

This study examines the extent to which social factors influence entry into formal or informal sector employment in Brazil. Using data from the 1980 Brazilian Census, this research shows that low education and being female are the primary characteristics determining participation in the formal sector. Although being female is strongly and positively related to participation in the informal sector market, it is women with the lowest levels of schooling and non-White women who especially participate in informal employment. Gender does not make a difference for those with at least a high school education. Youths and non-Whites are also disproportionately represented in the informal sector.

Who Gets Formal Sector Jobs?

DETERMINANTS OF FORMAL-INFORMAL PARTICIPATION IN BRAZILIAN METROPOLITAN AREAS

EDWARD E. TELLES

University of California, Los Angeles

Much of Brazil's rapidly growing urban population has been excluded from its modern industrial development (Cacciamalli, 1988; Hirata & Humphrey, in press; Merrick & Graham, 1979; "O Brasil," 1989). Many of these workers have been absorbed by the informal, unprotected, or hidden labor market, as it is variously known.¹ Informal sector work is often considered a form of underemployment enabling developing countries to maintain misleadingly low unemployment rates (De Soto, 1989; Marshall, 1987; Portes, Blitzer, & Curtis, 1986; Roberts, 1989b). Although much effort has been expended in seeking to define how formal and informal labor markets are structured and how the absorption of workers is linked to development, little is known about the characteristics that distinguish informal from formal sector workers.

From a structural perspective, urban labor markets in industrialized as well as semi-industrialized developing economies, like Brazil, are typically divided into two sectors. Although there is a small but growing informal sector in industrialized countries (Fernandez-Kelley & Garcia, 1989; Sassen-Koob, 1984), the core-periphery dualism has been emphasized under the

WORK AND OCCUPATIONS, Vol. 19 No. 2, May 1992 108-127

© 1992 Sage Publications, Inc.

108

assumption that the economy is fully capitalized and state regulated, but worker rewards may depend on firm characteristics such as size, level of technology, and the presence of internal career ladders. In less developed countries, the emphasis is on the formal-informal dualism reflecting the concern with an economy in which a large portion of the population works in enterprises that are semicapitalized and operate outside of state regulation. Certainly, the formal sector could be further subdivided into core and periphery; however, the importance of this dualism pales in importance compared to formal-informal in Third World economies where formal sector jobs of any kind are often not available to a large portion of the population that must work for everyday survival.

This study examined the extent to which sociodemographic factors, particularly gender, education, race, and migrant status, influence the insertion of individuals into formal or informal sector work in Brazilian metropolitan areas. The few studies that have analyzed the social characteristics of informal workers are generally bivariate and based on empirical evidence from small sample surveys, which are often restricted to a single neighborhood, industry, or urban area. Through multivariate analysis drawn from the 1980 Census of Brazil, this study sought to overcome such limitations.

THEORETICAL BACKGROUND

A common assumption among both neoclassical and Marxist economists is that job seekers in the urban areas of developing countries generally want full-time salaried employment. Consequently, they claim, the informal sector is composed of unsuccessful job seekers, who are predominantly poorly educated and/or recent migrants to the urban labor market. Workers with little education are often considered unemployable by formal sector employers because of their alleged inability to perform job tasks or learn modern work habits. Presumably, education is the principal criterion by which the labor market filters the oversupply of workers into informal sector jobs (Todaro, 1985).

Early studies on the urban economies of developing countries showed that recent migrants, with an emphasis on rural origin migrants, are also highly represented in the informal sector. After arrival, migrants become familiarized with local labor markets, and consequently, their likelihood of securing formal sector work improves (Harberger, 1971; Roberts, 1978; Todaro, 1969). Rural origin migrants are particularly likely to land informal jobs because of their lack of familiarity with the urban labor market.

On the other hand, more recent studies point to the fact that migrants, particularly males, are as likely as natives to participate in the informal sector (Koo & Smith, 1983; Morley, 1982; Roberts, 1989a). However, in Brazil and in much of Latin America, rural areas contain ever smaller proportions of national populations, and consequently, urban to urban migration has become the dominant form of migration (Martine & Camarano, 1984). Although it is an increasingly prevalent mode of migration, it is far less studied than is rural to urban migration.

A recent wave of literature has pointed to the increasing participation of women in the growing informal sector of Latin America (Benería & Roldan, 1987; Gonzalez, 1986; Hirata & Humphrey, in press; Jelin, 1980). Both labor demand and supply-side factors may account for the disproportionate participation of women in the informal sector. Formal sector employers often prefer men because they assume that males are more committed to work and can perform the heavy work demanded in many industrial jobs (Anker & Hein, 1985). However, there is contrasting evidence pointing to an increasing preference for women in the growing "light industries," in the belief that women are more reliable (Benería & Roldan, 1987). Additionally, women workers are often considered secondary workers because their status as wives is seen as providing only supplementary income to the household. Consequently, working wives are perceived to be less committed to paid formal employment and are pushed into informal employment. However, because in Brazil a large and increasing proportion of women are single parents or live alone and spend a greater number of years of their lives as single, divorced, or widowed (Goldani, 1989), many Brazilian females thus become primary workers (working heads of household) but continue to participate in the informal sector (Jelin, 1980; Taube, 1986).

