Labor Migration And Rural-Suburban Symbiosis In Igbo Society

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ABSTRACT

Two southeastern Nigerian villages were surveyed to study labor force migration in a traditional African society. A binary logit model was used to examine paid work differences between males and females in both Umuluwe (the ancestors' village) and Obigbo (a suburban village) and paid work differences between the residents in the two villages. The results show a strong correlation between education and employment; and between education and the likelihood of migration to Obigbo. We found that each village plays its own symbiotic part in terms of economic activity, life stages of the villagers, and gender roles.

INTRODUCTION

The urbanization of the developing world in the last fifty years has been rapid and dramatic. In 1975 it was estimated that only 23.4 percent of the population of Nigeria lived in cities (United Nations Development Programme, 2001). By 2001 the percentage of urban dwellers had increased to 44.9 (The World Bank Group, 2002). For the most part rural to urban migration has been seen has an either-or phenomenon. People leave rural areas either because of the push of harsh conditions in the countryside or because of the pull of opportunities in the cities. This paper uses survey data collected in two Ibgo villages in Nigeria; one of the villages surveyed (Umuluwe) represents the more traditional peasant village and the other (Obigbo) represents the more modern suburban village. The Nigerian Igbo (or Ibo) ethnic group inhabits the area of the lower Niger River Basin covering the states of Imo, Abia, Anambra, and Enugu, and parts of the Rivers and Delta states. Umuluwe is located about 30 kilometers west of the regional capital of Owerri, while Obigbo is about 30 kilometers from the large port city of Port Harcourt (Figure 1).

Migration occurs because of economic considerations, typically with migrants moving to an urban region for employment. Todaro (1969) and Harris and Todaro (1970) found that migrants consider the labor market opportunities that are available to them and they then choose the opportunity that will enable them to maximize their expected income, not their actual income. Todaros' findings help explain the Umuluwe-Obigbo dynamic. Migrants from Umuluwe, willing to benefit from the economic opportunities in the area of Port Harcourt city, 120 kilometers away, established Obigbo. We found that the two villages should be considered a unified whole with each one playing its own particular role in the lives of residents who maintain close ties to both villages. The results of our survey indicate several relationships. First, there exists a symbiotic relation between the two villages in terms of economic activity, life stages of the villagers, and gender roles. Demographic indicators such as age structure, gender representation by age and other characteristics are quite balanced when looking at the totals for the two villages, but striking differences are apparent between the two villages (see Table 1).

Figure 1
Map Of Nigeria Showing The Villages Of Umuluwe And Obigbo Where The Surveys Where Conducted.

