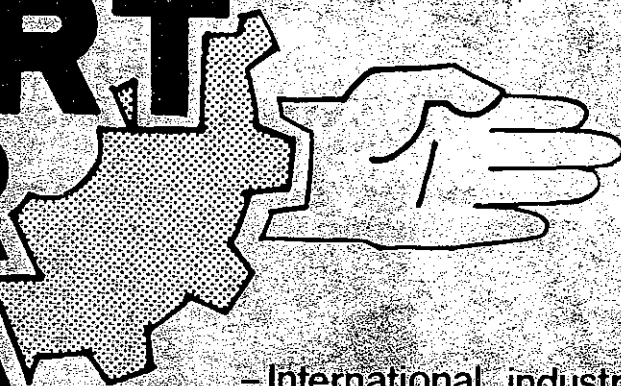# AIRP AIRT RA

- International industrial relations association
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LABOUR MARKET SEGMENTATION, SEX AND INCOME IN BRAZIL

by

Archibald O. Haller

University of Wisconsin, USA

and

José Pastore

University of São Paulo, Brazil

The paper utilises data on Brazilian men and women to illustrate the point that multiple criteria of labour market segmentation may, and indeed do, function simultaneously to influence individual income; that the differences among them are not merely nominal but are substantive; that the segmentation variables tend to have noteworthy effects even when taking into account the effects of other antecedents of income differences, some quite powerful; and that the segmentation variables do not account for the effects of other variables, including some that describe human capital differences.

During the past decade or so, there has been a stream of empirical and theoretical analyses of various conceptions of segmented labour markets on income. Some of these stress dual labour markets, such as "primary" and "secondary" (e.g. Doeringer and Piore, 1971), in which the primary are seen to be those in larger more rationally organised firms with unionised labour forces, with the secondary seen as smaller, more fragile organisations with less unionised labour forces. Recently, Wilson and Portes (1980) showed that the ethnic enclave may function as a third segment, an hypothesis that urban labour market researchers concerned with developing nations had raised some years ago (e.g. Scoville, 1977). The concept of the internal labour market (Doeringer and Piore, 1971) in which higher openings are filled from within the organisation, is quite close to that of the primary labour market. The confusion among labour market segmentation concepts - internal, regional, metropolis/hingerland - becomes quite pronounced at times and some researchers (Beck, Horan, and Tolbert, 1978), discuss them as if they were all merely facets of the same underlying phenomenon, and
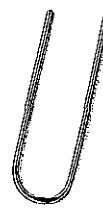
INDUSTRIAL RELATIONS IN THE UNORGANISED SECTOR

by

Dorothea Gaudart
Austrian Federal Ministry for Social Affairs
University of Vienna

try to measure them all at once by distinguishing between workers
according to the type of industry in which they are employed. They
did, incidentally, demonstrate that industry does make a difference
in pay, net of the effect of many other variables, including the
usual human capital factors, albeit Hauser (1980) has shown that the
effects they identified in this way were actually rather small.
There are various "centre-and-periphery" concepts, some of which
seem rather like that of the dual economy variable of Doeringer and
Piore (1971), while others are much more complex (Standing, 1977).
Still other writers (Bowles and Gintis, 1976) take such dualistic
variables as proxies for the supposedly more fundamental concepts
of the bourgeosie (primary market) and the proletariate (secondary
market). It is our position that there are several distinctly
different but influential market segmentation variables, that these
operate in both sexes, and that they are not merely proxies for
class, which has some effect in its own right.

Brazil is a very large country, both in population (121 million
in 1980) and in territory (8.5 million sq km), making it the sixth
most populous and the fifth in size. It is also sharply varied
regarding factors that should make for a diverse set of labour mar-
kets. Its population is packed onto the near-coastal areas. Its
rural-urban variations are great and self-evident. Its agriculture
varies from some of the more precarious and unproductive to some
of the richest in the world. Its substantial regional economic
variations are well known (Haller, 1982). It also has particularly
distinct economic sex roles (Alterman-Blay, 1975). In this paper
we employ national household sample survey data, at the level of the
individual adult worker, to determine for both sexes the net effects
of each of three segmentation variables on logged income both with-
out and with several other variables suggested by a number of
theoretic orientations. Brazil's economic diversity makes it an
unusually propitious site in which to separate the effects of labour
market and other variables.