The earning status of women in the household, though, is only one explanation for why women may be in the informal sector. A labor supply argument proposes that women may prefer informal work because it affords greater flexibility in the number of hours worked and allows ease of entry into and exit from the paid labor force. This permits women to balance domestic duties with employment outside the home and to take leaves for pregnancy, child care, or other domestic exigencies. Clearly, the number of hours that women devote to domestic chores is highly variable and depends on a number of factors including whether the family is nuclear or extended, family life cycle stage, number and age of children, availability of assistance from within or outside the nuclear family, and the income of other household members (Roldan, 1985). Availability of help in domestic chores may be particularly limited in poor households because they cannot afford to pay for personal services or labor-saving domestic technology. At the same time, the

need for women in poor households to participate in the labor force is especially great because their income is crucial to meeting household subsistence needs. Thus there is a positive relationship between domestic chores and the need to work. Finally, the jobs that are most accessible for poor and low-skilled women are often informal sector jobs that are typed as female jobs, such as paid domestic housework and sewing.

The sociological literature (in English) about Brazilian race relations has been scant since the 1960s when a series of studies reported that Brazilian race relations were much better than those of the United States (see Skidmore, 1985, for background to the Brazilian race relations literature). A recent wave of research, mostly in Portuguese and based largely on official statistics available for the first time (including the 1980 Brazilian Census), has shown that non-White² workers in Brazil have significantly poorer labor market chances than do Whites (Hasenbalg, 1985; Oliveira et al., 1983; Silva, 1985).³ Despite the large number of studies done in Brazil on marginality and the informal sector, this literature has neglected race, presumably on the assumption that it is unimportant.

A common argument in the Brazilian academic community has a familiar ring for readers of some early U.S. human capital literature and is one that is based on the 1960s Brazilian race relations writings. The argument is that modern capitalist employers select employees on the basis of a candidate's qualifications and productivity; hence hiring tends to be color blind. If non-White workers do not receive the benefits of formal sector jobs, it is because they have low levels of education, are more likely than Whites to be recent arrivals to the local labor market, and are concentrated in the least developed urban areas. Thus race is not significant among Brazilian analysts of the urban informal sector.

The manner in which the previously mentioned variables affect entry into the labor market is often seen as additive, with interactions rarely contemplated. But the interaction of gender and such other variables as education appears particularly important for understanding who gets formal sector jobs.

Although gender and education may strongly influence the probability of being in formal sector employment, the effect of schooling is likely to be different. That is, men with low education often are able to gain formal sector employment, whereas women with low education are much more likely to take informal sector jobs because formal sector jobs are often inaccessible to them. On the other hand, men and women with relatively high levels of education are much more likely than their low-educated counterparts to obtain formal sector jobs. However, the effect of additional years of schooling for gaining formal sector jobs seems to be less on men than on women.

This study sought to understand the extent to which the preceding factors influence the insertion of workers into the formal or informal sector in Brazil. Using a national data set on the major metropolitan areas of Brazil, the article reexamines the extent to which education, migrant status, and gender affect being in formal sector employment in Brazil. It also focuses on race, a previously neglected variable in studies of segmented labor markets in Brazil. Finally, close attention is given to possible interactions between gender and education, household status, and race.

INFORMAL SECTOR WORK

The lack of unemployment insurance or other kinds of social protection for most workers in Third World countries and the lack of sufficient employment compels the potentially unemployed to take jobs offering little or no security, low pay, and few work hours. The growing size of the labor force resulting from natural increase, migration from both rural and urban areas, and the increasing labor force participation of women have further weakened the labor-absorbing capacities of Third World urban economies, such as those in Brazil. On the other hand, there is a growing recognition that even large formal sector enterprises use informal labor, both directly through hiring and indirectly through subcontracting (Portes & Sassen-Koob, 1987). Thus many informal sector jobs may be linked to modern industrial development.

In the developing world, the "formal-informal labor market" concept had originally sought to separate workers who are directly absorbed by the modern capitalist economy from a "surplus" labor force that was forced to rely on the creation of makeshift or "precapitalist" forms of employment (Souza & Tokman, 1976). The notion of informal sector had replaced the previously used term "marginal" that mistakenly described the urban poor by virtue of their living conditions and consequent high level of alienation, while making little attempt to link their condition to the wider political economy. The criteria for labor market formality has since gone beyond this vague definition to many others ranging from those that emphasize the productivity of enterprises to those that emphasize the stability and salaried nature of work.

The definition of the informal sector that today has the greatest consensus refers to *legality*. Since the first International Labor Organization (ILO) study on the subject, analysts have emphasized the presence or absence of state regulation, often indicated by social security payment (Hart, 1973; Portes, 1985; Roberts, 1978). Employment categories based on the absence of social security generally mean cheaper production because workers are not covered

by protective legislation, workers and their employers avoid the costs of paying health and unemployment benefits, employers often pay less than the minimum wage, and hiring and firing can be done on a casual basis. In Brazil, as in the rest of Latin America, access to social security also designates an officially recognized work contract shared by both employers and employees (Malloy, 1985; Merrick, 1976; Portes, 1985).

This study used a definition of the informal sector similar to that offered by Portes and Castells (1989):

a process of income-generation characterized by one single feature: it is unregulated by the institutions of society, in a legal and social environment in which similar activities are regulated. (p. 12)

Such a definition excludes the regulated self-employed⁴ and thus appears to reflect the concept of the informal working class as defined in Portes's earlier work (1985; Portes et al., 1986). In Brazil, this definition is enhanced by the finding, based on intensive ethnographic fieldwork, that the lack of social security payment, rather than occupation, industry, or self-employment, was by far the best indicator for differentiating jobs (Silva, 1981). Also, all paid domestic workers fall under this informal sector definition, whether or not they receive social security, because even the social security protections covering a small proportion of them are considerably less enforced than those of other workers (Merrick, 1976).