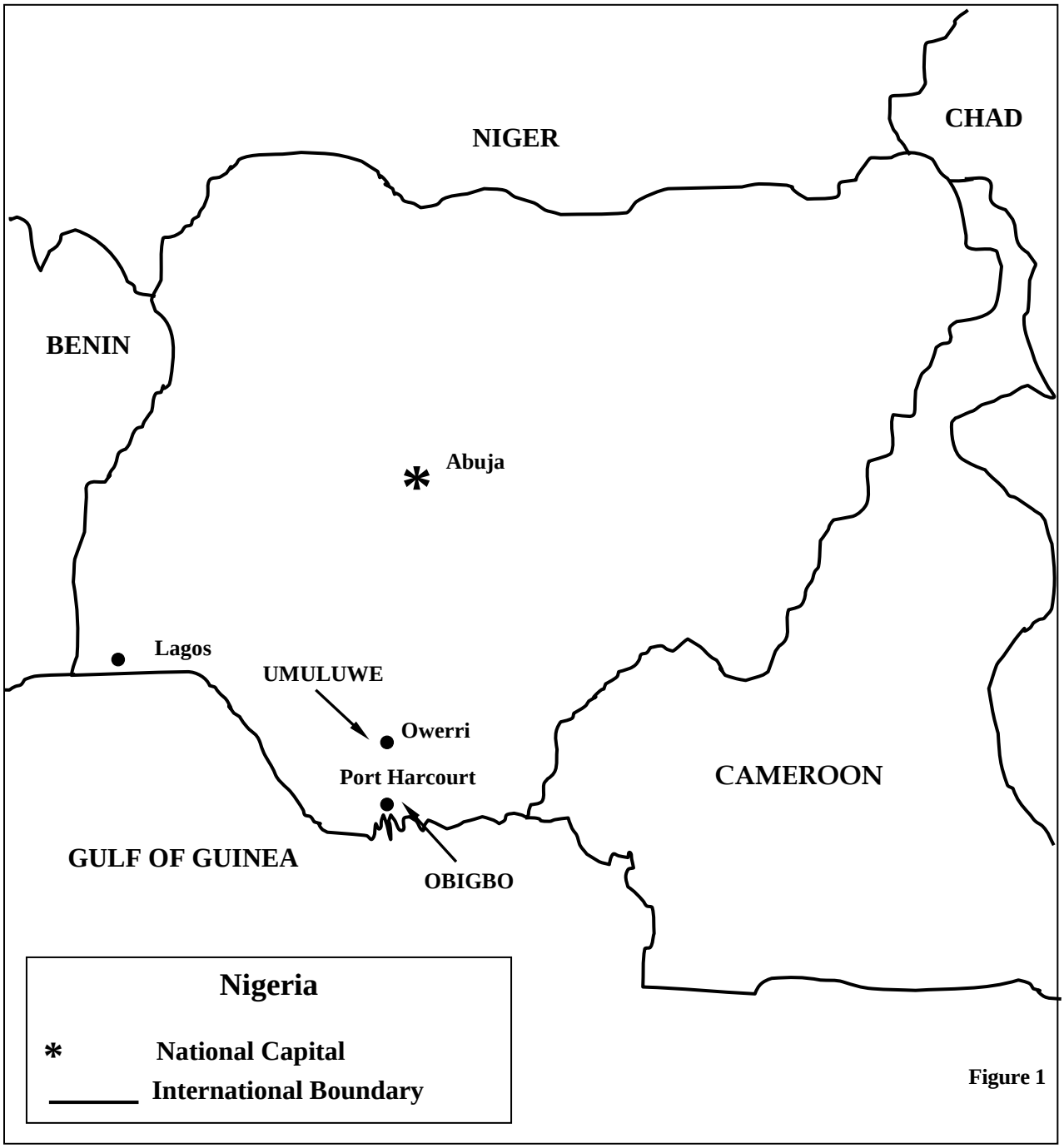

Table 1. Comparison Of Gender And Age Structure For Umuluwe And Obigbo

	UMULUWE			OBIGBO			UMULUWE AND OBIGBO		
AGE GROUP (Years)	% of U total sample	% males of U total sample	% females of U total sample	% of O total sample	% of O total sample	% females of O total sample	% of U+O total sample	% males of U+O total sample	% females of U+O total sample
18-29	9%	3%	7%	19%	16%	3%	12%	6%	6%
30-39	15%	7%	8%	28%	27%	1%	18%	12%	7%
40-49	24%	9%	16%	27%	21%	5%	25%	12%	13%
50-59	21%	7%	13%	15%	9%	5%	19%	8%	11%
60-69	19%	9%	11%	5%	1%	4%	16%	7%	9%
70-79	6%	4%	3%	5%	4%	1%	6%	4%	2%
Over 80	5%	3%	1%	1%	1%	0%	4%	3%	1%
TOTAL	100%	41%	59%	100%	80%	20%	100%	51%	49%

Second, greater employment opportunities for women exist in Obigbo than in Umuluwe. Finally, there is a strong correlation between education and employment; and between education and the likelihood of migration to Obigbo.

Understanding the labor market in developing countries is perhaps the most important factor to ease poverty. Policies concerning labor force participation and employment choices are typically researched using data on men in urban areas making these policies effectively useless for rural areas (Pagan 2002). However, to completely understand the factors that determine labor force decisions countrywide for the different genders, policies should be developed using data from urban and rural areas, as well as for men and women. This paper attempts to explain the differences in paid and unpaid work in Obigbo and Umuluwe and to provide some necessary insights into the patterns of labor force participation for men and women. Comparisons to other cultures are invalid because each has its own norms. The authors are unaware of any literature on paid and unpaid work in Igboland; therefore, no benchmark for comparison purposes is presented in this paper.

The rest of the paper is organized as follows. In Section 2, we briefly present Umuluwe and Obigbo to provide background on the study region and we describe the survey that was used to collect socioeconomic data, as well as the data. In Section 3, the types of paid and unpaid work are portrayed. Section 4 develops the methodology that is used to analyze the data and Section 5 explains the data. Section 6 presents the results of the analysis. Concluding statements are offered in Section 7.

THE SOCIOECONOMIC SURVEY

Due to an increasing population pressure and need for cash income, Obigbo was founded, after the discovery of oil in Nigeria in 1958, by villagers from Umuluwe together with other migrants. The Nigerian civil war in the late 1960's brought massive unemployment to the Igbos and encouraged another wave of immigration to Obigbo. These migrants did very well economically and word soon spread in the Igbo community that Obigbo was a village of opportunity compared to the poverty in rural areas. This relative economic well-being in Obigbo is also due to many amenities unknown and unavailable in Umuluwe including pipe-borne water, electricity, telephone-lines, and tarred roads, although these facilities may not function all the time. With nearly thirty percent of Obigbo's population of 10,000 people originating from Umuluwe it is estimated that half of the residents of Umuluwe have temporarily or permanently migrated to Obigbo. The results of the survey presented below offer further details about the relationship between the migrant village of Obigbo and the traditional home village of Umuluwe.

In May 2001, a survey was conducted in Umuluwe and Obigbo to evaluate the socioeconomic characteristics of each village and to determine the nature of the relationship between them (Gowdy, et al. 2003). Little documentation exists regarding primary research conducted in rural Nigeria. Therefore, our survey results will provide new information relating to the modernization of traditional Igbo society. Having original survey data is critical in

understanding socio-economic trends in Nigeria since the quality of published data is so poor (Kritz and Makinwa-Adebusoye 1999, 422). Further, cultural diversity is enormous in Nigeria and this makes aggregated countrywide data of limited value. Therefore the present study does not make reference to country level labor market statistics.

Using the assistance of native Igbo speakers, 236 questionnaires were completed in Umuluwe and 84 questionnaires in Obigbo. To ensure the consistency of the sample, four questionnaires with incomplete information were eliminated for Umuluwe and nine questionnaires for Obigbo. The final sample size was 232 for Umuluwe and 75 for Obigbo.

Data obtained from villagers in Umuluwe included details about the particular village unit they are part of, their extended family, their age, number of children, occupation, income, savings, debts, assets, education, taxes, local associations and groups, sources of energy used, expenditures, items purchased and self-provided, their aspirations, and their perception of environmental changes in the area. In addition to this information, Obigbo villagers answered questions regarding the year and the reason they moved from Umuluwe to Obigbo, if they own a house in Obigbo and if they live there with their family, how often they visit Umuluwe and how much money they send back to Umuluwe, and when they plan to permanently return to Umuluwe. Only people eighteen years or older were interviewed.