METHOD

Sample

The data were collected by the Instituto Brasileiro de Geografia
e Estatística (IBGE) in the National Household Sample Survey of 1973
(PNAD73): Pesquisa Nacional por Amostragen de Domicílios), employing
a weighted multistage probability sample. The sample of households
turned out to be N_h = 80,161. Within these households, there were
279,212 individuals ten years of age or over. Data from this tape,
weighted by a formula prepared by Godfrey and Bills (1980), were
provided and are the basis for this analysis. All men and women
of 20 to 64 years of age who reported that they were regularly
employed 17 or more hours per week were included. Of the men,
72,836 fit this definition; of women, 28,747. The data actually
analysed, however, included only those for whom data were available
on all variables. This reduced the male sample to 55,456 (67 per
cent) and the female to 16,290 (57 per cent). Most of the missing
cases were dropped due to a lack of data on fathers' occupation. All
in all, the missing cases probably consist of a higher proportion of
persons who are of lower status. Thus the resulting samples probably

have slightly higher scores on most hierarchical variables than do those for whom data are lacking. This may be a bit more pronounced for the women. Nevertheless, for present purposes, separating the empirical effects of a number of variables, these biases almost surely are irrelevant.

Variables

The variables employed in this analysis are summarised in table 1, which also presents the means and standard deviations for each variable. Note that the means of all dichotomous variables may be read as the percentage who exhibited the category defined as "highest" or scored as one (in contrast to zero).

Income - this variable was taken from the person's statement of his current weekly or monthly wage. This figure was prorated to estimate the person's yearly earnings. This procedure is not exact and misestimates the actual average income. Its main advantage is that it is comparable from person to person, although this could have been accomplished by prorated ... to a standard weekly or monthly basis. In any case, it cannot be far from the true income of each person (Bills, 1981).

Log_n income - this is the variable actually employed in the analysis. The antilog of unstandardised regressions of log_n income, minus one, is an unbiased estimate of the percentage increment in income due to a unit increase in the regressor.

Internal labour market - this is a key labour market segmentation variable. It is a dichotomy whose high side indicates that the worker is a participant in an internal labour market. Brazilians who are employed in public service or, if employed in the private sector, have a signed labour card, have considerable job security under Brazilian law, and when higher vacancies open up they are normally filled by one of the employees to whom the firm is already committed (Pastore and Haller, 1982). Note that 40 per cent of the men and 49 per cent of the women participated in such internal labour markets.

Metropolitan/hinterland - this is a second labour market segmentation variable. It, too, is a dichotomy, indicating whether the worker resided in or outside one of the metropolitan regions of Brazil. It is assumed that metropolitan wages are generally higher than those in outlying areas, and that the low wages of agricultural jobs would tend to drive most wages down in hinterlands. Net of other variables, this dichotomy should also have an independent effect on wages. Of the men, the per cent in metropolitan labour markets was 44; of women, 50.

Local socio-economic development - this is the third segmentation variable. Brazil is officially divided into 360 continental micoregions (MRs), varying quite dramatically regarding the average socio-economic status of their populations. Not surprisingly, most of the more nearly affluent MRs are in the South, in São Paulo, Rio de Janeiro, and Rio Grande do Sul. Poor MRs are scattered everywhere else but are especially concentrated in and near the northern States of Maranhão and Piauí. Socio-economic development

(SED) differences among the MRs have recently been measured and an SED scoring system varying from zero to 100 has been formulated (Haller, 1982). All of Brazil's 20 or so manufacturing MRs have high scores, but so, too, do many of its well-to-do agricultural MRs. It would thus be expected that the workers residing in the MRs with the higher SED scores would tend to have higher paying jobs.