DATA AND METHOD

Data for this analysis are from the 3% public use sample of the 1980 Brazilian Census produced by the *Instituto Brasileiro de Geografia e Estatística* (IBGE). Included are all the economically active population (except "Asians" and "Others"⁵) with incomes and in nonextractive industries in the nine largest Brazilian metropolitan areas. The economically active population denotes age 10 years as the lower age limit and excludes persons currently attending school.

The nine metropolitan areas represent 44% of Brazil's urban population. Additionally, population growth in metropolitan areas constitutes fully 44% of Brazil's total growth, underscoring the increasing importance of these large urban centers in Brazil (Martine & Camarano, 1984). The reliability and coverage of the 1980 Census of Brazil are quite good, particularly in metropolitan areas, and reflect Brazil's long-standing censal tradition and its international reputation for data collection.

To define the informal sector, the study used information in the 1980 Brazilian Census on social security protection. The availability of this variable makes the data source rather unique, whereas the omission of variables that measure "protectedness" of workers in the statistics of most other countries has led to an underestimation of the economically active population in substandard forms of employment (Portes, 1985; Roberts, 1978; Silva, 1981). In sum, informal sector workers include all paid domestic workers and workers who do not pay for or receive social security benefits, except highly educated professionals or administrators.⁶

To analyze the effects of socioeconomic factors on securing formal sector employment, a logit model was used. Its parameters were estimated using a maximum likelihood method to accommodate the dichotomous dependent variable — working in the formal sector (= 1) or in the informal sector (= 0) (Maddala, 1983).⁷ Logit parameters thus referred to estimates of the effect of each variable on the log likelihood of being in the formal sector compared to informal sector. Parameters corresponding to gaining informal sector work compared to formal sector work would be the same except that the signs are reversed. The first of these was used because it is conceptually easier to interpret.

The two models presented compared (a) the entire formal sector work force to the informal sector and (b) the formal sector working class (protected employees) to the informal sector. The argument may be made that the first comparison contrasted two quite distinct groups, where the formal sector would be considerably more heterogeneous, and therefore the second comparison is more valid. Thus both equations are presented. Included were the logged dependent variable vector of independent variables representing education, gender, race, age, migrant status, and two control variables, household status and metropolitan area. Except for the continuous variable representing years of education (0 to 17), all independent variables were entered into the model as dummy variables.

FINDINGS

CHARACTERISTICS OF INFORMAL WORKERS: BIVARIATE RESULTS

Bivariate results showing the relation between social characteristics and informal sector work are presented in Table 1. The first column describes the composition of the informal sector. It shows that both females and non-Whites are both majority groups in the informal sector. Also, a large component of the informal sector is composed of rural-origin migrants. The second

TABLE 1: Bivariate Relationships Between Social Characteristics and Informal Sector Employment

<i>Social Characteristic</i>	<i>Percentage of Informal Sector That Are Members of Social Group</i>	<i>Percentage of Social Group That Are in Informal Sector</i>
Total	—	22.4
Female	53.8	33.8
Youth (10-19)	24.7	38.4
Non-White	53.4	29.2
Migrant status		
Rural origin	42.0	25.5
Recent arrival (0-2 years)	5.4	32.9
Urban origin	26.5	19.9
Recent arrival (0-2 years)	8.3	24.2
Native	31.5	19.4

SOURCE: 1980 Brazilian Census, 3% public use sample.

column, on the other hand, illustrates the proportion of each group employed in the informal sector. Although only 22.4% of all workers are in the informal sector, the sector includes a disproportionately large number of youths (38.4%), females (33.8%), and non-Whites (29.2%). Rural-origin migrants are slightly overrepresented (25.4%), whereas urban-origin migrants (19.9%) and natives (19.4%) are slightly less likely than the total population to be in the informal sector.

Table 1 also shows that a higher proportion of recent migrants than migrants, in general, tend to be in the informal sector. This holds for both rural- and urban-origin migrants. This seemingly supports the thesis that migrants are more likely to find formal sector jobs over time; however, greater duration of residence also implies the selectivity of migrants with characteristics that are more desirable in the labor market. In the absence of longitudinal data, the presentation of tables that show time since migration and formal sector participation may be misleading because there is evidence that the less schooled and presumably the least successful have remigrated, thereby inflating the educational levels of the earlier migrant cohorts (Martine, 1976).⁸

The effect of the "time since migration" variable is thus not clear. Perhaps migrants are receiving more education or the less educated have remigrated, inflating the mean educational levels of those that remain. Although migrant entry cohorts may in fact become more successful over time, such labor market success may be overestimated when measured in this way. Through the proposed multivariate models, this problem of migrant selectivity was

attenuated by statistically controlling for selectivity factors such as education, age, and sex.

CHARACTERISTICS OF INFORMAL WORKERS: MULTIVARIATE RESULTS

Given that youths, non-Whites, and rural-origin migrants have lower levels of education, does their participation in the informal sector differ from other social groups once education and other pertinent factors are controlled? The multivariate statistical analysis sought to answer these and similar questions. The results are presented in Table 2. Logit coefficients, standard errors, and chi-squares are shown for the two models. Because results for the two models are similar, the following commentary treats them as one except where they diverge.