Age, Education, Gender, And Paid Work

In the entire sample, males and females have almost the same average age, 47.7 years and 47.5 years respectively. In the Umuluwe sample, adult men are, on average, five years older than adult women (52.4 years vs. 47.4 years), while in the Obigbo sample women are eight and a half years older (48.7 years vs. 40.2 years). However, there is a great disparity in the education of females in the sample as compared to males. Nearly 61% of women reported no formal education or have not completed their primary education, while 21.2% of women completed primary schooling and 13.9% completed some secondary education. In comparison, 23.1% of men had not finished primary education or received no formal education, while 38.5% of men completed their primary schooling and nearly 33% completed some secondary education.

These low levels of education are directly correlated to the type of work that each individual does. For instance, nearly 71% of women and 43% of men that had less than six years of education performed unpaid work. However, this educational gap narrows considerably at the tertiary education level. Four percent of women reported some tertiary education as compared to 6.4% of the men. The women respondents needed the higher levels of education in order to obtain paid work. On average, women who acquire paid work have a higher level of schooling than men.

Cash Flows From Obigbo To Umuluwe

An important aspect of the research presented in this paper is tracking how the income flow from Obigbo to Umuluwe depends on the socio-economic characteristics of the survey sample. The responses to the survey we conducted indicate that Obigbo is an important source of cash income for Umuluwe (see Table 2).

Table 2: Percentages Of Total Amount Sent Annually To Umuluwe Function Of Age

Male Age Group (Years)	Obigbo to Umuluwe Amount for age group as percentage of total amount
18-29	4%
30-39	40%
40-49	34%
50-59	18%
60-69	0%
70-79	4%
Over 80	0%
TOTAL	100%

In fact, the 'missing generation' of men sent 44% of the total amount sent to Umuluwe on an annual basis. However, those male respondents from Obigbo between the ages of 30 and 50 accounted for 74% of the total amount of money sent annually to Umuluwe. When this age range was expanded to include Igbo men aged 50 to 59, the percentage increased to 92% of the total amount of money sent to Umuluwe annually.

Several inferences can be made from this data. First, there may be a changing attitude with the younger Igbo males. For instance, male respondents less than 30 years of age accounted for only 4% of the total cash flow back to Umuluwe. A possible reason for this lack of transfer of funds is that the younger generation may be losing the traditional views of the obligations of men in their society or they earn only enough to survive. Second, men between 30 years and 60 years of age are more likely to send money back to the extended family in Umuluwe due to responsibility. In Igbo society, sons' traditional obligation is to make substantial contributions to their fathers (Caldwell and Caldwell 1988). The last inference we make is that men over 60 years of age are unlikely to send money to Umuluwe because it is likely that their parents are dead. Understanding the cash flows from Obigbo to Umuluwe provides much needed information for the different types of occupations that villagers hold.

OCCUPATIONS IN UMULUWE AND OBIGBO VILLAGES

The traditional Igbo labor market consists of three broad categories: agriculture, local manufactures, and trade (Korieh 1996, I, 9). Mention should be made about the way we classify the declared occupations of respondents in Umuluwe and Obigbo. Two broad categories are considered: paid work and unpaid work. In the category of people with unpaid occupations are farmers, students, job applicants, and also people without a declared occupation. Table 3 presents a list of occupations, gender-separated, qualifying as paid work or unpaid work, for both the samples for Umuluwe and for Obigbo.

Table 3. Major Occupations For Survey Respondents In Umuluwe And Obigbo

Major Occupation	Umuluwe			Obigbo		
	% of total sample	% males for each occupation	% females for each occupation	% of total sample	% males for each occupation	% females for each occupation
Unpaid Occupations	69.8%	29%	71%	36%	59.3%	40.7%
Farmer	66.0%	30.1%	69.9%	24.0%	44.4%	55.6%
Student	0.4%	0%	100%	2.7%	100%	0%
Applicant	0%	0%	0%	8.0%	100%	0%
None	3.4%	12.5%	87.5%	1.3%	0%	100%
Paid Occupations	3.2%	70%	30%	64%	91.7%	8.3%
Trade	8.2%	52.6%	47.4%	26.7%	90%	10.0%
Driver/Transportation	1.3%	100%	0%	8.0%	100%	0%
Business	2.1%	100%	0%	6.7%	100%	0%
Technical occupation	4.2%	100%	0%	13.3%	100%	0%
Construction-related	2.2%	100%	0%	1.3%	100%	0%
Retired	0.9%	100%	0%	0%	0%	0%
Other	11.1%	53.8%	46.2%	8.0%	66.7%	33.3%
Total	100%	41.4%	58.6%	100%	80%	20%

In Umuluwe, 51.0% of the men and 15.4% of the women surveyed perform paid work, while in Obigbo the percentages are 73.3% for men and 26.7% for women. The major occupation in Umuluwe is farming, accounting for 66% of our sample. Respondents from Umuluwe also have many other occupations as well. For example, 8.2% are traders, 4% have a technical occupation, and construction-related workers and businesspersons represent 2% each, while drivers and retired people contribute 1% respectively. Other occupations represent 11.1% of the sample, and 3.4% of the survey respondents have no declared occupation.

