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SOCIAL MODERNIZATION, ECONOMIC DEVELOPMENT AND
THE SIZE OF THE MIDDLE CLASS

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INTRODUCTION

One of the most important features of social change concerns stratification structures, i.e., the ways individuals gain access to social desiderata such as income, prestige and power. It is important because it directly affects people's chances in life and, through their perception of the legitimacy of their lot, their political ideology.

The study of the objective and subjective effects of stratification change has always constituted one of the mainstreams of sociological thought. To stress the obvious, for both Marx and Weber the description of change in the stratification structure was the best way of analyzing the passage from one typical system of social relations to another: from capitalism to feudalism, from precapitalist to capitalist modes of production, from the patrimonial to the bureaucratic state.

In Latin America, perhaps because of the marxist tradition in sociological thought, "studies of social stratification are characterized both by their abundance and their scarcity" as Iutaka says (1965). They are abundant because any analysis of social structures and historical processes at the macro-sociological level (in which Latin American sociologists have excelled) calls for the use of classes and groups as principles of organization of the historical material: as social actors, whose use allows a parsimonious description of reality. Often, however, the construction of a stratification structure is only a necessary step towards the main goal of the study, which is the description of historical processes, the identification of political attitudes, the discovery of the agent of revolution, or any other goal of sociological research.

Studies devoted exclusively or principally to stratification and change are thus unfortunately scarce. In the Latin American literature, stratification has been fashionable in only two or three periods, and always in connection with important research projects: the study on the middle class, by the Panamerican Union, (Crevenna, 1951), written in a period of economic expansion and political democratization which naturally drew attention to the middle class; the four-city project, which studied social mobility in Rio de Janeiro, Buenos Aires, Montevideo and Santiago,

/conducted at

conducted at the beginning of the sixties, when the myth of the middle class was wearing away under the blows of economic recession and the dissolution of the populist alliance; (Hutchinson, 1960/1965; Ganon, 1961; Costa Pinto 1956; Graciarena, 1961; Labbens y Solari, 1961); the 1966/1967 Monterrey mobility project, and the study on internal migration, occupational structure and social mobility which is being carried out in Mexico City, whose impact, due to the geographical limitation of the survey, has been much smaller. (Balan, Browning & Jelin, 1974; Muñoz, 1973; de Oliveira, 1973).

Recently, stratification analysis has been somewhat left aside. I think this disregard is justified in part by the difficulty with which reliable data on stratification are produced, and by the attractiveness of the other side of the research, the behaviour of classes in social change. It seems pointless, however, to discuss the political attitudes and potential of classes, if we do not know how development is going to change their size and composition.

How could we say, for instance, that the responsibility for social revolution lies on the shoulders of the working class knowing that this class is declining in relative and absolute terms? And, if the middle class is expanding, must we focus our attention on it, to understand the political and social change that has occurred and that may occur? In conclusion, though neglect is justifiable, I think sociological inquiry must again be directed to this subject, and the present paper is an effort in this direction. It is concerned with the following questions: is there a relation between socio-economic change and stratification structures? Which processes are most important in affecting these structures? Is there a chronological order in their relative importance? And, most important of all: If there is such relation, why? My exclusive concern with theory construction explains the preference shown throughout this work for hypothesis, methodological precision and statistical analysis as opposed to speculation and historical generalizations.

This work has admittedly been stimulated by the availability of data on stratification structures for a number of Latin American countries in

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the environs of 1960 and 1970. The stratification structure was obtained by cross-tabulating occupation and occupational category as they appear in population censuses and, in turn this structure was tabulated with other important variables: education, location, migratory status, etc. (Filgueira, 1975b). These operations were possible because the statistical agencies of these countries had given the samples of their censuses to CELADE (Centro Latinoamericano de Demografía) in connection with a project on stratification and mobility for which I was responsible. Much more can be said about these tabulations, but it may be left to the methodological section of this paper.