Along with education, gender explained most of the variation in participation in formal sector employment. Gender is thus a principal defining dimension of participation in formal or informal employment. Its effect is strong even with controls for worker status (household head). Clearly, amount of schooling is also important, particularly when one considers that the unit value for this variable is single years of education. However, a 5-year gain in schooling is required to match the effect of being male on the probability of gaining formal sector employment. Given that the mean years of schooling is 6, the effect of gender, even compared to education, is substantial.

The set of dummy variables referring to migrant status provided some evidence, although weak, that migrants improve their chances of gaining formal sector work over time. Logit effects for migrants were small and often insignificant when compared to natives. Controls for factors like education diminished the strong bivariate relation between time since migration and formal sector employment (Table 1). The results show that under the assumption that migrant characteristics do not change over time, their chances for formal sector employment improve only slightly. Such an effect may be further diminished if data were available that could control for motivation or the sheer luck that may accompany the acquisition of formal sector employment.

The formal and informal job-finding networks available to migrants help explain the lack of a significant disadvantage for them in gaining formal sector employment. The differences between urban and rural migrant coefficients were slight once controls such as education were employed, further underscoring the importance of networks. Thus the effects of time since migration on gaining formal sector employment may be overstated, at least for the case of Brazilian metropolitan areas. The high informal sector participation rate of migrants is much more a function of the low education

TABLE 2: Estimated Logit Parameters (β), Standard Errors (SE), and Chi-Squares of Individual Characteristics and Metropolitan Area Effects on Being in the Formal Sector: Employed Population, 1980

<i>Independent Variable</i>	<i>All Formal vs. Informal Workers</i>			<i>Unprotected Employees vs. Informal Workers</i>		
	β	SE	χ^2	β	SE	χ^2
Female (male)	-.929*	.046	415.06	-.929*	.048	373.70
Years of education	.253*	.009	845.74	.234*	.009	626.02
Non-White (White)	-.107*	.027	15.26	-.080**	.028	8.17
Age						
10-19	-.365*	.062	34.45	-.217*	.064	11.50
20-29	.166*	.112	2.21	.548*	.051	116.19
30-44	.059*	.063	0.89	.432*	.051	73.23
45-59	.185*	.077	5.84	.195**	.065	9.07
(60+)						
Migrant status						
0-2 years, rural	-.042	.104	0.16	.007	.104	0.00
3-5 years, rural	.166	.112	2.21	.161	.113	2.03
6+ years, rural	.059	.063	0.89	.059	.063	0.89
0-2 years, urban	-.185***	.077	5.84	-.183***	.078	5.57
3-5 years, urban	-.077	.061	1.56	-.004	.094	0.00
6+ years, urban	-.019	.054	0.12	-.025	.055	0.21
(Natives)						
Interactions						
Female x Education	.092*	.008	125.51	.095*	.009	117.30
Female x Non-White	-.078**	.026	9.19	-.093*	.026	12.63
Controls						
Household head (nonhead)	.306*	.033	84.50	.285*	.034	69.85
Metropolitan area						
Belem	-.518**	.167	9.61	-.485**	.172	7.97
Fortaleza	-.530	.124	18.36	-.696	.131	28.04
Recife	-.512*	.086	35.54	-.492*	.088	31.19
Salvador	.155	.099	2.43	.081	.103	0.61
Belo Horizonte	.181	.110	2.72	.194	.112	3.01
Rio de Janeiro	.068	.055	1.53	.112***	.057	3.92
Sao Paulo	.461*	.053	74.39	.535*	.055	95.86
Curitiba (Porto Alegre)	-.041	.104	0.15	-.017	.107	0.03
Intercept	.402	.057	49.67	.571	.060	89.18
L^2			4783.95			4296.19
<i>df</i>			4993			4632
<i>N</i>			12,956			10,624

SOURCE: 1980 Brazilian Census.

NOTE: Items in parentheses are reference categories.

* $p < .05$; ** $p < .01$; *** $p < .001$.

of rural-origin migrants. This finding for Brazil and that by Roberts (1989a) for Mexico indicate that in both countries, information about remote labor markets is highly accessible to the population in sending areas. By contrast, other studies that demonstrated the importance of migrant origin and time since migration for gaining formal sector employment referred to less developed Third World countries.

The effect of youth (ages 10-19) was strongly negative, indicating that (controlling for other variables) the young are far more likely to be in the informal labor market. For other age groups, formal sector participation is much more consistent, dropping off in later years until age 60, when informal sector participation again becomes high for those still in the labor force. The effect of age for gaining formal sector employment diverged somewhat between the models. As shown in the next section, this divergence was because youths are virtually absent from non-working-class positions in the formal sector, making the effect of their participation highly negative when all formal workers are included.

Being non-White had a mild, significantly negative effect on the probability of being a formal sector worker. Race thus makes a difference in formal sector participation despite controls for factors commonly used to explain the low status of non-Whites in Brazil, namely, education, migrant status, and local economic development. Thus Blacks and "mixed race" more so than Whites find higher barriers to entering the formal sector.