In Obigbo, urban proximity determines an important change in the occupational profile. Out of the total sample, farmers represent 24%, traders 26.7%, technical workers 13.3%, drivers and job applicants 8% each, businesspersons 6.6%, students 2.7%, construction workers only 1.3%, and other occupations account for 13.7%. Only 1.3% of the survey respondents declare having no major occupation. The fact that none of the Obigbo respondents declared to be retired can be related to the custom of returning at an old age to homeland Umuluwe.

Table 4. Secondary Occupation For Survey Respondents In Umuluwe And Obigbo

Secondary Occupation	Umuluwe			Obigbo		
	% of total sample	% males for each occupation	% females for each occupation	% of total sample	% males for each occupation	% females for each occupation
When Major Occup.-FARMING, Sec. Occup.:	65.9%	30.1%	69.9%	24.0%	44.4%	55.6%
Trading	8.2%	0%	100%	8.0%	16.7%	83.3%
Other than trading	12.5%	62.1%	37.9%	2.7%	100%	0%
None	45.2%	26.7%	73.3%	13.3%	50%	50%
When Major Occup.-TRADING, Sec. Occup.:	8.2%	52.6%	47.4%	28.0%	90.5%	9.5%
Farming	4.3%	40.0%	60.0%	4.0%	33.3%	66.7%
Other than farming	2.6%	66.7%	33.3%	4.0%	100%	0%
None	1.3%	66.7%	33.3%	20.0%	100%	0%
When Major Occup.-DRIVING, Sec. Occup.:	1.3%	100%	0%	8.0%	100%	0%
Farming	0.9%	100%	0%	1.3%	100%	0%
Trading	0.4%	100%	0%	0%	0%	0%
Other than farming or trading	0%	0%	0%	2.7%	100%	0%
None	0%	0%	0%	4.0%	100%	0%
When Major Occup.-OTHER, Sec. Occup.:	21.1%	73.5%	26.5%	38.7%	93.1%	6.9%
Farming	12.1%	67.9%	32.1%	2.7%	100%	0%
Trading	0.9%	0%	100%	0%	0%	0%
Other than farming or trading	3.4%	100%	0%	12.0%	88.9%	11.1%
None	4.3%	80.0%	20.0%	24.0%	94.4%	5.6%
Not Available	0.4%	100%	0%	0%	0%	0%
No major or secondary occupation	3.4%	12.5%	87.5%	1.3%	0%	100%
TOTAL	100%	41.4%	58.6%	100%	80%	20%

When we consider the secondary occupation in correlation with the major occupation (Table 4) the picture of the economy is sharper. The balance between farming and trade is very important. In both Umuluwe and Obigbo, traders who are primarily farmers constitute almost the same percentage in the total sample (8.2% and 8%), as do farmers who are primarily traders (4.3% and 4%) in the total sample. The switch is obvious when we check the percentages of respondents who declare being only farmers or only traders. In Umuluwe 45.2% of the respondents are only farmers and 1.3% of them are only traders. A reversed situation, related to urbanization, is found in Obigbo where 20% of the respondents are only traders while 13.3% are only farmers. Moreover, in Umuluwe people having only one occupation, and which is different from farming or trading, account for 4.3%, while in Obigbo they account for 24%.

In Nigeria, cars are not common and because of that 'drivers' are an interesting category along with farmers and traders. In Umuluwe, 66% of drivers have as secondary occupation farming and 33% have trading. In Obigbo half of the men having that profession do not have any other occupation, and none of them trade in order to supplement their income.

Another key finding from the survey is a gender-bias of the labor market in terms of the main occupation. In Umuluwe, the majority of female respondents are farmers (78.7% of women), while less than half (only 47.9%) of men are farmers; regarding the second most important occupation, less women than men are traders (6.6% of women and 10.4% of men); four-fifths of tailors are women, and teachers are evenly represented by both sexes. Women have a 'monopoly' on hairdressing, nursing, cashier and petty artist jobs. In Obigbo, 12% less of women are farmers while male farmers are 35% less, but more have as primary occupation trade (13.3% of women and 30% of men). Women have a 'monopoly' in the occupations of nursing and secretarial work.

METHODOLOGY

A more thorough image can be obtained by analyzing the influence of a set of carefully chosen variables on the probability that a person would be a paid worker or not. To analyze an individual's decision to participate in the labor market we use a binary choice model, specifically a binary logit model, to assess the probability for an individual to be a paid worker or not. Consider (Ichino 2001, 5) a sample of individuals indexed by $i = \{1, 2, 3, \ldots N\}$. A binary variable is observed for each individual such that:

$$Y = \begin{cases} 1 \, with \; probability \Pr(Y=1) = P \\ 0 \, with \; probability \Pr(Y=0) = 1-P \end{cases} \quad (1)$$

A set of independent variables in a vector X explains the response such that:

$$Y_i = X_i \beta + \varepsilon_i \quad (2)$$

where β is a column vector of parameters to be estimated, ε_i is the stochastic error term, and Y_i is the dependent variable.

Following this framework, in our paid work choice analysis, the dependent variable becomes:

$$Y_i = \begin{cases} 1 \;\; if \; individual \, 'i' \, has \, a \; paid \; occupation \\ 0 \;\; if \; individual \, 'i' \, has \, a \; non-paid \; occupation \end{cases} \quad (3)$$

In this case, the probability that an individual will be a paid worker can be given by:

$$P(Y_i = 1) = \log it(X\beta) = \frac{e^{X_i \beta}}{1 + e^{X_i \beta}} \quad (4)$$

and the probability that an individual will be a unpaid worker can be given by:

$$P(Y_i = 0) = 1 - \log it(X\beta) = \frac{1}{1 + e^{X_i \beta}} \quad (5)$$

Note that an error term is not included in the calculations because the value of the dependent variable for each observation is obtained through a probabilistic mechanism representing the probability given by the logit equation (Kennedy, 1998).