I have indicated briefly the source of my information on stratification structures so that the reader may get an idea of what I will and will not do, due to the nature of the data. First of all, it will not be possible to construct a stratification structure more articulated than a basic dichotomy of middle and upper class - lower class with subclasses; second, I will not analyse racial-ethnic stratification because information on racial or ethnic origin is not common to all censuses, nor will I study political stratification (elite-mass relations). I shall however, try to answer the following questions: first, how to construct a stratification structure that could both be meaningful and not distort the available data; in this connection I will review the literature; second, what hypotheses have been formulated relating social change with change in the size of the middle class and again, the study concentrates mostly on the review and critical appraisal of the literature; a statistical analysis is then made of the available data in order to verify the hypotheses stated in the preceding section; and finally, an attempt is made to combine the dispersed hypotheses in a common theoretical framework. This last part is more speculative and tentative than originally intended but a tighter analysis was not possible.

/The construction

The construction of a structure

Methodological textbooks say that "good" sociological research begins with a critical analysis of hypotheses and clarification of concepts, continues with the measurement of these concepts and ends with empirical testing, with or without the employment of statistics. When revising this paper for publication I could have ordered my material in that fashion; but only by doing violence to the way my research had developed.

In fact I began the research with data that had already been organized into comparable stratification structures by a colleague, Carlos Filgueira. I thus felt the need first of all to review the literature in order to verify if the route he had taken was justified by the nature of the data and the relevant material. I was looking for a background to the data at my disposal. Therefore, the methodological section which refers to the construction of a stratification structure was the first problem I tackled. Only after finding this background did I pass to the substantive section on the relation between stratification and economic development: theory construction, methodology and empirical testing.

I propose to maintain this order in my paper. Since the reader is naturally not familiar with the methodology employed to construct the stratification structures used for my analysis of stratification and change, I will briefly describe the steps taken against the background of the existing literature.

The three basic methodological decisions that must be made to construct any stratification structure are the selection of rank system and of the indicator (s) of status, and the criteria of inclusion. These operations correspond to the following questions: on what property do we wish to rank individuals? how do we measure this property? which measures do we combine to make a class?

/The selection

The selection of the rank system

The rank system - it is useful to recall - is the property by which individuals are classified. Although the distinction is not usually drawn between rank and indicators, it nonetheless deserves attention (Tumin, 1967). For instance, if we want to classify individuals according to standard of living, consumption potential or position on an income scale, we must employ as indicators household consumption expenditures, disposable income, and earned income respectively.

It is also true, however, that the commonly used indicators of socio-economic status are highly intercorrelated (Soares, 1962); Duncan, 1961) and that therefore the rank systems should be too.

While this observation may absolve the cruder classifications from this charge it does not justify the more refined efforts, since the measurement of status often requires assigning a different weight to each indicator.

The only works, to my knowledge, which define a rank system are Hutchinson's (1965) study of stratification and mobility in Sao Paulo and the other works in the four-city project. Following the approach of Glass (1954) and his colleagues (Moser and Hall, 1954), however, the author selected the least meaningful of all rank systems, prestige, and arranged occupations accordingly. But in a fast-changing industrial metropolis, the consensus of group members on the social hierarchy of values, if it exists at all, is not crystallized by tradition. The stability of the index, therefore, is foreseeably low (Portes, 1972).

Furthermore, the formality with which Hutchinson placed occupations on the prestige scale, led him to forego the distinction between manual and non-manual labour which has been found meaningful in different social settings (Soares, 1962; Runciman, 1966).

The need for rank system selection, however, has not been accompanied either by the production of data enabling researchers to make a decision, or by efforts to measure the internal consistency of political indicators, except, of course, in the case of the works quoted above.

/To stop

To stop here would be to pass over one of the central debates in the stratification literature of Latin America and, to be sure, of all time: the nature of the rank system.

The debate between the two mayor approaches to stratification - usually associated one with marxism, the other with North American social science - centres, as Ossowski (1963) correctly notes, on whether the selected rank system defines relations of dependence (classes) or ordering relations among social groupings (strata). While classes are analytically defined, strata are arbitrarily arranged: Marx's classes are related by definition; they can therefore be used as homogeneous actors in a theory of social change, whereas strata can be formed and refashioned at pleasure, according to the purpose of the classifier (Dahrendorf 1959).