Notably, two interactions—Female \times Education and Female \times Race—survived a significance test for inclusion in the model.⁹ These interactions, although unexpected based on the analysis of previous work, make conceptual sense in that they demonstrate that the combined effect is significantly beyond that expected based on the additive effects of the two variables that comprise the interaction. For example, the interaction of gender and education shows that women's participation in formal sector employment approaches that of men's as education increases. Apparently, women with greater education are viewed as workers whose human capital is valued. Also, women with greater education are apt to have smaller families and can better afford domestic help, thereby decreasing their domestic responsibilities and making formal sector work a more viable option. The other interaction, Gender \times Race, reveals that non-White women are especially likely to be in informal sector employment, even more than would be expected from the singular effects of both race and gender, indicating especially severe discrimination aimed at non-White women.

Figure 1 illustrates the interactions between gender and education and gender and race. Specifically, it shows the proportions in the formal sector for four race-gender groups by level of education. Three important points

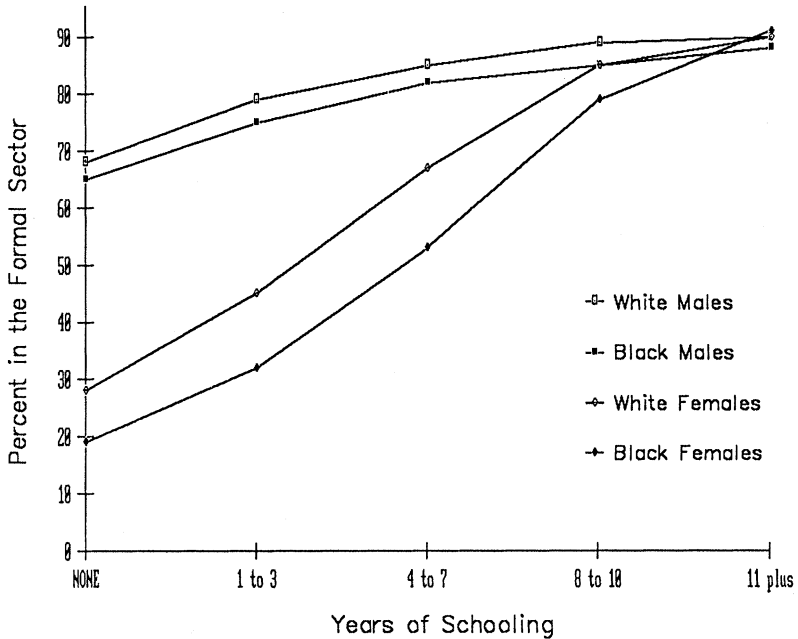


Figure 1: Percentage of Workers in the Formal Sector, by Years of Schooling, Race, and Sex

emerge. First, as expected, formal sector participation increases with education for all race-gender groups, although the rate of increase is substantially greater for females. Second, females have dramatically lower formal sector participation rates at low levels of education compared to males, but the gap between males and females diminishes as education increases. Females with at least a high school education almost reach levels comparable to males. Surprisingly, females with from 4 to 7 years of education have lower formal sector participation rates than do males who have had *no* education. Third, both non-White males and non-White females, regardless of education, are less likely than their White counterparts to be in the formal sector, but this race gap is especially large among women.

Thus the importance of gender as the major determinant of entrance into the informal sector was sustained only for poorly educated women and not for women with more than 8 years of education. Also, "race" further drags down the probability of women being in the formal sector more than it does

men. For persons in the category of 11 years of school or more, there are few differences in formal sector participation with respect to race or gender. Of course, there are variations in the formal sector along such dimensions as income and occupation, so that overall socioeconomic status by gender and race may still differ quite widely for the relatively high educated.

GENDER, LABOR MARKET SECTOR, AND OCCUPATION

The strong interaction between gender and education in determining participation in the formal labor market merits further analysis. "Occupation" should provide clarification of how education allocates women into distinct labor market sectors. (A similar analysis can be done for race.)

The occupation of paid domestic worker includes nearly one quarter of all female jobs, fully three times the next most common occupation, office aide (Table 3). Thus its large weight among female occupations and the fact that it is entirely informal make it especially important for understanding why low-educated women are concentrated in the informal sector. By contrast, female occupations with relatively high mean years of schooling, such as the various clerical occupations and primary school teacher, are almost fully formal. Thus female formal and informal sector occupations are largely differentiated by the level of education required to perform them. The exceptions—janitor, shipping crate worker, and luncheonette tender—are characterized as occupations performed in large enterprises, generally implying greater state protection. In all cases, the mean years of schooling is higher among formal sector jobs.

For men, the relationship between years of schooling and formality of an occupation is less clear. Except for two clerical occupations—office aide and administrative assistant—none of the occupations averages more than 6 years of schooling. Jobs such as bricklayer, merchant, auto mechanic, and painter are largely informal; others requiring similar levels of education, such as watchman, janitor, and lathe worker, are more formal. Furthermore, mean years of schooling in the informal sector were equal to or higher than in the formal sector in 5 of the 18 most common occupations. Notably, 4 of the 5 were in construction.

Table 3 shows that men with low education are in occupations that are mainly in the formal sector, whereas women's low-skilled occupations are largely in the informal sector. The few formal sector jobs available to low-educated women make greater use of education as a screening device. The greater availability of formal sector jobs for men and the lower correlation of sector with education suggest that entrance into the formal sector often represents a choice for men.