Following Maddala (1993), the marginal effect of a particular independent variable X_i on the probability of the occurrence of the response P(Y=1) is calculated by:

$$\frac{\partial P(Y=1)}{\partial X_i} = \frac{e^{X_i \beta}}{\left[1 + e^{X_i \beta}\right]^2} \beta_k \quad (6)$$

The marginal effects represent the incremental change in the predicted probability caused by a unitary change in the independent variable considered. We use the marginal effects to examine the variability of an individual's socio-economic characteristics on the probability of paid work.

There are no universally accepted goodness-of-fit tests for limited dependent variable regressions due to the fact that the variance of the dependent variable depends on its rate of incidence (the number of events classified as either 1 or 0 in our case). Therefore, three different tests are used, pseudo-R^2, McFadden R^2, and Estrella R^2. The theoretical range for pseudo-R^2 is zero to one. The models predict well when goodness-of-fit measures have values close to or above 0.20, which is an acceptable value for logit estimates (McMillen, 1989).

The model described above provides the basis for an analysis of paid work choice in two cases:

- Male vs. Female villagers in both Umuluwe and Obigbo, and
- Umuluwe vs. Obigbo residents.

DATA DESCRIPTION

The model introduced in the previous section (equations 2 and 3), estimated the probability that a person has a paid occupation using three types of explanatory variables: personal characteristics, household demographics, and economic conditions in the village of residence. Personal characteristics considered are: gender (represented using a dummy variable), age and age squared, the level of education (described using four dummy variables to represent the highest educational achievement: some primary education, completed primary education, some secondary education, and some tertiary education), and marital status (using also a dummy variable for married or singles). Household demographics include: the number of very young children living in the household (less than 6 years old, the age they start attending primary school), the number of young children likely to attend primary school (6 to 12 years old), and the number of children age 13 to 15 years old who can work for a payment in order to help their mother and still live in the maternal household. The economic conditions in the traditional village versus the suburban village are captured using a dummy variable to differentiate between the villagers of Umuluwe and those of Obigbo in the complete sample. The term 'complete sample' stands for the union of the two separate samples for Umuluwe and Obigbo. The examination of the complete sample is relevant because of the symbiotic relationship between the two villages.

The gender roles in the provision of food for the household in Igbo society derive from the traditional separation between 'male' and 'female' crops. The study by Ezumah and Di Domenico (1995) concludes that for modern Igbos gender participation in agricultural production is influenced by various factors like location, marital status, participation in non-agricultural activities, and ideologies influencing people's perception of male/female activities. The traditional roles of men and women in Igbo society and the types of occupations they share or not suggest that gender is an explanatory variable of interest.

In some modern societies age is related to employed life in a very clear way, men and women each have their own age thresholds for retirement. But in a society like the Igbo, the border between paid work and unpaid work, between self-employed and retired, is blurred. People work as long as they are able and also to pursue any occupation accessible to them, and this is the reason for imposing only a lower limit for age in our samples (18 years) and no upper limit for either males or females. Our survey shows that most of the men and women in their old age are still farmers or traders.

The level of education is an important variable because it allows us to check if the male-oriented bias is important for the type of occupation (paid or unpaid) women have compared to men. Marital status can be relevant for this Igbo labor market analysis because of the social mores in Igbo society governing the freedom of movement for women compared to men (Igbo women cannot travel unless they are escorted by a male relative).

Given the traditional roles of mothers (caretakers) and fathers (receivers of benefits from children but with no customary obligation attached to it) in child rearing, the number of children younger than 16 years still living in the family compound can affect differently the likelihood of a paid occupation for their parents. Furthermore, children have different effects on the probability of a paid occupation for different age groups.

EMPIRICAL RESULTS

The results of the study take the following format. First, we examine the paid work differences between men and women for the entire sample (Models 1-4; Table 5). Second, we examine the paid work differences between the respondents in the two villages (Models 6-10; Table 6). Before continuing with the estimated logit models it should be noted that the pseudo-R^2 measures suggest that the regressions have a reasonable fit (close or above 0.20).

Gender And Labor Market Decisions

Due to traditional roles that men and women play in the Igbo society, it follows that the factors affecting paid working decisions will differ for women and men.

