.028 (0.105)	0.279* (0.164)	0.228*** (0.068)	0.007 (0.170)	0.085 (0.095)		0.004 (0.008)	0.218* (0.116)
Age of the Spouse	0.041*** (0.007)	0.021*** (0.007)	-0.010** (0.005)	0.061*** (0.010)	0.025* (0.013)	-0.003** (0.002)	0.025*** (0.007)	0.002** (0.001)	-0.014 (0.010)
Education of the Spouse	0.015** (0.007)	0.010*** (0.003)	-0.005 (0.004)	0.016** (0.008)	0.017*** (0.006)	0.001 (0.001)	-0.005 (0.008)	0.000 (0.000)	-0.015 (0.011)
Ave. Adult Education in the Household (1)	-0.004 (0.011)	0.019*** (0.004)	-0.000 (0.009)	-0.004 (0.013)	0.025*** (0.007)	-0.000 (0.002)	0.021* (0.013)	0.001 (0.001)	-0.002 (0.017)
Rural Area	0.096** (0.044)	-0.227*** (0.035)	0.278*** (0.050)						
Own house	-0.000 (0.020)	0.006 (0.016)	0.060*** (0.019)	-0.014 (0.030)	0.054** (0.025)	0.005 (0.007)	0.005 (0.024)	-0.004 (0.003)	0.132*** (0.038)
Piped water	-0.010 (0.028)	-0.023 (0.031)	-0.095*** (0.032)	0.023 (0.033)	-0.063 (0.071)	-0.018 (0.018)	-0.018 (0.037)	0.000 (0.001)	-0.174*** (0.056)
Telephone Service (Land line or Celular)	-0.002 (0.024)	0.050** (0.022)	-0.009 (0.040)	-0.017 (0.025)	0.108*** (0.030)	-0.004 (0.006)	0.013 (0.091)	0.001 (0.003)	0.100 (0.129)
Bathroom within the house	-0.042 (0.028)	0.020 (0.032)	-0.045* (0.024)	-0.043 (0.034)	0.021 (0.074)	0.002 (0.005)	-0.028 (0.037)	-0.000 (0.001)	-0.112** (0.049)
Electricity within the house	-0.035 (0.032)	0.022 (0.038)	-0.039 (0.029)	-0.121** (0.056)	-0.000 (0.090)	-0.008 (0.009)	-0.022 (0.037)	0.003 (0.002)	-0.078 (0.053)
Plains (2)	-0.054 (0.044)	0.003 (0.027)	-0.061* (0.035)	0.031 (0.030)	-0.005 (0.043)	-0.010 (0.007)	-0.282*** (0.062)	0.005 (0.005)	-0.150 (0.096)
Age of the Household Head	-0.000 (0.001)	-0.002 (0.001)	0.002* (0.001)	-0.002 (0.002)	-0.003 (0.003)	0.001*** (0.000)	0.002 (0.002)	-0.000 (0.000)	0.002 (0.003)
Education of the Household Head	-0.001 (0.005)	0.001 (0.003)	-0.003 (0.005)	-0.000 (0.006)	0.000 (0.005)	-0.001 (0.001)	-0.012* (0.007)	0.000 (0.000)	0.001 (0.009)
Members aged 0 to 5 years	-0.013 (0.011)	-0.003 (0.013)	0.004 (0.009)	-0.009 (0.018)	0.006 (0.020)	0.002 (0.002)	-0.004 (0.013)	-0.001 (0.001)	0.008 (0.019)
Members aged 6 to 18 years	-0.008 (0.006)	-0.024*** (0.007)	-0.003 (0.006)	-0.005 (0.007)	-0.029** (0.014)	0.003** (0.001)	-0.015* (0.009)	-0.002** (0.001)	-0.016 (0.012)
Members aged 19 to 60 years (incl. parents)	-0.007 (0.011)	0.012 (0.009)	-0.002 (0.012)	0.001 (0.013)	0.017 (0.016)	-0.000 (0.002)	-0.028 (0.018)	-0.000 (0.001)	-0.001 (0.033)
Members older than 60 years (incl. parents)	-0.011 (0.023)	0.084*** (0.021)	-0.019 (0.018)	0.004 (0.035)	0.145*** (0.038)	0.001 (0.006)	-0.001 (0.035)	0.002 (0.002)	-0.064* (0.038)
Aymara is the person's main language	0.127*** (0.038)	-0.086*** (0.033)	0.084* (0.047)	0.059 (0.042)	-0.109 (0.078)	0.023 (0.015)	0.143*** (0.042)	-0.001 (0.001)	0.155* (0.085)
Quechua is the person's main language	0.071** (0.031)	-0.048* (0.028)	0.128** (0.052)	0.072* (0.043)	-0.020 (0.077)	0.063* (0.033)	-0.004 (0.047)	-0.000 (0.001)	0.185** (0.083)
Other Native lang. is person's main language	0.149*** (0.053)		0.013 (0.093)	-0.115 (0.150)			0.103* (0.062)		-0.003 (0.179)
Bilingual indigenous person (3)	0.067** (0.028)	0.013 (0.022)	0.053* (0.028)	0.118*** (0.039)	0.013 (0.043)	0.009* (0.005)	0.038 (0.039)	-0.000 (0.001)	0.081 (0.067)
Contact Availability (CA) (4)	0.000 (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)
Social Network= Quality *CA (5)	0.405*** (0.078)	-0.129* (0.074)	0.239*** (0.088)	0.303** (0.121)	0.075 (0.189)	0.034** (0.016)	0.226** (0.094)	-0.005 (0.003)	0.428** (0.195)
No. of Observations	4003	2578	2608	1975	1132	1132	2011	1446	1471

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(3) A person is defined as bilingue if he is indigenous and also speaks spanish.