Class – this is not a labour market segmentation variable, although some (Bowles and Gintis, 1976) think that labour market segments are proxies for it. Recent Marxist sociological writings on income in capitalist countries employ basically dichotomous concepts of class which stress – not gradations of power, money or status – but owner-worker relations of production (Wright and Perrone, 1977; Robinson and Kelley, 1979). It is the consensus of our research group that this variable may be most sharply defined by the dichotomy "self-employed employer" versus all other jobs. We note that this also appears to be the cutting point used by the Marxist countries, as, for example, on the definition of the Kulaks. In socialist theory and practice, when one employs another who is paid a wage or salary the first is acting as a capitalist and the latter as a worker. A person who is self-employed but does not employ others is not, however, so considered. So self-employed employers are considered here to be members of a capitalist class, regardless of how large or small their operation is, and those who are not self-employed employers are considered to be workers. Table 1 shows that 9.5 per cent of the men and 1.6 per cent of the women are classed as capitalists by this definition.

Class origin – this variable describes the worker's father's class at the time the worker took his first regular job. It, too, pits self-employed employers against all others. Not surprisingly, the fathers of workers of both sexes were about equally likely to have been capitalists by this definition: 8.9 per cent of the men and 8.6 per cent of the women.

Education – measured in years completed, this is a standard human capital variable. The men averaged 3.9 years and the women 4.8.

Age – this variable, too, is included as a standard way to measure a human capital variable – experience. The average age of the men was 36.79 years; the women 4.8.

Age squared – by now it is well known that there is a limit to the positive linear effects of age on income: that around age 40 or so each additional year either fails to provide new income increments or actually costs the worker. The use of the age squared variable identifies most of the non-positive components of the over-all age effects on income; thus the remaining portion, the effect of age, may be considered to be mostly the result of experience.

Occupational status – the continuous or hierarchial aspect of occupation is captured by this canonically weighted index. With weights specifically calculated for Brazil from Brazilian data (Bills and Godfrey, 1980), it is quite similar in design to the socio-economic indexes in common use today (Featherman and Hauser, 1978). This scale varies from 0 to 100. Men averaged 16.37; Women 21.31.

Father's occupational status - this scale is identical to that just mentioned. The fathers of the men averaged 8.61; the women 10.80.

RESULTS

Labour market segmentation variables alone

Table 2 presents the main results. The crucial items are to be found in the column labelled (e^b-1); Following the lead of Jencks (1970), this column presents a correction for the b values, or unstandardised regression coefficients, which permits a direct interpretation of the results of the regression analysis in terms of the per cent increment in income due to a one-point increment in the respective regression variable.

The main conclusion is clear enough. Each labour market segmentation variable has a noteworthy net effect on (log) income, net of the effect of each of the others, for both sexes. In other words, in Brazil's economically unequal structure, with its special stances regarding the sex-role division of labour and of rewards, each of the three segmentation variables has been shown to have its own effects, unique from those of the other two variables, on (log) income, and this is true for both sexes. Both men and women gain from participating in an internal labour market, from participating in a metropolitan labour market, and from participating in a local labour market that has a higher level of socio-economic development. Clearly, each of these labour market variables stands logically by itself. No one of them can be reduced to, seen as a special case of, or as a mere reflection of one or more of the others.

The sex-role division is, however, important in its own right. We have already seen, of course, that adult women are paid much less than men, indeed they average only 46 per cent of what the corresponding men average. But this is not at issue here. The incremental effects of each of the labour market segmentation variables differed for men than for women. Not even the sex dif-ference in the effects of the socio-economic development of the local labour market is small; recall that, unlike the other two, both of which are dichotomies, this has a scale from 0 to 100. So even the seemingly small differences between the b values for men and women on this variable can have a strong effect if several score points are involved, say 20 or 25. This is the least of the three, however. The sex difference in the effect of being in a metropolitan labour market is quite substantial (38 per cent for men but only 14 for women), whilst that for the effect of being in an internal labour market is startling (120 per cent for women, but only 18 per cent for men). It would appear that it is much more to a woman's advantage than to a man's to get a secure job in a firm with an internal labour market.