Table 5. Probability Of A Female Or Male To Do Paid Work In Umuluwe And Obigbo

Independent Variable	Model 1 (F)		Model 2 (M)		Model 3 (T)		Model 4 (T)	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Constant	-8.317	3.940	-2.564	2.186	-4.539	1.738	-4.333	1.622
	(0.035)		(0.241)		(0.009)		(0.008)	
	[-0.038]		[-0.619]		[0.960]		[-0.940]	
Umuluwe/Obigbo villager	-1.446	1.118	-0.475	0.437	-0.389	0.408	-0.826	0.334
	(0.196)		(0.277)		(0.341)		(0.013)	
	[0.013]		[-0.113]		[-0.085]		[-0.189]	
Gender	--	--	--	--	1.775	0.347	--	--
	--		--		(0.000)		--	
	--		--		[0.361]		--	
Age	0.332	0.192	0.120	0.094	0.118	0.072	0.142	0.067
	(0.084)		(0.202)		(0.104)		(0.033)	
	[0.002]		[0.029]		[0.025]		[0.308]	
Age-squared	-0.004	0.002	-0.001	0.0009	-0.002	0.0007	-0.002	0.0007
	(0.077)		(0.092)		(0.036)		(0.024)	
	[-0.00002]		[-0.0004]		[-0.0003]		[-0.337]	
Some primary education	-19	8360	1.258	1.579	-0.431	1.111	-0.695	1.099
	(0.998)		(0.426)		(0.698)		(0.527)	
	[-0.066]		[0.245]		[-0.084]		[-0.132]	
Completed primary education	1.78	0.927	1.292	0.551	1.391	0.446	1.949	0.425
	(0.054)		(0.019)		(0.002)		(0.000)	
	[0.015]		[0.294]		[0.312]		[0.440]	
Some secondary education	3.468	1.047	1.725	0.614	2.168	0.494	2.741	0.466
	(0.001)		(0.005)		(0.000)		(0.000)	
	[0.080]		[0.369]		[0.489]		[0.595]	
Some tertiary education	4.889	1.574	1.463	0.869	2.666	0.748	3.007	0.709
	(0.002)		(0.092)		(0.000)		(0.000)	
	[0.330]		[0.281]		[0.570]		[0.605]	
Married	0.978	1.039	0.142	0.700	0.389	0.496	--	--
	(0.347)		(0.839)		(0.432)		--	
	[0.003]		[0.035]		[0.078]		--	
Children 0-5 years old	-0.369	0.369	0.017	0.275	-0.048	0.208	0.057	0.188
	-0.318		-0.95		-0.817		-0.763	
	[-0.002]		[0.004]		[-0.010]		[0.123]	
Children 6-12 years old	0.095	0.312	0.022	0.2	0.068	0.161	0.05	0.15
	-0.76		-0.912		-0.675		-0.74	
	[0.0004]		[0.005]		[0.014]		[0.108]	
Children 13-15 years old	-1.156	0.619	0.029	0.345	-0.203	0.276	-0.235	0.272
	-0.062		-0.933		-0.462		-0.386	
	[-0.005]		[0.007]		[-0.043]		[-0.511]	
Pseudo-R^2	0.401		0.184		0.343		0.272	
Estrella R^2	0.369		0.24		0.429		0.345	
McFadden R^2	0.401		0.183		0.343		0.272	
N	151		156		307		307	

NOTE:
F stands for a female sample for both Umuluwe and Obigbo together, **M** stands for a male sample for both Umuluwe and Obigbo together
T stands for the total sample of both Umuluwe and Obigbo together, **P**-values are reported (in parentheses) below coefficient estimates
Marginal effects are reported [in brackets] below P-values

As shown in Table 5, the following factors were found to be significant at the 90% level in explaining whether a woman (Model 1) was a paid worker or not: age, age-squared, completed primary education, some secondary education, some tertiary education, and children thirteen to fifteen. Age had a positive coefficient, indicating that as a woman's age increases so does the probability of her doing paid work. However, the effect of age is minor, as indicated by the marginal effect of 0.002. The result indicates that a one-unit increase in age results in a 0.2% increase in the probability that a woman is a paid worker. Age-squared has a negative coefficient indicating that as age increases the probability that a woman is a paid worker decreases. This result should be expected as young women (ages 20 to 40) represent approximately 70% of the female sample. Basically, age-squared exaggerates the marginal differences of paid work opportunities between the age groups.

For men (Model 2), significant factors in explaining the type of work paid or unpaid they perform were: age squared, completed primary education, some secondary education, and some tertiary education. Similar to the model on women, age-squared has a negative coefficient indicating a similar result. The marginal effects for completed primary education and secondary education are significantly higher than for women (0.245 vs. 0.015 and 0.369 vs. 0.080) while for the tertiary education variable, the marginal effect for men is lower than for women (0.281 vs. 0.330). These results tell us that a completed primary education or some secondary education increases the probability that a man is a paid worker more than for a woman (with 24.5% vs. 1.5% for completed primary education and with 36.9% vs. 8% for some secondary education), while some tertiary education increases the probability of being a paid worker with 33% for women and only with 28% for men. These results are expected as our analyses of the survey data in previous sections indicated. As long as women are mainly wives and mothers in Igbo society, the decision to pursue a paid activity is slightly influenced by their level of education (of course stronger for those with some secondary education than for those with only primary education completed). But when a woman in Umuluwe or Obigbo has some tertiary education, this is a stronger incentive to have a job (paid-work). The effect of tertiary education is stronger for women than for men because the types of jobs that are available for each gender (gender segregated job market) in each of the villages. As mentioned previously, married women live in their husband's village and are less tempted than men to migrate to search for a job, even if they have a higher level of education. In Umuluwe, the women with tertiary education are mainly teachers, while in Obigbo they have many different other occupations.

The number of children is not significant for the probability that a man is a paid worker because the cost of raising children is not supported as much by parents as by the extended family (uncles, aunts, and grandparents). Moreover, in Igbo society, providing food for children is not a man's responsibility but a woman's.

The reason for analyzing the total sample (men and women), with both Umuluwe and Obigbo villages considered as one unit, is to obtain more insights about the probability that a member of Umuluwe's extended families, either living on ancestors' land or as a migrant in Obigbo, is a paid worker or not (Models 3 and 4). Model 3 considers the same variables as Models 1 and 2 but also includes a dummy variable for gender. In this case, gender, age-squared, completed primary education, some secondary education, and some tertiary education are the significant variables at the 95% confidence level. Given the strongly gender separated labor market in both villages, we eliminated the gender and the status dummy variable in Model 4, in order to see if the interactions between any of the variables become stronger or more pronounced. And the answer is 'yes,' the dummy showing to which village-sample the individual belongs becomes significant, and the significance of completed primary education variable is increased also. The village dummy has a negative coefficient indicating that being an Umuluwe villager decreases the probability of having paid work. Also, the marginal effect for this variable is –0.189, suggesting that living in Umuluwe compared to Obigbo decreases (by 18.9%) the probability of paid work.