In turn, this distinction is based on the belief - defended by the first school, criticized by the second - that relations of dependence define homogeneous social classes, while relations of order create only heterogeneous aggregates. Thus, since stratification structures serve primarily as tools for understanding social phenomena, the first approach is better.

Thus go the arguments pro and con. This distinction has been greatly overemphasized. Stratification structures are classifications, and the methodology for their construction is identical for marxist and non-marxist alike.

Roughly speaking, whether classes are defined analytically or by order depends on the nature of the rank system selected. (Stavenhagen 1967, 25). If it is measured on a nominal scale that implies relation (property of the means of production, position on an authority scale), one obtains a class structure; if on an interval scale (income, education) a stratification of strata. On no logical grounds is one preferable to the other. The issue of the selection of rank is an empirical question, and must be solved on this basis. Rank systems are chosen so that the classification thus obtained reduces to the minimum the within-class variation on another dependent variable (political activity, attitudes towards socialization, etc.)

/(Mayntz, 1967).

(Mayntz, 1967). There is no obvious reason why classes defined adopting a relational rank system are homogeneous on all or even a number of social actions. The claim of primogeniture must be justified.

One should also resist the temptation of distributing people into classes post factum; putting for instance the "radicals", whoever they may be, in the proletariat and the "conservative" in the bourgeoisie. There is no doubt in my mind that the marxist approach to this issue has been to say the least, sloppy. First, because it oscillates between a simplistic dichotomy (bourgeoisie-proletariat) and a more realistic but chaotic array of classes (intellectuals, students, petit bourgeoisie, agricultural labourers, peasants). Second, because it often transplants Marx's stratification structure to settings that are historically and ecologically different from his own. That such hierarchies may possess as predictive a value as they did in Marx's times is very unlikely, and, in any event, needs empirical support. As much one may esteem Marx, it is impossible to avoid the feeling that some of his statements, say, on the homogeneity of his classes, and on the proletarianization of the middle class, require fundamental revision, unfortunately lacking in the majority of works of this tendency in the Latin American literature.

Some works are exclusively political pamphlets (Glazerman and Smooner, 1968; Romeo, 1968). The stratification structure they propose is composed of classes whose boundaries are as blurred as their political ideology. Quijano's (1963) identification of five classes (the dependent bourgeoisie, the middle class, the labouring population, the peasants, and the urban marginals) though more respectful of the diversity of statuses in Latin America, faces the same methodological problems. What rank system did he choose? What is the boundary line between the first and the second, and the third and fourth class? Does the industrial bourgeoisie include the managers of large enterprises or exclusively the owners? The stratification he suggests lacks the definition of rank system, of indicator, and of the

/criteria of

criteria of inclusion. Any statement drawing upon imputed patterns of activity of these classes, is thus pure speculation.

Of course lack of methodological accuracy is sometimes justified by the lack of data needed to measure statuses and define boundaries. Historical analyses of stratification structures (Torres, 1965; de Mendizabal, 1968) are thus more often amethodological - if I may use this ugly term - than incorrect, though often available sources of empirical material are not fully exploited. But no justification exists for methodological sloppiness in works that refer, like those quoted above, to contemporary society.

The above observations deny not the validity of some criticisms of schemes of gradation - that they do not identify social factors, for instance - but the utility of measurements constructed without facing the basic methodological problems. Greater methodological precision would be required to improve on earlier efforts.

The selection of indicators and the criteria of inclusion or definition of class boundaries

As it is impossible to construct a stratification structure without an indicator of status, we can expect no default in this section.

In Latin America, occupation has been by far the most popular indicator of status, but others have been employed as well. González Casanova (1965), M. König (1972) and González Cosío (1961) suggest that a set of indicators should be used.

The first of these analyses the structure of inequality along the lines of literacy, housing, education, income, and category of occupation. For each frequency distribution obtained along all indicators, the author determines class boundaries and thus defines a stratification structure.