TABLE 3: Most Common Occupations for Females and Males, by Labor Market Sector: Metropolitan Areas in Brazil, 1980

Occupation	Percentage of Total	Percentage Informal	Informal		Formal	
			Mean Years of School	Percentage Non-White	Mean Years of School	Percentage Non-White
Females						
Domestic worker	23.3	100.0	2.7	.60	—	—
Office aide	7.6	4.2	8.8	.23	9.7	.25
Tailor and dressmaker	6.7	35.4	4.1	.42	4.8	.40
Janitor	4.8	11.5	2.8	.50	3.0	.56
Secretary	4.5	3.3	8.9	.21	10.7	.15
Salesworker	4.3	13.6	6.0	.33	6.5	.33
Primary school teacher	4.0	4.1	9.8	.59	12.2	.19
Nonregistered nurse	2.8	4.0	6.2	.53	7.3	.40
Washer, ironer	1.9	70.7	1.4	.80	2.1	.61
Cook	1.8	11.0	2.2	.68	3.0	.53
Receptionist	1.6	10.2	7.5	.25	8.8	.29
Cashier	1.5	7.0	6.9	.17	7.1	.40
Shipping crate worker	1.4	3.0	3.8	.52	4.9	.42
Office manager	1.3	0.5	7.8	.63	9.4	.20
Merchant	1.3	40.0	4.2	.53	5.6	.26
Luncheonette tender	1.1	9.5	3.5	.60	3.6	.41
Total	71.2					

(continued)

TABLE 3 Continued

Occupation	Percentage of Total	Percentage Informal	Informal		Formal	
			Mean Years of School	Percentage Non-White	Mean Years of School	Percentage Non-White
Males						
Driver	6.8	10.9	4.8	.40	4.5	.37
Office aide	5.1	4.2	7.2	.31	8.5	.24
Bricklayer	5.0	30.2	2.6	.54	2.7	.57
Salesworker	4.0	16.2	4.8	.40	6.0	.33
Bricklayer's assistant	3.1	32.5	2.5	.65	2.0	.64
Merchant	2.7	23.5	3.9	.42	5.4	.21
Administrative assistant	2.6	2.2	7.7	.38	10.5	.25
Janitor	2.3	8.5	2.2	.70	2.8	.52
Auto mechanic	1.7	22.6	4.3	.53	4.7	.45
Carpenter	1.7	12.8	3.0	.50	2.8	.56
Office boy	1.7	10.3	5.8	.43	6.1	.39
Non-Auto mechanic	1.6	6.5	4.6	.62	5.4	.42
Machine operator	1.6	0.9	5.0	.70	4.3	.44
Watchman	1.3	6.1	2.5	.37	3.3	.52
Painter	1.3	39.0	3.5	.64	3.5	.54
Lathe worker	1.1	1.9	4.2	.54	5.1	.31
Cabinetmaker	1.1	19.1	4.2	.45	4.2	.41
Street vendor, n.e.c.	1.1	55.7	3.3	.51	4.8	.37
Welder, solderer	1.0	3.4	4.2	.65	3.9	.56
Total	50.7					

SOURCE: 1980 Brazilian Census, 3% public use sample.

The stronger effect of race on female sector participation appears to result from the concentration of non-White women in paid domestic service. This occupation constitutes 62% of female informal sector jobs (data not shown), making the concentration of non-White women in it vital to understanding their high participation in the informal sector. For almost all the other occupations and for both males and females, the proportion of non-Whites is higher in the informal than the formal sector.

SUMMARY

This study examined the social characteristics of formal and informal sector workers. The bivariate and multivariate analyses revealed that education, gender, age, and race are important in determining participation in the informal sector and in various forms of employment.

Gender was as important for determining informal sector employment participation as was education, which is usually considered the primary criterion for channeling the oversupply of workers into informal sector work. The gender variable indicates a high degree of sex segregation by labor market sector and also suggests that preferences by formal sector enterprises for men cannot account for such low participation by women in formal sector employment. Specifically, women take informal sector jobs as a result of social roles that require them to prioritize domestic duties. Informal sector employment thus may often be an individual or household decision and should not be seen as merely the incapacity of modern industry to absorb the labor force.

This study points to previous researchers' insufficient attention to race and overattention to migrant status for understanding informal employment in Brazil. Here, non-White workers were shown to disproportionately occupy informal sector jobs, even with the application of controls, making race a central factor in informal sector participation. By contrast, the origin of migrants or their time since migration has little bearing on whether they held formal or informal sector jobs. Migrants of both urban and rural origin are well represented throughout the employment structure.

Two sets of interactions provide interesting results. The interaction of gender with education demonstrated that education affects female formal sector employment much more than that of males. Women with low levels of education have impressively lower formal sector participation rates than do men with comparable education. However, female high school graduates are as likely as men to participate in the formal sector. Another significant interaction, gender with race, revealed that non-White women are especially

likely to be in informal sector employment, even more than would be expected by their non-White and female status alone. In other words, the White-non-White gap between women is significantly greater than that between males. These interactions show that the effects of education and race on the likelihood of gaining formal sector employment are especially dramatic for women. Although gender largely accounts for differential participation in labor market sectors, the gender gap is quite wide for women with low levels of education, particularly non-White women, and virtually non-existent for those with at least a high school education.