(4) CA measured as proportion of municipal population that speaks same language.

Annex Table 1.11: Bolivia: Indigenous Households - Probit Regressions

Explanatory Variable	Dependent variable: Probability that the Household Head Spouse is ...								
	<i>All Households</i>			<i>Urban</i>			<i>Rural</i>		
	Employed	Employed: Formal Sector	Employed: Agriculture	Employed	Employed: Formal Sector	Employed: Agriculture	Employed	Employed: Formal Sector	Employed: Agriculture
Female household head	0.029 (0.128)	0.195 (0.166)	-0.145 (0.125)	-0.101 (0.145)	0.413* (0.232)			0.000 (0.000)	-0.045 (0.188)
Age of the Spouse	0.026*** (0.005)	0.008** (0.004)	-0.018* (0.010)	0.043*** (0.009)	0.010 (0.015)	-0.008* (0.004)	0.017*** (0.007)	0.000 (0.000)	-0.014 (0.011)
Education of the Spouse	0.008 (0.009)	0.000 (0.003)	-0.003 (0.009)	0.014 (0.014)	-0.006 (0.012)	0.008* (0.004)	-0.007 (0.008)	0.000 (0.000)	-0.017 (0.012)
Ave. Adult Education in the Household (1)	0.006 (0.012)	0.012*** (0.004)	0.001 (0.016)	0.011 (0.014)	0.030* (0.017)	-0.006 (0.005)	0.010 (0.012)	0.000 (0.000)	0.008 (0.018)
Rural Area	0.132*** (0.050)	-0.219*** (0.052)	0.377*** (0.078)						
Own house	0.002 (0.033)	0.003 (0.011)	0.109*** (0.040)	-0.037 (0.074)	0.066 (0.045)	0.000 (0.021)	-0.005 (0.025)	-0.000 (0.000)	0.141*** (0.042)
Piped water	-0.015 (0.039)	0.009 (0.018)	-0.165*** (0.058)	0.008 (0.054)	0.014 (0.084)	-0.022 (0.040)	-0.006 (0.041)	0.000 (0.000)	-0.190*** (0.066)
Telephone Service (Land line or Celular)	-0.010 (0.037)	-0.015 (0.013)	-0.021 (0.088)	-0.097* (0.053)	0.027 (0.049)	-0.022 (0.019)	0.056 (0.098)	-0.000 (0.000)	0.073 (0.161)
Bathroom within the house	-0.037 (0.033)	0.015 (0.021)	-0.116** (0.049)	-0.043 (0.040)	0.030 (0.097)	0.013 (0.022)	-0.022 (0.043)	0.000 (0.000)	-0.152*** (0.057)
Electricity within the house	-0.029 (0.045)	-0.010 (0.026)	-0.075 (0.055)	-0.051 (0.067)	-0.120 (0.126)	-0.073 (0.053)	-0.025 (0.046)	0.000 (0.000)	-0.051 (0.056)
Plains (2)	-0.016 (0.071)	0.027 (0.031)	-0.105 (0.098)	0.071 (0.073)	0.148 (0.098)	-0.022 (0.033)	-0.188** (0.092)	0.000 (0.000)	-0.136 (0.142)
Age of the Household Head	0.005*** (0.002)	0.001 (0.001)	0.003 (0.003)	0.005* (0.003)	0.008* (0.005)	0.004*** (0.001)	0.005** (0.002)	0.000 (0.000)	0.001 (0.003)
Education of the Household Head	-0.001 (0.007)	-0.001 (0.003)	-0.003 (0.011)	0.000 (0.010)	-0.005 (0.009)	-0.003 (0.006)	-0.006 (0.007)	-0.000 (0.000)	0.001 (0.010)
Members aged 0 to 5 years	-0.000 (0.012)	-0.006 (0.006)	-0.005 (0.021)	-0.035** (0.016)	0.000 (0.020)	0.022* (0.012)	0.020 (0.014)	-0.000 (0.000)	-0.011 (0.021)
Members aged 6 to 18 years	-0.015* (0.009)	-0.015*** (0.006)	-0.013 (0.014)	-0.014 (0.017)	-0.034 (0.024)	0.005 (0.006)	-0.014 (0.010)	-0.000 (0.000)	-0.017 (0.013)
Members aged 19 to 60 years (incl. parents)	-0.009 (0.011)	-0.003 (0.009)	-0.018 (0.029)	-0.010 (0.009)	0.004 (0.033)	-0.005 (0.009)	-0.017 (0.021)	-0.000 (0.000)	0.003 (0.036)
Members older than 60 years (incl. parents)	-0.064** (0.027)	0.011 (0.015)	-0.071* (0.042)	-0.149*** (0.029)	0.051 (0.077)	0.003 (0.030)	-0.018 (0.034)	0.000 (0.000)	-0.083** (0.042)
Quechua is the person's main language	-0.106*** (0.030)	0.023* (0.013)	0.047 (0.064)	-0.030 (0.042)	0.091 (0.062)	0.021 (0.023)	-0.139*** (0.032)	-0.000 (0.000)	0.037 (0.072)
Other Native lang. is person's main language	-0.032 (0.068)		-0.110 (0.141)	-0.080 (0.154)			-0.023 (0.086)		-0.180 (0.185)
Contact Availability (CA) (3)	-0.000*** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)
Social Network= Quality *CA (4)	0.495*** (0.108)	-0.083 (0.057)	0.598** (0.245)	0.580** (0.250)	-0.179 (0.245)	0.261** (0.115)	0.245*** (0.095)	-0.000 (0.000)	0.540** (0.247)
Observations	2033	1444	1474	686	396	390	1340	1048	1073

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(3) CA measured as proportion of municipal population that speaks same language.