The selection of criteria of inclusion, however, is entirely arbitrary. There is no reason in fact to accept his statement that the upper class is constituted by the population which owns a television set, has a high school diploma or belongs to the category of employer. Since these indicators are not cross-tabulated, it is impossible to avoid misplacing

/conspicuous consumers,

conspicuous consumers, and educated businessmen, or wealthy managers. Therefore the finding that the size of classes measured along these indicators is roughly equal makes one suspect that the selection of the criteria of inclusion does not precede the analysis of the distribution of population in classes, but follows it.

Konig (1972) suggests a definition of classes by cross-tabulating occupation, income, and education, in the following way:

Occupation	Income	Education	Class
Non-manual	5 000	University	High
	1 000 - 5 000	High-School	Middle
	1 000	Primary	Low

It may be noticed that only occupation and income are actually cross-tabulated and intervene in the construction of classes. The other indicator is allegedly perfectly related with income and therefore is not discriminant. The last of the three (González Cosío, 1961: 54) devotes only the following lines to the question: "Tomando en consideración el ingreso, el gasto, el tipo de ocupación y los censos de población, se ha podido agrupar a los habitantes de México en grandes estratos denominados en sentido lato, clases sociales". It remains unsaid which combination of indicators (excluding census samples, of course) has been adopted and which boundaries drawn.

The single indicator that most often has been employed is as I said occupation (Germani, 1961; Labbens and Solari, 1961; Jaffe, 1965; Chaplin, 1968; Soares, 1971; Parra Sandoval, 1971; Bresser Pereira, 1964; Pereira de Quieroz, 1965; Cardoso and Reyna, 1968; Debuyst, 1962; DESAL, 1965; Briones, 1963). The availability of this information in census publications, its reliability and comparability justify its appeal. But there are two major drawbacks:

/1. As

1. As Ganon (1961) correctly states, the unit of analysis of stratification is the household and not the individual. The wife of a business executive which takes a job as a seamstress to fill her day belongs to the upper and not the lower class. Again, the household distribution of income is substantially different from the personal distribution. Unfortunately, however, censuses commonly supply the occupational distribution of the economically active population and not of the head of the household.

2. Occupations are neither grouped into classes nor arranged in a hierarchy, as are, for instance, income classes. It thus becomes necessary to call upon other criteria to perform these operations: first, to order occupations in a hierarchy; second, to group occupations of similar status into a class, that is, to define class boundaries.

As concerns the first issue, the difficulty is directly proportional to the number of classes employed. In a dichotomy of manual and non-manual workers, it is obvious that the latter enjoy on average a higher status than the former. But it is questionable whether the boundary line falls there, and whether the appealing simplicity of procedure is worth the wealth of information thus lost.

As occupations are listed in detail, however, it becomes more and more difficult to decide on the appropriate ordering of statuses. One way of solving the difficulty, if data are available, is to make use of another indicator of status and define classes by cross-tabulating them.

Chaplin (1968), for instance, arranges occupations according to their average income as it appeared on census publications; but he pools lower non-manuals and high manuals, foregoing the distinction which I have repeatedly pointed to as interesting and relevant. Furthermore, measures of central tendency as average income are meaningful in the construction of classifications if the standard deviation of the variable is not high. For theoretical reasons, it is easy to believe that the standard deviation of income for the upper class (defined by occupation) is relatively low; but not so the standard deviation of the income of occupations in the middle

/class, which

class, which usually belong to the tertiary sector. Salesmen may be both street vendors and wholesaler car dealers. In sum, different occupations span a variety of overlapping statuses.

We have now entered the area of the second problem of the criteria of inclusion: where does one class end and the next begin? Where shall we draw the boundary line between occupations in order to reduce the within-class variation of status? The problem, of course, is that class boundaries are more likely to run through an occupation (or a number of occupations) than between two of them.

This point was forcefully made by E. Jelin (1967). Analyzing her data on occupational allocation and income distribution in Monterrey, she was led to conclude that the distinction between self-employed and employees is horizontal and not vertical. In fact, she distinguished five groups: self-employed without capital, unskilled workers, self-employed with some capital, skilled workers, and self-employed with one to five employees. These groups have significantly different levels of income, education, and housing: 64 per cent of the first group, 25 per cent of the second, 12 per cent of the third, 4 per cent of the fourth and nobody of the last have an income lower than 145 pesos. In our case, unfortunately, such sophistication is unattainable because of the lack of survey data.