Village Location And Labor Market Decisions

The second type of investigation (Table 6) discusses the two village-samples and again the total sample. This analysis addresses the differences from the point of view of labor market decision-making, between the traditional village Umuluwe and the suburban village Obigbo.

Table 6. Probability Of A Person To Do Paid Work: Umuluwe And Obigbo

Independent Variable	Model 5 (U)		Model 6 (U)		Model 7 (O)		Model 8 (O)		Model 9 (T)		Model 10 (T)	
	Coef.	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**	**Coef.**	**SE**
Constant	-3.129	2.007	-4.363	1.882	-9.539	4.976	-9.476	4.916	-4.882	1.710	-5.074	1.614
	(0.119)		(0.020)		(0.055)		(0.054)		(0.004)		(0.002)	
	[-0.521]		[-0.780]		[-2.355]		[-2.339]		[-1.027]		[-1.096]	
Gender	1.827	0.423	--	--	0.089	1.044	--	--	1.873	0.335	--	--
	(0.000)		--		(0.932)		--		(0.000)		--	
	[0.327]		--		[0.022]		--		[0.377]		--	
Age	0.058	0.080	0.122	0.076	0.383	0.217	0.382	0.216	0.125	0.073	0.153	0.069
	(0.466)		(0.108)		(0.077)		(0.077)		(0.086)		(0.027)	
	[0.0097]		[0.0219]		[0.094]		[0.094]		[0.026]		[0.033]	
Age-squared	-0.0009	0.0008	-0.001	0.0007	-0.005	0.002	-0.005	0.002	-0.0016	0.0007	-0.002	0.0007
	(0.267)		(0.117)		(0.035)		(0.036)		(0.028)		(0.017)	
	[-0.0001]		[-0.0002]		[-0.0012]		[-0.001]		[-0.0003]		[-0.0004]	
Some primary education	-0.333	1.163	-0.470	1.135	-18	26498	-18	26498	-0.481	1.116	-0.749	1.098
	(0.775)		(0.679)		(0.999)		(0.999)		(0.666)		(0.495)	
	[0.0509]		[-0.075]		[-0.634]		[-0.635]		[-0.091]		[-0.139]	
Completed primary education	1.441	0.513	2.062	0.492	3.258	1.702	3.312	1.586	1.402	0.445	2.066	0.422
	(0.005)		(0.000)		(0.056)		(0.037)		(0.002)		(0.000)	
	[0.278]		[0.427]		[0.631]		[0.637]		[0.314]		[0.463]	
Some secondary education	2.208	0.566	2.808	0.539	4.121	1.731	4.174	1.614	2.175	0.493	0.860	0.462
	(0.000)		(0.000)		(0.017)		(0.010)		(0.000)		(0.000)	
	[0.466]		[0.596]		[0.725]		[0.730]		[0.489]		[0.613]	
Some tertiary education	3.932	1.210	4.356	1.177	3.007	1.762	3.049	1.698	2.710	0.745	3.185	0.704
	(0.001)		(0.000)		(0.088)		(0.073)		(0.000)		(0.000)	
	[0.733]		[0.746]		[0.473]		[0.476]		[0.576]		[0.623]	
Married	-0.531	0.683	-1.193	0.658	3.655	1.735	3.712	1.598	0.2346	0.4702	-0.161	0.417
	(0.437)		(0.070)		(0.035)		(0.020)		(0.618)		(0.700)	
	[-0.0998]		[-0.269]		[0.723]		[0.729]		[0.047]		[-0.035]	

Table 6. Probability Of A Person To Do Paid Work: Umuluwe And Obigbo (Continued)

Independent Variable	Model 5 (U)		Model 6 (U)		Model 7 (O)		Model 8 (O)		Model 9 (T)		Model 10 (T)	
	Coef.	*SE*	*Coef.*	*SE*	*Coef.*	*SE*	*Coef.*	*SE*	*Coef.*	*SE*	*Coef.*	*SE*
Children 0-5 years old	0.125	0.237	0.311	0.226	-1.468	0.689	-1.481	0.672	-0.066	0.206	0.006	0.192
	(0.596)		(0.169)		(0.033)		(0.027)		(0.749)		(0.977)	
	[0.0208]		[0.055]		[-0.363]		[-0.366]		[-0.014]		[0.0012]	
Children 6-12 years old	-0.046	0.190	-0.025	0.178	-0.150	0.399	-0.156	0.391	0.097	0.157	0.108	0.146
	(0.808)		(0.889)		(0.707)		(0.690)		(0.536)		(0.457)	
	[-0.0077]		[-0.0045]		[-0.037]		[-0.039]		[0.020]		[0.023]	
Children 13-15 years old	0.023	0.312	0.052	0.311	-1.103	0.852	-1.106	0.850	-0.244	0.272	-0.335	0.267
	(0.940)		(0.868)		(0.195)		(0.193)		(0.371)		(0.210)	
	[0.0039]		[0.0092]		[-0.272]		[-0.273]		[-0.051]		[-0.072]	
Pseudo-R^2	0.327		0.256		0.410		0.410		0.341		0.257	
Estrella R^2	0.385		0.304		0.498		0.498		0.427		0.327	
McFadden R^2	0.327		0.256		0.410		0.410		0.341		0.257	
N	232		232		75		75		307		307	