(4) Quality = Share of HH heads or spouses that are employed in the municipality.

Annex Table 1.12: Bolivia: All Population, Other Outcomes - Probit Regressions

Explanatory Variable	Dependent variable: Probability that the Household					
	<i>All Population</i>		<i>Urban Area</i>		<i>Rural Area</i>	
	Uses Modern Health Services	Access to Financial System	Uses Modern Health Services	Access to Financial System	Uses Modern Health Services	Access to Financial System
Female household head	0.162 (0.150)	0.005 (0.015)	0.054 (0.062)	-0.003 (0.022)	0.377 (0.265)	0.014 (0.018)
Age of the Household Head	0.001 (0.003)	0.001** (0.000)	0.002 (0.001)	0.001* (0.001)	-0.005 (0.005)	0.001* (0.000)
Education of the Household Head	-0.033*** (0.010)	0.001 (0.002)	-0.011* (0.006)	0.003 (0.004)	-0.052** (0.022)	-0.000 (0.002)
Age of the Spouse	0.026* (0.013)	0.005*** (0.001)	0.016** (0.006)	0.007*** (0.002)	0.018 (0.015)	0.003*** (0.001)
Education of the Spouse	-0.022** (0.010)	-0.000 (0.001)	-0.010* (0.006)	0.000 (0.003)	-0.040** (0.018)	0.001 (0.001)
Ave. Adult Education in Household (1)	0.075*** (0.016)	0.007*** (0.003)	0.026* (0.014)	0.010** (0.004)	0.102*** (0.029)	0.002 (0.002)
Rural Area	-0.185** (0.072)	-0.019 (0.014)				
Plains (2)	0.072 (0.094)	-0.014 (0.012)	-0.044 (0.052)	-0.030 (0.019)	0.175 (0.156)	-0.002 (0.012)
Own house	-0.081 (0.058)	0.004 (0.007)	-0.076** (0.037)	0.004 (0.010)	0.009 (0.068)	0.002 (0.007)
Piped water	0.074 (0.050)	0.005 (0.017)	0.060 (0.045)	-0.018 (0.034)	0.058 (0.074)	0.011 (0.008)
Telephone Service (Land line or Celular)	0.056 (0.096)	0.081*** (0.008)	0.052 (0.038)	0.115*** (0.009)		-0.018** (0.008)
Bathroom within the house	0.008 (0.069)	0.019 (0.017)	-0.031 (0.053)	0.025 (0.037)	0.082 (0.072)	0.009 (0.008)
Electricity within the house	0.301*** (0.069)	0.061*** (0.015)	0.182* (0.095)	0.100*** (0.032)	0.394*** (0.082)	0.025** (0.010)
Members aged 0 to 5 years old	-0.097*** (0.030)	-0.007 (0.005)	-0.056*** (0.020)	-0.012 (0.009)	-0.055 (0.035)	-0.003 (0.004)
Members aged 6 to 18 years old	-0.018 (0.014)	0.010** (0.004)	-0.018 (0.013)	0.014** (0.007)	-0.018 (0.018)	0.005** (0.002)
Members aged 19 to 60 years (incl. parents)	0.008 (0.025)	0.009** (0.004)	-0.007 (0.012)	0.015** (0.006)	0.099* (0.056)	0.001 (0.004)
Members older than 60 years (incl. parents)	0.087 (0.079)	0.010 (0.009)	0.080 (0.052)	0.012 (0.013)	0.036 (0.107)	0.006 (0.011)
Aymara is the person's main language	-0.193* (0.114)	-0.011 (0.015)	-0.111 (0.080)	0.035 (0.025)	-0.254*** (0.095)	-0.019** (0.008)
Quechua is the person's main language	0.019 (0.084)	-0.009 (0.018)	0.020 (0.039)	0.022 (0.036)	-0.024 (0.121)	-0.018** (0.009)
Other Native lang. is person's main language	-0.222 (0.223)	0.002 (0.054)	0.058** (0.029)	0.207** (0.104)	-0.269*** (0.096)	-0.025*** (0.007)
Bilingual indigenous person (3)	0.043 (0.077)	-0.010 (0.020)	-0.074 (0.057)	-0.020 (0.036)	0.147 (0.095)	0.008 (0.008)
Contact Availability (CA) (4)	-0.000*** (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.000)	-0.000*** (0.000)	-0.000** (0.000)
Social Network= Quality *CA (5)	0.398 (0.253)	-0.020 (0.047)	0.023 (0.135)	0.116 (0.116)	0.391 (0.406)	-0.032 (0.021)
No. of Observations	738	5814	335	2945	399	2869

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(3) A person is defined as bilingual if he is indigenous and also speaks spanish.

(4) CA measured as proportion of municipal population that speaks same language.

(5) In columns 1,3, 5: quality=mean of dependent variable of each regression; columns 2, 4, 6: quality=share of employed HH heads/spouses in the municipality.