In conclusion, occupation alone is not a very good indicator of status. The size of the enterprise for employers and income could better distinguish members of different classes in the same occupations, but this information is seldom, if ever, supplied. A good example of the errors of measurement caused by occupation as the only indicator of status occurs in Desenvolvimento and coyuntura (1958). In the stratification it presents, the percentage of upper class (4%) (constituted exclusively of owners of enterprises) is higher than that of the upper middle (2%) (managers and professionals) and roughly similar to the middle class (6%) (middle level employees). This cannot be true. Obviously the upper class is over-represented on account of the inclusion of owners of small agricultural and industrial enterprises which are very numerous, bearing in mind that in the

/1950s Brazil,

1950s Brazil, to which these data refer, 80 per cent of all industrial enterprises employed less than 10 workers (Bresser Pereira, 1964).

The use of category of occupation as indicator of status is equally unsatisfactory. The trichotomy that can be constructed of employers, employees and self-employed allows a high degree of dispersion of status within each class (Murmis, 1974).

If occupation and occupational category alone are poor indicators of status, by cross-tabulating them we obtain a better measure of status, if any, because the reliability of a measurement is positively related with the number of indicators. This is the approach selected by Germani (1961), Konig (1972), Di Tella (1962), and by Filgueira (1975a) whose data is used in this study.

The problem in this cross-classification (and from any cross-classification) is the definition of hierarchy and of the criteria of inclusion. For instance, does the employed professional have higher status than the employer in commerce? Do both belong to the middle class?

Germani (1961) does not give an explicit account of how he solves the problem. Di Tella (1962) and Filgueira (1975b), on the contrary, describe the operations involved. Roughly, all employers belong to the upper-middle class, with employed and self-employed, professionals, managers, office workers and salesmen. All other self-employed and employees belong to the lower class. The stratification structure adopted by Germani, Di Tella and Filgueira, a version of which will be used in this study, comprises two classes (upper-middle and lower) divided by sectors (secondary, tertiary and primary), and by other subcategories of lesser reliability.

In the case of Mexico, where it was possible to cross-tabulate occupation and occupational category with income, we can verify if the two criteria rank well on income. It appears that the 5 classes (middle-upper in primary; middle upper in secondary and tertiary; lower in primary; lower in secondary; and lower in tertiary) are correctly ordered in terms of income. Furthermore, it is true that non-manual occupations enjoy higher prestige than manual, and that, therefore, the overall status of that subcategory is higher. It also appears, however, that some subcategories in the middle class (own account in trade) have patterns of income distribution similar to industrial workers. It is dubious whether this is only the case in Mexico. In any event, caution is advisable.

/The methodology

The methodology applied to construct the stratification structure on which I base my analysis is the same as that of Germani, Di Tella and Filgueira and, for the reasons exposed above, is the most suitable for the data at hand.

Since in the preceding analysis of the above authors a brief description of the major methodological decisions taken has already been given, I shall now merely summarize all the characteristics of the data and of stratification structure adopted.

As previously indicated, the data used are census data which were made available in sample form to Celade (Centro Latinoamericano de Demografía) by most of the Latin American countries which made a census in about 1960 and 1970, in connection with a project on social stratification of the Social Development Division of CEPAL (the United Nations Economic Commission for Latin America). The program of tabulations that was applied is wider than a simple cross-tabulation of occupation and occupational category; but this is what is of use to us.

In order to render the national data comparable, various operations have been necessary, and they are reported in various Celade publications (Celade, 1974).

As for the three methodological decisions, the stratification structure I have adopted, like Germani's and Di Tella's, avoids the first: the selection of occupation and occupational category as the indicators of status, however, guarantees that at least the major rank systems (income and prestige) have been, to some extent, taken into account. Nevertheless, economic rather than prestige criteria have influenced hierarchization of occupations.