NOTE:
U stands for the total Umuluwe sample
O stands for the total Obigbo sample
T stands for the total sample of both Umuluwe and Obigbo together
P-values are reported (in parentheses) below coefficient estimates
Marginal effects are reported [in brackets] below P-value

The difference between Models 5 and 6 (for the non gender-separated Umuluwe sample), Models 7 and 8 (for the non gender-separated Obigbo sample), and Models 9 and 10 (for the total non gender-separated Umuluwe and Obigbo sample), is that Models 6, 8, and 10 do not use the gender dummy variable (which is highly significant for the Umuluwe and total samples but not for the Obigbo sample) in order to see if its influence is concealing the weaker influence of other variables. The gender dummy is not significant for the Obigbo sample probably because the ratio of men to women is 4:1, while the ratios for the Umuluwe sample is 1:1.4 and for the total sample is about 1:1. Also, another difference for the Obigbo sample is the significance of the dummy variable showing if the person has very young children (0 to 5 years old). This variable indicates that if a respondent from Obigbo had children from 0 to 5 years of age, the probability of performing paid work decreases substantially, slightly more than 36%.

For the Umuluwe sample, in Model 5, the probability for a villager to work for pay depends significantly (and with a positive coefficient) on the following variables: gender, completed primary education, some secondary education, and some tertiary education. Tertiary education has the strongest marginal effect in this model, signifying that an Umuluwe villager that achieves this level of education increases his or hers probability to have a job (paid work, employed or self-employed) by 73%. When the gender variable is dropped (Model 6), the significance of the completed primary education variable is enhanced, while the status dummy becomes significant and with a negative coefficient. Its marginal effect of 0.269 suggests that marriage for a person in Umuluwe decreases (by 26.9%) the probability of paid work.

Compared to the Umuluwe sample, some differences for the Obigbo sample should be mentioned regarding the significant variables. When the gender dummy is considered (Model 7), it is not significant, as we have previously mentioned. Age and age squared are significant, while completed primary education, some secondary education, and some tertiary education are significant but at a lower level than for Umuluwe (probably because in Obigbo are people who declared themselves as 'applicants' for a job but not working at the moment of the survey). Different from the Umuluwe, the status dummy is significant at a higher level, has a positive coefficient, and has a strong marginal effect (0.723). Being married in Obigbo means an increased probability to have a job and not only a subsistence activity, possibly because the land belonging to the extended family is in Umuluwe.

The negative coefficient for the dummy showing if the person has children younger than 5 years is probably related to the absence of an extended family in Obigbo to help with raising the children, which reduces the probability of having a paid activity for the parents. Not using the gender dummy (Model 8) does not make much difference for the Obigbo sample, because of the high ratio of males to females (4:1). In fact, the absence of the gender dummy slightly enhances the significance of the dummy for completed primary education.

When the whole sample, Umuluwe and Obigbo together as one unit, is considered (Models 9 and 10), the status dummy and the children 0-5 years old dummy are not significant. The significant variables in Model 9 are: gender, age, age-squared, completed primary education, some secondary education, and some tertiary education. When in Model 10 the gender dummy is dropped, the significance is enhanced for the age, age-squared, and completed primary education variables.

CONCLUSIONS

Labor market responses to market forces in Igbo society have led to the breakdown of traditional gender roles. For example, traditionally women held significant economic power over the palm oil and cassava trades; commercialization of these crops transferred this power to men. Also, cultural traditions made it difficult for women to compete with men in long-distance trade in agricultural and commercial goods. The relationship between gender and the type of occupation (paid vs. unpaid work) was examined in detail using the survey data for Umuluwe and Obigbo villages. The survey of occupations (both paid and unpaid occupations) shows for both villages a gender-bias with respect to the main occupation. The discussion of secondary occupation in relation with the primary (major) occupation clarifies the picture of modern Igbo labor market. A binary logit model was used to examine (1) paid work differences between males and females in both Umuluwe and Obigbo and (2) paid work differences between the two villages. The probability that an individual is a paid worker or not is assessed using as independent variables personal characteristics, household demographics, and the economic conditions in the village of residence.

The results are consistent with the cultural and institutional pattern in Igbo society. Igbo women are mainly wives and mothers and the level of education, except for tertiary education (undergraduate), has a reduced weight in woman's decision to pursue a paid occupation than for a man. The mother (not the father) and the extended family have the main role in fostering Igbo children and as a result the number of children is not significant for a men's decision to be a paid worker. The migration phenomenon (men leave temporarily the ancestors' village and the wife/wives and children are left behind) and the custom of land belonging to the extended family (in the ancestors' village) are emphasized by the increased probability in Obigbo (for the surveyed people which originate from Umuluwe) compared to Umuluwe (ancestors' village) that a married man is not a subsistence farmer but a paid worker.

The interdependencies between Umuluwe and Obigbo captured in our survey shed light on the impact of modernization, and the response to it of the Ibgo society in Southeastern Nigeria. Even if the modernization and commercialization of traditional economic activities in Igboland has led to profound changes, the institution of extended family has allowed the communities of Umuluwe and Obigbo to form a symbiotic relationship that has helped maintain cultural traditions. However, as long as expected income is greater in Obigbo migration from Umuluwe will continue, leading to economic imbalances that are commonplace in most underdeveloped countries. Therefore, the implications of these relationships described in this paper are important for public policy makers seeking to develop strategies for promoting gender and wage equality in both the urban and rural regions of Nigeria.

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