Annex Table 1.13: Bolivia: Indigenous Households, Other Outcomes - Probit Regressions

Explanatory Variable	Dependent variable: Probability that the Household					
	<i>All Population</i>		<i>Urban Area</i>		<i>Rural Area</i>	
	Uses Modern Health Services	Access to Financial System	Uses Modern Health Services	Access to Financial System	Uses Modern Health Services	Access to Financial System
Female household head	0.118 (0.257)	0.006 (0.015)	0.063 (0.478)	-0.007 (0.031)	0.354 (0.282)	0.013 (0.017)
Age of the Household Head	0.003 (0.006)	0.001 (0.001)	0.018*** (0.006)	0.002 (0.001)	-0.005 (0.005)	0.000 (0.000)
Education of the Household Head	-0.039** (0.018)	0.001 (0.003)	-0.010 (0.022)	0.004 (0.006)	-0.056** (0.027)	-0.001 (0.001)
Age of the Spouse	0.018 (0.016)	0.002* (0.001)	0.032 (0.036)	-0.000 (0.002)	0.010 (0.012)	0.002*** (0.001)
Education of the Spouse	-0.017 (0.019)	0.001 (0.001)	-0.029 (0.025)	0.002 (0.003)	-0.032 (0.020)	0.002 (0.001)
Ave. Adult Education in Household (1)	0.077** (0.033)	0.004 (0.003)	0.061 (0.043)	0.007 (0.009)	0.094*** (0.033)	0.001 (0.002)
Rural Area	-0.246** (0.117)	-0.013 (0.013)				
Plains (2)	0.158 (0.144)	-0.006 (0.014)	-0.071 (0.193)	-0.023 (0.028)	0.203 (0.220)	0.010 (0.017)
Own house	-0.092 (0.083)	0.014** (0.007)	-0.165 (0.115)	0.039*** (0.015)	0.017 (0.083)	-0.000 (0.007)
Piped water	-0.073 (0.095)	0.009 (0.009)	-0.013 (0.133)	0.012 (0.021)	-0.054 (0.077)	0.007 (0.007)
Telephone Service (Land line or Celular)	-0.194 (0.188)	0.020 (0.014)	-0.179 (0.244)	0.048* (0.025)		-0.018*** (0.004)
Bathroom within the house	0.009 (0.112)	0.009 (0.012)	-0.125 (0.157)	0.018 (0.034)	0.130* (0.076)	0.003 (0.008)
Electricity within the house	0.351*** (0.096)	0.028** (0.012)	0.437** (0.207)	0.029 (0.038)	0.391*** (0.121)	0.020** (0.010)
Members aged 0 to 5 years old	-0.089* (0.046)	-0.003 (0.004)	-0.102** (0.048)	-0.009 (0.009)	-0.054 (0.042)	-0.002 (0.004)
Members aged 6 to 18 years old	-0.072*** (0.028)	0.012*** (0.002)	-0.134*** (0.043)	0.028*** (0.005)	-0.037* (0.019)	0.004* (0.002)
Members aged 19 to 60 years (incl. parents)	0.065 (0.059)	0.010* (0.006)	-0.083 (0.066)	0.026* (0.016)	0.129* (0.066)	0.001 (0.004)
Members older than 60 years (incl. parents)	-0.009 (0.100)	0.011 (0.011)		0.003 (0.022)	-0.075 (0.099)	0.011 (0.009)
Quechua is the person's main language	0.079 (0.098)	0.005 (0.010)	0.251*** (0.096)	-0.017 (0.028)	0.145* (0.086)	0.006 (0.007)
Other Native lang. is person's main language	-0.275 (0.185)	-0.009 (0.025)	0.118 (0.130)	0.072 (0.087)	-0.166 (0.106)	-0.015* (0.008)
Contact Availability (CA) (3)	-0.000*** (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)
Social Network= Quality *CA (4)	1.154** (0.587)	-0.053 (0.037)	-0.441 (0.626)	0.057 (0.164)	1.262* (0.712)	-0.037** (0.018)
Observations	379	2932	115	1012	250	1920

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(3) CA measured as proportion of municipal population that speaks same language.

(4) In columns 1,3, 5: quality=mean of dependent variable of each regression; columns 2, 4, 6: quality=share of employed HH heads/spouses in the municipality.

Annex Table 1.14: Bolivia: Children's Outcomes (Children aged 7 to 14 Years) Probit Regressions