Analysis of individual occupations revealed that female occupations that require little education are predominately informal, whereas male occupations requiring similar education are both formal and informal. The domestic worker category among female occupations, which is by far the largest and is entirely informal, largely explains why low education is more likely to lead to informality for women. The large proportion of non-White domestics also helps explain why being non-White translates into informality more often for women than for men. Overall, the findings indicate that education and race are more frequently used in screening women's than men's entrance into the formal sector.

This study established relationships between the employment structure and sociodemographic variables. Because most of the past research on informal sector employment focused on men, little is known about what informal sector employment means for women in developing countries, especially poor and minority women. How female household members choose various forms of employment in the face of constraints imposed by both the labor market and other household members is quite varied and requires further research to disentangle the effects of women's individual decisions from these household and labor market pressures that constrain them to the informal sector.

NOTES

1. The definition of informal used here refers to the regulation of work by the state as indicated by social security payment.
2. The term non-White in this study refers to only Black and *pardo* (mixed race) workers and does not include the small number of Asians and American Indians.
3. The three recent studies cited in English are edited translations from Portuguese and contained in a volume edited by the UCLA Afro-American Studies Department (Fontaine, 1985). This singular volume and its specialized publisher reflects the recent lack of attention to the subject by U.S. social science.

4. The allocation of self-employed into both formal sector and informal sector workers presents a notable exception to past work in which all self-employed were lumped into the informal sector (Portes, 1985; Programa Regional del Empleo para America Latina y el Caribe [PREALC], 1978, 1982; Roberts, 1989b). This alternative is consistent with previous fieldwork that noted the distinctions between small business and trade in the developing world in which "ownership" distinguishes two classes of self-employed workers (Bremen, 1984; Koo, 1976; Prandi, 1978).

5. Asians are omitted from the sample because of their high concentration in Sao Paulo and virtual nonexistence in Northeastern metropolitan areas.

6. Informal workers includes only employees and the self-employed because nearly all employers reported contributing to the social security system.

7. Because of the large amount of memory needed to produce maximum likelihood estimates for the entire sample and the unavailability of such a large computer, a representative sample of the data set was taken. An analysis of samples that drew every 10th case, beginning with a different number between 1 and 10 each time, revealed similar results across samples.

8. The much larger size of migrant entry cohorts with less than 2 years of residence compared to longer-term migrants in both 1970 and 1980 indicates substantial remigration in the first 2 years. Also, the greater aggregate levels of education for the long-term migrants indicates that the less educated were more likely to have remigrated.

9. Although many interactions were conceptually interesting, only two provided significant additional explanatory power to the main effects model per degree of freedom. These two interactions each added at least twice as much to the model G^2 per degree of freedom lost compared to the inclusion of any other interaction effect. Notably, interactions such as Gender \times Household Status or Race \times Education failed the significance test for inclusion in the model.

REFERENCES

- Anker, R., & Hein, C. (1985). Why Third World urban employers usually prefer men. *International Labour Review*, 124(5), 73-90.
- Benería, L., & Roldan, M. (1987). *The crossroads of class and gender: Industrial homework, subcontracting and household dynamics in Mexico City*. Chicago: University of Chicago Press.
- Bremen, J. (1984). A dualistic labor system: Critique of the "informal sector" concept. In R. Bromley (Ed.), *Planning for small enterprises in the Third World cities* (pp. 43-64). Elmsford, NY: Pergamon.
- Cacciamalli, M. C. (1988). Produção e emprego na primeira metade da década de 80. In D. O. Sawyer (Ed.), *PNAD's em foco*. Belo Horizonte: Associação Brasileira de População.
- De Soto, H. (1989). *The other path: The invisible revolution in the Third World*. New York: Harper & Row.
- Fernandez-Kelley, M. P., & Garcia, A. M. (1989). Informalization at the core: Hispanic women, homework and the advanced capitalist state. In A. Portes, M. Castells, & L. A. Benton (Eds.), *The informal economy: Studies in advanced and less developed countries* (pp. 247-264). Baltimore, MD: Johns Hopkins University Press.
- Fontaine, P. M. (Ed.). (1985). *Race, class and power in Brazil*. Los Angeles: University of California Center for Afro-American Studies.

