

Title:

Demographic change and livelihood diversification among indigenous populations of the Ecuadorian Amazon.

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Abstract

Throughout the Amazon new roads, infrastructure, oil pipelines, colonist settlements, and mechanized agriculture suggest an uncertain future for indigenous peoples. Case studies reveal that indigenous communities of the Amazon are undergoing intense socio-economic, demographic, and cultural changes. There has been limited quantitative inquiry, however, into the demographics and determinants of change occurring among indigenous populations. This paper is based on a survey of 500 indigenous households from 36 communities in the Northeastern Ecuadorian Amazon and examines patterns of fertility, migration, and non-farm employment among five different ethnic groups-- the Kichwa, Shuar, Huaorani, Cofan, and Secoya. Successful conservation/development policies that conserve biodiversity, promote sustainable livelihoods, and improve the lives of indigenous peoples depend on a better understanding of the complex dynamic of demographic, ecological, socio-economic, and cultural factors influencing indigenous resource use and livelihoods. Furthermore, such knowledge must be gathered at multiple scales including the individual, household, and community.

Extended Abstract

Recent research suggests that after decades of population decline, indigenous populations of the lowland tropics of Latin America are now experiencing rapid growth and a simultaneous political resurgence. At the same time, conservationists have pronounced indigenous lands as key to the future of Amazon forests, though there is little understanding of how these populations are changing demographically and what they will look like in coming decades and there has been little quantitative research on the reproductive practices of these populations. This paper examines the reproductive behavior, non-farm employment, and out-migration of indigenous populations of the Ecuadorian Amazon using a survey of 500 households containing 648 women of reproductive age from 5 distinct ethnic populations. In terms of fertility, the paper estimates total fertility rates, analyzes reproductive intentions and contraceptive use, and calculates the unmet need for reproductive health services.

The objective in this paper is twofold. First, the paper adds to the limited quantitative knowledge about the demography and reproductive health of indigenous populations by using survey methods at the household and community level. Second, the paper aims to

understand why fertility continues to remain so high among indigenous populations of the lowland tropics even when rural and national fertility rates have decreased sharply. Third, the paper examines determining factors in the decision to participate in non-farm employment. And finally, the paper examines individual decisions related to out-migration from their communities in the context of household and community characteristics

Methods

The paper uses data collected in a study funded by the National Institutes of Health coordinated by Bilsborrow and Lu of the Carolina Population Center at the University of North Carolina at Chapel Hill. The study was conducted with the five indigenous groups in the four northernmost provinces of the Ecuadorian Amazon (figure 1). The data collection in 2001 involved two phases of fieldwork: first, an ethnographic study in eight communities, and second, a household and community survey in thirty-six communities.

The survey data were collected from communities and households following a two-stage sampling procedure. Controlled sampling²³ was used to select communities that ensured adequate representation of the five largest ethnicities of the region and included a heterogeneity of location (accessibility), infrastructure, population size, and province, while also taking into account the great difference in the numbers of communities of different ethnicities. The number of communities of each ethnic group was chosen to be roughly proportional to population size, except that in the two smallest groups (Cofan and Secoya) most of their communities were selected. Therefore, Quichua and Shuar communities comprise over half of the sample since they are by far the largest two indigenous populations in the study area.

Interviews were conducted separately with the male and female heads of each household by male and female interviewers, respectively. This paper uses data from both the male and female questionnaires, which collected information on migration history, out-migration of members from the household, non-farm employment, household assets, and health, as well as a roster listing all members of the household by age, sex, education completed, marital status, and languages spoken. In addition, for females over the age of 12, the roster recorded the number of children ever born, children surviving, and births in the past year (past 12 months)—the three so-called Brass questions used for indirect estimates of fertility. The questionnaire also asked the female head of household about her personal reproductive history, desire for more children, and use of family planning methods. The sample consisted of 564 households. The refusal rate was under 10 percent, which is low considering indigenous communities often resist research efforts and are highly mobile. For this analysis, we use data only from complete questionnaires. Thus, the analysis here is based on 499 households and 648 women of reproductive age (15-49).

A two-step model is used to assess both the decision to participate in non-farm employment and the decision about how much time to allocate to non-farm employment activities. Logistic regression is used for the participation model while a linear regression model examines the time allocated to non-farm employment. Event history models are

used in a retrospective assessment of out-migration of individuals from households over a 10-year period prior to the survey.

Findings

Results confirm high rates of fertility and find high levels of unmet need for contraception, high levels of participation in non-farm employment, and signs of new migration streams to urban areas. Comparisons are made with non-indigenous populations in the same area based on a similar household survey conducted with colonist farmers in 1999. In general, non-indigenous populations exhibit lower fertility and greater out-migration. Surprisingly, levels of participation in non-farm employment are greater among indigenous populations, particularly employment with oil companies operating in the study area.

The paper improves understanding of the complex demographic, socio-economic, and cultural factors influencing indigenous resource use and livelihoods. In addition, the paper highlights several of the challenges that indigenous populations face as they grow demographically but are increasingly constrained geographically by encroaching non-indigenous populations and resource extracting institutions.