10.5	Dependent variable: Probability that within the Household					
	<i>All Population</i>		<i>Urban Area</i>		<i>Rural Area</i>	
	At least one child works	All children go to school	At least one child works	All children go to school	At least one child works	All children go to school
Female household head	0.0221 (0.0368)	0.0212* (0.0110)	0.0369 (0.0401)	0.0058 (0.0082)	-0.0255 (0.0662)	0.0752*** (0.0245)
Age of the Spouse	-0.0011 (0.0021)	0.0025*** (0.0009)	0.0010 (0.0021)	0.0008 (0.0006)	-0.0025 (0.0046)	0.0084*** (0.0026)
Age of the Household Head	0.0015 (0.0014)	-0.0002 (0.0005)	0.0017 (0.0013)	-0.0003 (0.0003)	-0.0000 (0.0017)	0.0007 (0.0013)
Education of the Household Head	-0.0000 (0.0037)	0.0004 (0.0019)	-0.0014 (0.0032)	0.0010 (0.0012)	0.0043 (0.0084)	-0.0063 (0.0055)
Education of the Spouse	0.0033 (0.0029)	-0.0021 (0.0014)	0.0035** (0.0016)	-0.0008 (0.0007)	-0.0104 (0.0079)	-0.0095 (0.0063)
Ave Adult Education in Household (1)	-0.0104** (0.0048)	0.0074** (0.0029)	-0.0072** (0.0032)	0.0020 (0.0019)	-0.0102 (0.0131)	0.0319*** (0.0081)
Rural Area	0.0519* (0.0268)	-0.0048 (0.0078)				
Plains (2)	0.0503 (0.0483)	0.0138* (0.0079)	0.0486 (0.0304)	0.0037 (0.0044)	-0.0671 (0.0567)	0.0583*** (0.0226)
Own house	0.0391** (0.0183)	0.0019 (0.0081)	0.0136 (0.0168)	0.0069* (0.0035)	0.0899*** (0.0310)	-0.0267 (0.0191)
Piped water	-0.0086 (0.0182)	-0.0039 (0.0058)	0.0146 (0.0159)	-0.0014 (0.0037)	-0.0311 (0.0342)	0.0007 (0.0209)
Telephone Service (Land line or Celular)	-0.0075 (0.0274)	0.0281*** (0.0097)	-0.0098 (0.0153)	0.0133*** (0.0043)	-0.1026 (0.1137)	
Bathroom within the house	-0.0011 (0.0200)	0.0125 (0.0083)	-0.0202 (0.0241)	-0.0006 (0.0042)	0.0087 (0.0390)	0.0491** (0.0225)
Electricity within the house	-0.0457* (0.0244)	0.0392*** (0.0133)	-0.0672* (0.0378)	0.0201 (0.0127)	-0.0479 (0.0416)	0.0713*** (0.0229)
Members aged 0 to 5 years old	-0.0089 (0.0090)	-0.0061** (0.0026)	-0.0012 (0.0092)	-0.0028** (0.0012)	-0.0245* (0.0146)	-0.0188** (0.0093)
Members aged 6 to 18 years old	0.0258*** (0.0061)	-0.0121*** (0.0027)	0.0167*** (0.0056)	-0.0030** (0.0015)	0.0468*** (0.0115)	-0.0438*** (0.0071)
Members aged 19 to 60 years (incl. parents)	0.0083 (0.0103)	-0.0044 (0.0045)	0.0105 (0.0094)	-0.0000 (0.0023)	-0.0041 (0.0219)	-0.0249* (0.0138)
Members older than 60 years (incl. parents)	-0.0191 (0.0227)	0.0194* (0.0105)	-0.0174 (0.0247)	0.0135* (0.0082)	-0.0013 (0.0460)	0.0212 (0.0273)
Aymara is the person's main language==1	0.0089 (0.0389)	0.0228*** (0.0071)	-0.0445* (0.0255)	0.0186*** (0.0071)	0.0110 (0.0572)	0.0809*** (0.0229)
Quechua is the person's main language==1	0.0066 (0.0290)	0.0097 (0.0096)	-0.0182 (0.0259)	0.0159*** (0.0061)	-0.0295 (0.0452)	0.0352 (0.0302)
Other Native lang. is person's main language	-0.0773** (0.0306)	0.0201*** (0.0063)	-0.0563*** (0.0142)		-0.1267 (0.0866)	0.0564** (0.0263)
Bilingual indigenous person (3)	0.0101 (0.0254)	0.0348*** (0.0107)	0.0292 (0.0187)	0.0292*** (0.0110)	-0.0438 (0.0455)	0.0672** (0.0333)
Contact Availability (CA) (4)	0.0000 (0.0000)	-0.0000*** (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)
Social Network= Quality *CA (5)	0.1594 (0.1626)	0.0638*** (0.0151)	-0.3220 (0.2512)	0.0654*** (0.0223)	0.1259 (0.2544)	0.1599*** (0.0461)
No. of Observations	2881	2881	1482	1471	1399	1377

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.
Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(3) A person is defined as bilingue if he is indigenous and also speaks spanish.

(4) CA measured as proportion of municipal population that speaks same language.

(5) Quality = Mean of dependent variable of each regression.

Annex Table 1.15: Bolivia: Indigenous Children's Outcomes (Children aged 7 to 14 Years) Probit Regressions