With regard to the second and third, we already know that occupation and occupational category have been the indicators, and that the criteria of inclusion, as in Di Tella's work, have been dictated by a number of considerations, mostly intuitive. It should be added that the number of categories in Germani and Filgueira's work has been reduced to only four:

/a basic

a basic dichotomy upper middle - lower class, and a dichotomy dependent-independent, which is needed to prove Marx's hypothesis on the proletarianization of independent workers. The data on which I base my analysis are given in Table 1.

THE LITERATURE ON STRATIFICATION AND DEVELOPMENT

Introduction

In the literature on change in stratification structures there are two different, and, at times, opposite conceptions of change. Both are legitimate, because the duality belongs to the phenomenon itself. Change, is, as we ourselves experience it in fact, a slow, additive phenomenon if we look at it in the shorter perspective. However, if we look at it in a longer one, we notice that the sums of small changes give rise to formidable revolutions: quantity becomes quality. The two approaches mentioned derive from this Janus like nature of change: one skips over the accumulative changes and focusses on the extremes, usually constructing typologies of social relations at the beginning and at the end of the process. The other concentrates on the continuous, additive changes. While it is crucial for the second approach, for the first one the time dimension is, paradoxically, unimportant. The features of the passage from a feudal to a capitalist society are indifferent to the length of time it requires, whereas analysis of the second type take time as an independent variable. I will call them the discrete and the continuum approaches respectively.

These two conceptions should be analyzed in greater detail, but since I will almost exclusively use hypotheses founded on the basis of the second, I will devote only limited attention to the first.

The discrete approach

This approach is associated with Marxism and functionalism, although not all works that fall in this category belong consciously to either school. For Marx himself, development could be schematically conceived as the change from one mode of production to another: from feudalism to

/ Table a

Table a/
**PERCENTAGE DISTRIBUTION OF ECONOMICALLY ACTIVE POPULATION BY OCCUPATIONAL STRATA,
 FOR SELECTED LATIN AMERICAN COUNTRIES, 1950, 1960 AND 1970**

	Class						Other
	Upper middle			Low			
	Inde- pendent	de- pendent	Total	Inde- pendent	de- pendent	Total	
Argentina							
1950 (1)	18.9	17.0	35.9	8.5	55.6	64.1	0.0
1960 (2)	16.4	22.5	38.9	11.5	49.6	61.1	(10.6)
1970 (2)	12.3	24.8	37.0	14.0	69.0	83.0	(9.5)
Brazil							
1950 (1)	6.7	8.5	15.2	44.1	40.7	84.8	0.0
1960 (2)	3.0	12.6	15.7	46.7	37.7	84.4	(7.4)
Chile							
1950 (1)	8.6	12.8	21.4	16.0	62.6	78.6	0.0
1960 (2)	5.9	15.6	21.5	16.2	62.3	78.5	(6.3)
1970 (2)	8.0	20.7	28.7	16.8	54.5	71.3	(9.7)
Costa Rica							
1950 (1)	12.4	9.9	22.3	18.4	59.9	77.7	0.0
1960 (2)	7.6	15.6	23.2	25.7	51.9	77.1	(6.3)
1970 (2)	4.6	19.6	24.2	19.6	56.2	75.8	(5.3)
Ecuador							
1950 (1)	4.1	6.4	10.5	39.6	49.9	89.5	0.0
1960 (2)	7.4	7.1	14.5	45.5	40.8	86.3	(3.8)
Honduras							
1950 (1)	1.5	3.0	4.5	67.3	28.2	95.5	0.0
1960 (2)	4.1	6.9	11.0	54.7	34.4	89.0	(5.4)
El Salvador							
1950 (1)	5.6	4.9	10.5	37.2	52.9	89.5	0.0
1960 (2)	5.5	6.7	12.1	29.4	58.5	87.9	(1.2)
1970 (2)	6.4	9.3	15.6	33.9	50.4	84.4	(19.9)
Guatemala							
1950 (1)	3.7	4.0	7.7	56.3	36.0	92.3	0.0
1960 (2)	5.4	6.8	12.2	40.1	47.6	87.7	(.6)
1970 (2)	3.4	8.4	11.8	47.7	40.5	88.2	(2.9)
Panama							
1950 (1)	3.7	11.5	15.2	54.9	29.9	84.8	0.0
1960 (2)	3.5	15.8	19.3	48.5	32.1	80.7	(12.0)
1970 (2)	2.9	20.1	23.0	39.2	37.7	76.9	(4.7)
Mexico							
1940 (3)			15.9			83.1	0.0
1960 (2)	15.9	15.9	31.8	23.2	43.7	66.9	(33.4)
1970 (2)	10.5	16.7	27.2	26.0	46.9	72.9	(14.2)
Paraguay							
1950 (1)	7.7	6.5	14.2	58.3	27.5	85.8	0.0
1960 (2)	6.2	7.8	14.0	54.4	31.5	85.9	(6.8)
1970 (2)	6.0	9.3	15.3	53.8	30.9	84.7	(5.4)
Dominican Republic							
1960 (2)	5.2	7.8	13.0	54.4	32.6	87.0	(5.2)
1970 (2)	7.6	14.9	22.5	38.3	39.2	77.5	(41.3)
Peru							
1961 (4)		17.1			82.9		0.0
1970 (2)	7.0	15.6	22.6	34.1	43.3	77.4	(7.2)
Uruguay							
1950 (5)			39.0			67.0	0.0
1960 (2)	13.4	23.7	37.1	19.6	49.3	68.9	(10.2)
Nicaragua							
1971 (2)	7.9	10.9	18.8	33.4	47.8	81.2	(8.0)
Bolivia							
1950 (1)	3.4	4.2	7.6	50.4	42.0	92.4	0.0
Colombia							
1950 (1)	15.3	6.6	21.9	29.4	48.7	78.1	0.0
Cuba							
1950 (1)	(5.8)	15.9	21.7	22.2	56.1	78.3	0.0
Haiti							
1950 (1)	1.7	1.9	3.6	85.6	11.4	97.0	0.0
Venezuela							
1950 (1)	8.6	9.6	18.2	33.5	48.3	81.8	0.0