- Goldani, A. M. (1989). *Women's transitions: The intersection of female life course, family and demographic transition in twentieth century Brazil*. Unpublished doctoral dissertation, University of Texas at Austin.
- Gonzalez, M. (1986). *Los recursos de la pobreza: Familias de Bajo Ingreso de Guadalajara*. Guadalajara, Mexico: El Colegio de Jalisco.
- Harberger, A. C. (1971). On measuring the social opportunity cost of labor. *International Labor Review*, 103(June).
- Hart, K. (1973). Informal income opportunities and urban employment in Ghana. *Journal of Modern African Studies*, 11, 61-89.
- Hasenbalg, C. (1985). Race and socio-economic inequalities in Brazil. In P. M. Fontaine (Ed.), *Race, class and power in Brazil* (pp. 25-41). Los Angeles: University of California Center for Afro-American Studies.
- Hirata, H., & Humphrey, J. (in press). Workers' response to job loss: Female and male industrial workers in Brazil. *World Development*.
- Jelin, E. (1980). A baiana na força de trabalho: Atividade domestica, produção simples e trabalho assalariado em Salvador. In *Bahia de todos os pobres* (Caderno CEBRAP No. 34, pp. 167-184). Sao Paulo: Editora Vozes.
- Koo, H. (1976). Small entrepreneurship in a developing society: Patterns of labor absorption and social mobility. *Social Forces*, 54, 775-787.
- Koo, H., & Smith, P. C. (1983). Migration, the urban informal sector, and earnings in the Philippines. *Sociological Quarterly*, 24, 219-232.
- Maddala, G. S. (1983). *Limited-dependent and qualitative variables in econometrics*. New York: Cambridge University Press.
- Malloy, J. M. (1985). Politics, fiscal crisis and social security reform in Brazil. *Latin American Issues*, No. 2 [Newsletter].
- Marshall, A. (1987). *Non-standard employment practices in Latin America*. Geneva, Switzerland: International Institute for Labor Studies Discussion Paper.
- Martine, G. (1976). Adaptation of migrants or survival of the fittest: The Brazilian case. *Journal of Developing Areas*, 14, 23-42.
- Martine, G., & Camarano, A. A. (1984). Crescimento e distribuição da população Brasileira: Tendências recentes. *Revista Brasileira de População*, 1(1/2).
- Merrick, T. W. (1976). Employment and earnings in the informal sector in Brazil: The case of Belo Horizonte. *Journal of Developing Areas*, 10, 337-353.
- Merrick, T. W., & Graham, D. H. (1979). *Population and economic development in Brazil: 1800 to the present*. Baltimore, MD: Johns Hopkins University Press.
- Morley, S. A. (1982). *Labor markets and inequitable growth: The case of authoritarian capitalism in Brazil*. Cambridge: Cambridge University Press.
- O Brasil subterrâneo. (1989, July 12). *Veja* [Sao Paulo weekly magazine], pp. 96-105.
- Oliveira, L.E.G. de, Porcaro, R. M., & Costa, T.C.N. (1983). *O lugar do negro na força de trabalho*. Rio de Janeiro: Fundação Instituto Brasileiro de Geografia e Estatística.
- Portes, A. (1985). Latin American class structures. *Latin American Research Review*, 20(3), 7-39.
- Portes, A., Castells, M. (1989). World underneath: The origins, dynamics and effects of the informal economy. In A. Portes, M. Castells, & L. A. Benton (Eds.), *The informal economy: Studies in advanced and less developed countries* (pp. 11-37). Baltimore, MD: Johns Hopkins University Press.
- Portes, A., Blitzer, S., & Curtis, J. (1986). The urban informal sector in Uruguay: Its internal structure, characteristics and effects. *World Development*, 14, 727-741.
- Portes, A., & Sassen-Koob, S. (1987). Making it underground: Comparative material on the informal sector in western market economies. *American Journal of Sociology*, 93, 30-61.

- Prandi, J. R. (1978). *O trabalhador por conta própria sob o capital*. Sao Paulo: Edições Símbolo.
- Programa Regional del Empleo para America Latina y el Caribe (PREALC). (1978). *Sector informal: Funcionamiento y políticas*. Santiago de Chile: Organización Internacional del Trabajo.
- Programa Regional del Empleo para America Latina y el Caribe (PREALC). (1982). *Planificación del empleo*. Santiago de Chile: Organización Internacional del Trabajo.
- Roberts, B. (1978). *Cities of peasants: The political economy of urbanization in the Third World*. Beverly Hills, CA: Sage.
- Roberts, B. (1989a). Employment structure, life cycle and life chances: Formal and informal sectors in Guadalajara. In A. Portes, M. Castells, & L. A. Benton (Eds.), *The informal economy: Studies in advanced and less developed countries* (pp. 49-51). Baltimore, MD: Johns Hopkins University Press.
- Roberts, B. (1989b). The other working class: Uncommitted labor in Britain, Spain and Mexico. In M. L. Kohn (Ed.), *Cross-national research in sociology* (American Sociological Association Presidential Series, pp. 352-372). Newbury Park, CA: Sage.
- Roldan, M. (1985). Industrial outworking, struggles for the reproduction of working-class families and gender subordination. In N. Redclift & E. Mingione (Eds.), *Beyond employment: Household, gender and subsistence* (pp. 248-285). New York: Blackwell.
- Sassen-Koob, S. (1984). Growth and informalization at the core: The case of New York City. In *The urban informal sector: Recent trends in research and theory* [Mimeo] (pp. 492-518). Baltimore, MD: Johns Hopkins University.
- Silva, L.A.M. da. (1981). *Mercados de trabalho metropolitanos e marginalidade*. Master's thesis, Universidade Federal de Rio de Janeiro, Brazil.
- Silva, N. do V. (1985). Updating the cost of being non-white in Brazil. In P. M. Fontaine (Ed.), *Race, class and power in Brazil* (pp. 42-55). Los Angeles: University of California Center for Afro-American Studies.
- Skidmore, T. E. (1985). Race and class in Brazil: Historical perspectives. In P. M. Fontaine (Ed.), *Race, class and power in Brazil* (pp. 11-24). Los Angeles: University of California Center for Afro-American Studies.
- Souza, P. R., & Tokman, V. E. (1976). The informal urban sector in Latin America. *International Labour Review*, 114, 355-365.
- Taube, M. J. de M. (1986). *De migrantes a Favelados: Estudo de um processo migratório*. Campinas, Brazil: Editora da Unicamp.
- Todaro, M. P. (1969). A model of labor migration and urban unemployment in less developed countries. *American Economic Review*, 59, 138-148.
- Todaro, M. (1985). *Economic development in the Third World*. New York: Longman.