Explanatory Variable	Dependent variable: Probability that within the Household					
	All Population		Urban Area		Rural Area	
	At least one child works	All the children go to school	At least one child works	All the children go to school	At least one child works	All the children go to school
Female household head=1	-0.0303 (0.0499)	0.0220 (0.0320)	0.0003 (0.0334)	-0.1287** (0.0627)	-0.0942 (0.0728)	0.0908*** (0.0189)
Age of the Household Head	0.0015 (0.0019)	-0.0001 (0.0009)	0.0032* (0.0018)	-0.0002 (0.0005)	-0.0007 (0.0020)	0.0005 (0.0012)
Education of the Household Head	0.0030 (0.0072)	0.0011 (0.0062)	0.0039 (0.0039)	0.0008 (0.0037)	-0.0004 (0.0115)	0.0004 (0.0062)
Age of the Spouse	-0.0041 (0.0033)	0.0049** (0.0020)	-0.0005 (0.0017)	-0.0012* (0.0006)	-0.0057 (0.0057)	0.0097*** (0.0025)
Education of the Spouse	-0.0004 (0.0064)	-0.0044 (0.0054)	0.0024 (0.0045)	0.0028 (0.0027)	-0.0100 (0.0103)	-0.0125* (0.0069)
Ave Adult Education in Household (1)	-0.0166* (0.0096)	0.0225*** (0.0081)	-0.0128*** (0.0041)	0.0052 (0.0043)	-0.0148 (0.0182)	0.0319*** (0.0083)
Rural Area==1	0.0938** (0.0389)	-0.0198 (0.0215)				
Plains (2)	0.0902 (0.0967)	0.0428* (0.0223)	0.0374 (0.0339)	0.0141 (0.0108)	-0.0997 (0.0753)	0.0746*** (0.0188)
Own house==1	0.0618** (0.0265)	-0.0157 (0.0165)	-0.0017 (0.0213)	0.0104 (0.0096)	0.1160*** (0.0363)	-0.0437** (0.0203)
Piped water==1	-0.0186 (0.0270)	-0.0154 (0.0154)	0.0234 (0.0166)	-0.0032 (0.0115)	-0.0612 (0.0417)	-0.0069 (0.0252)
Telephone Service (Land line or Celular)	0.1330*** (0.0501)		0.0437* (0.0264)		-0.0630 (0.1562)	
Bathroom within the house==1	-0.0005 (0.0281)	0.0073 (0.0168)	0.0143 (0.0174)	-0.0091 (0.0140)	-0.0145 (0.0506)	0.0251 (0.0251)
Electricity within the house==1	-0.0610 (0.0387)	0.0798*** (0.0264)	-0.2354* (0.1257)	0.0265 (0.0281)	-0.0166 (0.0528)	0.0853*** (0.0231)
Members aged 0 to 5 years old	-0.0103 (0.0116)	-0.0192** (0.0076)	-0.0039 (0.0101)	-0.0114** (0.0057)	-0.0172 (0.0180)	-0.0189* (0.0103)
Members aged 6 to 18 years old	0.0300*** (0.0088)	-0.0258*** (0.0055)	0.0256*** (0.0065)	-0.0039 (0.0033)	0.0408*** (0.0148)	-0.0441*** (0.0090)
Members aged 19 to 60 years (incl. parents)	0.0213 (0.0226)	-0.0286*** (0.0092)	0.0216** (0.0102)	-0.0050 (0.0037)	0.0003 (0.0316)	-0.0341** (0.0153)
Members older than 60 years (incl. parents)	-0.0082 (0.0373)	0.0214 (0.0218)	0.0044 (0.0340)	0.0058 (0.0109)	-0.0243 (0.0549)	0.0274 (0.0333)
Quechua is the person's main language	-0.0141 (0.0332)	-0.0325** (0.0161)	-0.0066 (0.0208)	-0.0053 (0.0092)	-0.0144 (0.0550)	-0.0547** (0.0238)
Other Native lang. is person's main language	-0.1196*** (0.0307)	0.0192 (0.0254)	-0.0156 (0.0420)		-0.1751** (0.0685)	-0.0158 (0.0581)
Contact Availability (CA) (3)	-0.0000** (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000*** (0.0000)	0.0000 (0.0000)
Social Network= Quality *CA (4)	0.1539 (0.2736)	0.1076** (0.0532)	0.3391 (0.3577)	0.1104** (0.0546)	-0.1006 (0.3578)	0.1118 (0.0704)
Observations	1427	1326	529	429	898	886

Results express marginal probabilities. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Not shown: Municipality control variables (share of households in municipality with dirt floor, running water, bathroom, and electricity.)

(1) Persons aged 15 years or more

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

(3) CA measured as proportion of municipal population that speaks same language.

(4) Quality = Mean of dependent variable of each regression.

Annex Table 1.16: Bolivia: Welfare Effects of the Basic Health Insurance Program

<i>Dependent variable: Household per capita expenditure</i>	<i>All Population (1)</i>			<i>Urban Area</i>			<i>Rural Area</i>		
	Indigenous Household	Non-Indigeneous Household	Non-Indigenous Poor Household	Indigenous Household	Non-Indigeneous Household	Non-Indigenous Poor Household	Indigenous Household	Non-Indigeneous Household	Non-Indigenous Poor Household
Did you or any member of your family use Basic Health Insurance?	-0.108 (0.026)***	-0.193 (0.031)***	-0.097 (0.027)***	-0.134 (0.032)***	-0.194 (0.038)***	-0.094 (0.032)***	-0.076 (0.041)*	-0.163 (0.057)***	-0.093 (0.053)*
Female household head	0.002 (0.032)	-0.075 (0.039)*	-0.076 (0.040)*	-0.008 (0.037)	-0.055 (0.040)	-0.029 (0.036)	0.001 (0.055)	-0.237 (0.117)**	-0.248 (0.109)**
Age of the household head	0.018 (0.005)***	0.02 (0.006)***	0 (0.005)	0.025 (0.005)***	0.023 (0.007)***	0 (0.006)	0.015 (0.008)**	0.017 (0.010)*	-0.005 (0.009)
Years of Education of the Household Head	-0.003 (0.005)	-0.006 (0.007)	0 (0.006)	-0.005 (0.006)	-0.006 (0.008)	0.002 (0.006)	0.003 (0.009)	-0.011 (0.014)	-0.005 (0.015)
Average Adult Education in the Household (3)	0.067 (0.006)***	0.071 (0.008)***	0.021 (0.007)***	0.066 (0.007)***	0.07 (0.010)***	0.018 (0.008)**	0.066 (0.011)***	0.082 (0.015)***	0.03 (0.017)*
Rural Area	-0.16 (0.030)***	0.002 (0.049)	-0.286 (0.055)***						
Plains (2)	0.302 (0.037)***	0.069 (0.032)**	0.064 (0.031)**	0.221 (0.047)***	0.073 (0.036)**	0.083 (0.036)**	0.454 (0.060)***	0.004 (0.068)	-0.032 (0.064)
Own house	-0.03 (0.024)	0.092 (0.032)***	0.043 (0.029)	0.044 (0.031)	0.092 (0.038)**	0.047 (0.032)	-0.105 (0.035)***	0.104 (0.058)*	0.042 (0.054)
Piped water	0.029 (0.029)	0.05 (0.044)	0.013 (0.035)	-0.04 (0.043)	0.136 (0.055)**	0.102 (0.047)**	0.095 (0.038)**	-0.078 (0.078)	-0.152 (0.063)**
Telephone Service (Land line or Celular)	0.421 (0.035)***	0.587 (0.040)***	0.19 (0.036)***	0.463 (0.037)***	0.582 (0.042)***	0.187 (0.038)***	0.365 (0.114)***	0.499 (0.183)***	0.025 (0.078)
Bathroom within the house	0.151 (0.027)***	0.16 (0.047)***	0.008 (0.041)	0.073 (0.036)**	0.081 (0.076)	-0.055 (0.061)	0.207 (0.037)***	0.211 (0.060)***	0.068 (0.056)
Electricity within the house	0.433 (0.036)***	0.183 (0.053)***	0.202 (0.043)***	0.31 (0.064)***	0.217 (0.076)***	0.262 (0.055)***	0.429 (0.044)***	0.149 (0.073)**	0.104 (0.059)*
Members aged 6 to 18 years	-0.139 (0.008)***	-0.136 (0.011)***	-0.045 (0.009)***	-0.135 (0.011)***	-0.138 (0.014)***	-0.049 (0.010)***	-0.147 (0.012)***	-0.128 (0.017)***	-0.039 (0.016)**
Members aged 19 to 60 years (incl. parents)	-0.141 (0.013)***	-0.165 (0.018)***	-0.034 (0.016)**	-0.116 (0.016)***	-0.165 (0.019)***	-0.049 (0.018)***	-0.2 (0.024)***	-0.178 (0.046)***	-0.013 (0.029)
Members older than 60 years (incl. parents)	-0.115 (0.030)***	-0.162 (0.043)***	-0.056 (0.037)	-0.03 (0.041)	-0.15 (0.048)***	-0.063 (0.045)	-0.194 (0.042)***	-0.174 (0.099)*	-0.069 (0.067)
Constant	4.497 (0.114)***	4.801 (0.140)***	5.104 (0.124)***	4.567 (0.136)***	4.726 (0.174)***	5.033 (0.154)***	4.471 (0.179)***	4.858 (0.229)***	4.996 (0.213)***
Observations	3858	1974	928	1688	1259	528	2170	715	400