Sources: (1) G. Gernani, 1961.
 (2) CEPAL-UNICEF, 1975.
 (3) Iturrigaga, 1958.
 (4) Chaplin, 1968.
 (5) C. Nana, 1962.

a/ For (2) data "other" have been distributed among classes proportionately to their size. This operations gives unreliable data when, as in Mexico 1960, 1970, Dominican Republic 1970, and El Salvador 1970, the size of this category is considerable. Especially for Mexico 1960 and Dominican Republic 1970, the data are grossly unreliable.

b/ The original stratification structure, drawn from (2) has been manipulated. In fact counting *ajudatarios* as landowners, it expanded the middle class to the unlikely percentage of 48.3.

Table b/

PERCENTAGE DISTRIBUTION OF ECONOMICALLY ACTIVE POPULATION BY OCCUPATIONAL STRATA AND OCCUPATIONAL DEPENDENCE FOR SELECTED LATIN AMERICAN COUNTRIES, 1950, 1960 AND 1970

	Class						Other
	Upper middle			Low			
	Inde- pendent	de- pendent	Total	Inde- pendent	de- pendent	Total	
Argentina							
1950 (1)	52.6	47.4	100.0	13.3	76.7	100.0	0.0
1960 (2)	42.2	57.8	100.0	18.8	71.2	100.0	(10.6)
1970 (2)	33.2	65.8	100.0	22.2	77.8	100.0	(9.5)
Brazil							
1950 (1)	44.1	55.9	100.0	52.0	48.0	100.0	0.0
1960 (2)	19.1	80.9	100.0	55.4	44.6	100.0	(7.4)
Chile							
1950 (1)	40.2	59.8	100.0	30.4	79.6	100.0	0.0
1960 (2)	27.4	72.6	100.0	20.5	79.5	100.0	(6.9)
1970 (2)	27.9	72.1	100.0	23.6	76.4	100.0	(9.7)
Costa Rica							
1950 (1)	55.7	44.3	100.0	23.7	76.3	100.0	0.0
1963 (2)	33.2	65.8	100.0	33.3	66.7	100.0	(6.3)
1973 (2)	19.0	81.0	100.0	25.9	74.1	100.0	(5.3)
Ecuador							
1950 (1)	39.0	61.0	100.0	44.2	63.8	100.0	0.0
1962 (2)	51.4	48.6	100.0	50.8	49.2	100.0	(3.8)
Honduras							
1950 (1)	33.3	66.7	100.0	70.5	29.5	100.0	0.0
1961 (2)	37.3	63.7	100.0	61.5	30.5	100.0	(5.4)
El Salvador							
1950 (1)	53.3	46.7	100.0	41.6	58.4	100.0	0.0
1961 (2)	45.5	54.5	100.0	33.4	66.6	100.0	(1.2)
1971 (2)	32.7	67.3	100.0	40.2	59.8	100.0	(19.9)
Guatemala							
1950 (1)	48.1	51.9	100.0	61.0	39.0	100.0	0.0
1964 (2)	43.9	56.1	100.0	45.7	54.3	100.0	(0.6)
1973 (2)	28.8	71.2	100.0	54.1	45.9	100.0	(2.9)
Panama							
1950 (1)	24.3	75.7	100.0	64.7	35.3	100.0	0.0
1960 (2)	18.1	81.9	100.0	60.1	39.9	100.0	(12.0)