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Not shown: Municipality fixed effects.

(1) The regressions don't include household members younger than 6 six years.

(2) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

Annex Table 1.17: Bolivia: Welfare Effects of BOLIVIDA Program

	<i>All Population</i>			<i>Urban Area</i>			<i>Rural Area</i>		
	Indigenous Household	Non-Indigenous Household	Non-Indigenous Poor Household	Indigenous Household	Non-Indigenous Household	Non-Indigenous Poor Household	Indigenous Household	Non-Indigenous Household	Non-Indigenous Poor Household
<i>Dependent variable: Household per capita expenditure</i>									
Percentage of the family income that belongs to the Bolivida	-0.484 (0.107)***	-0.808 (0.291)***	-0.195 (0.167)	-0.637 (0.190)***	-1.208 (0.249)***	-0.595 (0.160)***	-0.498 (0.132)***	-0.686 (0.383)*	-0.065 (0.168)
Female household head	-0.019 (0.031)	-0.086 (0.038)**	-0.073 (0.041)*	-0.025 (0.037)	-0.071 (0.039)*	-0.024 (0.036)	-0.022 (0.053)	-0.21 (0.117)*	-0.252 (0.110)**
Age of the household head	0.001 (0.005)	0.018 (0.005)***	0 (0.005)	0.012 (0.005)**	0.022 (0.007)***	0.001 (0.005)	-0.008 (0.007)	0.004 (0.011)	-0.008 (0.010)
Years of Education of the Household Head	0.002 (0.005)	-0.003 (0.007)	0.002 (0.006)	0 (0.006)	-0.002 (0.008)	0.005 (0.006)	0.007 (0.009)	-0.01 (0.013)	-0.004 (0.014)
Average Adult Education in the Household (3)	0.054 (0.006)***	0.066 (0.008)***	0.017 (0.007)**	0.054 (0.007)***	0.063 (0.010)***	0.013 (0.008)	0.051 (0.011)***	0.073 (0.015)***	0.027 (0.016)*
Rural Area	-0.13 (0.029)***	0.02 (0.048)	-0.267 (0.056)***						
Plains (1)	0.307 (0.036)***	0.085 (0.031)***	0.081 (0.031)***	0.236 (0.045)***	0.089 (0.035)**	0.096 (0.036)***	0.444 (0.056)***	0.038 (0.067)	0.003 (0.061)
Own house	-0.009 (0.023)	0.078 (0.031)**	0.035 (0.030)	0.036 (0.030)	0.077 (0.036)**	0.043 (0.032)	-0.061 (0.034)*	0.1 (0.058)*	0.039 (0.055)
Piped water	0.029 (0.028)	0.042 (0.042)	0.002 (0.033)	-0.061 (0.041)	0.141 (0.048)***	0.101 (0.042)**	0.101 (0.037)***	-0.091 (0.079)	-0.167 (0.062)***
Telephone Service (Land line or Celular)	0.423 (0.033)***	0.583 (0.039)***	0.209 (0.040)***	0.453 (0.035)***	0.571 (0.041)***	0.199 (0.040)***	0.366 (0.103)***	0.427 (0.180)**	-0.054 (0.076)
Bathroom within the house	0.126 (0.026)***	0.171 (0.045)***	0.019 (0.041)	0.06 (0.033)*	0.076 (0.069)	-0.035 (0.060)	0.177 (0.036)***	0.228 (0.059)***	0.068 (0.056)
Electricity within the house	0.412 (0.035)***	0.158 (0.051)***	0.195 (0.041)***	0.339 (0.061)***	0.21 (0.071)***	0.26 (0.050)***	0.403 (0.041)***	0.12 (0.073)	0.089 (0.059)
Members aged 0 to 5 years	-0.213 (0.014)***	-0.181 (0.015)***	-0.081 (0.013)***	-0.219 (0.018)***	-0.185 (0.018)***	-0.081 (0.015)***	-0.201 (0.021)***	-0.169 (0.027)***	-0.093 (0.025)***
Members aged 6 to 18 years	-0.122 (0.008)***	-0.13 (0.011)***	-0.044 (0.009)***	-0.123 (0.011)***	-0.139 (0.014)***	-0.053 (0.011)***	-0.125 (0.011)***	-0.107 (0.018)***	-0.028 (0.017)*
Members aged 19 to 60 years (incl. parents)	-0.109 (0.013)***	-0.135 (0.017)***	-0.018 (0.016)	-0.089 (0.016)***	-0.137 (0.019)***	-0.032 (0.017)*	-0.164 (0.024)***	-0.149 (0.047)***	-0.003 (0.030)
Members older than 60 years (incl. parents)	-0.07 (0.029)**	-0.124 (0.042)***	-0.041 (0.040)	0.001 (0.042)	-0.114 (0.046)**	-0.056 (0.045)	-0.136 (0.040)***	-0.118 (0.098)	-0.015 (0.078)
Constant	5.083 (0.113)***	4.947 (0.134)***	5.149 (0.122)***	5.008 (0.134)***	4.833 (0.160)***	5.042 (0.145)***	5.198 (0.180)***	5.259 (0.241)***	5.162 (0.220)***
Observations	3763	1952	915	1668	1244	520	2095	708	395

Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. Not shown: Municipality fixed effects.

(1) This variable is equal to 1 if the person lives in the *departamentos* of Beni, Santa Cruz or Pando.

Annex 2: Household Income Decomposition and Income Diversification

In order to examine the composition of income and income generating activities of indigenous households in comparison to that of the non-indigenous households in rural and urban areas this section presents a descriptive analysis using a Shorrocks decomposition of the family income. Then, we carry out a Herfindahl analysis that seeks to identify how diversify family income is.

Shorrocks Decomposition

The Shorrocks decomposition of the household income was made using data from the Bolivian Household Survey (Mecovi) for the year 2001 following Shorrocks (2001) and Shorrocks (1982). The decomposition includes the labor income of the household head, of the household head's spouse, and from child labor. In addition, the decomposition includes the labor income of other members of the household and the contribution of the non-labor income to the household's total income. The income decomposition is given by:

$$I(Y) = \sum_k S_k \quad (1)$$

where $I(Y)$ is a summary measure of inequality of Y and S_k is the contribution of factor k to total inequality. Alternatively, we could define $s_k = S_k / I(Y)$ as the proportional factor contributions; the Shorrocks decomposition rule indicates that $s_k = \text{cov}(Y_k, Y) / \mathbf{s}^2(Y)$.

Herfindahl Index Analysis

In order to assess the extent to which household income in Bolivia is diversified among different sources of income, we built a Herfindahl Index (HI), dividing total income into **six (ok)** categories depending on the source of the income. These categories are: wages from agricultural activities, wages from non-agricultural activities, labor income from self-employment in agricultural activities, labor income from self-employment in non-agricultural activities, child labor income, and non-labor income. The Herfindahl Index takes the value of 1 when the household's income comes from only one source and is 0 when there is complete diversification.

As expected, we found that the family income is highly concentrated, with a Herfindahl Index equal to 0.90 for the indigenous population living in rural areas and equal to 0.84 for both indigenous and non-indigenous families in urban areas. The descriptive statistics of the income shares show us that the main source of income for indigenous households is self-employment in agricultural activities (30 percent) and wages from non-agricultural activities (30 percent), whereas for non-indigenous households, the most important source of income is wages from non-agricultural activities (47 percent).

When we split the sample between rural and urban households, we found that the biggest difference is between urban and rural households and not between indigenous and non-indigenous ones. For example, in rural areas, the main source of income is self-employment in agricultural activities for both indigenous and non-indigenous households with income shares of 63 percent and 49 percent respectively. On the other hand, in urban areas, the main source of income for both indigenous (45 percent) and non-indigenous (52 percent) families is wages from non-agricultural activities. Another important difference between urban and rural households is the share of total income accounted for by non-labor income, which is around 20 percent in the urban areas but in rural areas it is equal to 13 percent and 9 percent for indigenous and non-indigenous households.

The Herfindahl Index (HI) can be calculated using the following equation:

$$HI = \sum_{i=1}^n Sh_i^2$$

Where $0 \leq Sh_i \leq 1$ is the income share that corresponds to category i , $\sum_{i=1}^n Sh_i = 1$, n is the total number of categories and $1/n \leq HI \leq 1$.

If:

$HI \rightarrow 1/n$ then family income is completely diversified.

$HI \rightarrow 1$ Then family income is completely concentrated.

Annex Table 2.2: The Herfindahl Index and Descriptive Statistics of Household Income Shares

	All Population		Urban		Rural	
	Indigenous	Non-indigenous	Indigenous	Non-indigenous	Indigenous	Non-indigenous
Herfindahl Index	0.87	0.84	0.84	0.84	0.90	0.88
<i>Mean Family Income Shares from:</i>						
Wage Agricultural	0.01	0.01	0.01	0.00	0.01	0.04
Wage Non-agricultural	0.30	0.47	0.45	0.52	0.12	0.28
Self-emp. Agricultural	0.30	0.11	0.02	0.02	0.63	0.49
Self-emp. Non- agricultural	0.24	0.22	0.34	0.25	0.11	0.10
Child Labor	0.00	0.01	0.00	0.00	0.00	0.01
Non-labor Income	0.15	0.18	0.18	0.20	0.13	0.09
TOTAL:	1.00	1.00	1.00	1.00	1.00	1.00