1970 (2)	12.6	87.4	100.0	51.0	49.0	100.0	(4.7)
Mexico							
1948 (3)							0.0
1960b/ (2)	51.0	49.0	100.0	36.6	63.7	100.0	(33.4)
1970 (2)	38.6	61.4	100.0	35.7	64.3	100.0	(14.2)
Paraguay							
1950 (1)	54.2	45.8	100.0	67.9	32.1	100.0	0.0
1962 (2)	44.0	56.0	100.0	60.5	39.5	100.0	(6.8)
1972 (2)	39.2	60.8	100.0	63.5	36.5	100.0	(5.4)
Dominican Republic							
1960 (2)	40.0	60.0	100.0	62.5	37.5	100.0	(5.2)
1970 (2)	33.8	66.2	100.0	49.4	50.6	100.0	(41.8)
Peru							
1961 (4)							0.0
1970 (2)	31.0	69.0	100.0	44.1	55.9	100.0	(7.2)
Uruguay							
1958 (5)							0.0
1963 (2)	36.1	63.9	100.0	21.6	78.4	100.0	(10.2)
Nicaragua							
1971 (2)	42.0	58.0	100.0	41.1	58.9	100.0	(8.0)
Bolivia							
1950 (1)	44.7	55.3	100.0	54.5	45.5	100.0	0.0
Colombia							
1950 (1)	69.9	30.1	100.0	37.6	62.4	100.0	0.0
Cuba							
1950 (1)	(26.7)	73.3	100.0	28.4	71.6	100.0	0.0
Haiti							
1950 (1)	56.7	43.3	100.0	88.2	11.8	100.0	0.0
Venezuela							
1950 (1)	47.3	52.7	100.0	41.0	59.0	100.0	0.0

Source: (1) G. Germani, 1961.
 (2) CEPAL-UNICEF, 1975.
 (3) Iturriaga, 1958.
 (4) Chaplin, 1968.
 (5) G. Rama, 1962.

a/ For (2) data "other" have been distributed among classes proportionately to their size. This operations gives unreliable data when, as in Mexico 1960, 1970, Dominican Republic 1970, and El Salvador 1970, the size of this category is considerable. Especially for Mexico 1960 and Dominican Republic 1970. The data are grossly unreliable.

b/ The original stratification structure, drawn from (2) has been manipulated. In fact counting ejidatarios as landowners, it expanded the middle class to the unlikely percentage of 48.3.

capitalism and, hopefully, from capitalism to socialism. Changes in stratification are therefore conceived as the shift from the class structure typical of feudalism to that typical of capitalism; or better, from that typical of precapitalism to that of capitalism. This hypothesis as stated in Marx, means two different things: (a) that the size of the global precapitalist stratification structure decreases, while maintaining the relative proportions of the classes of each structure; (b) that such proportions change too.

In both cases, it follows that at any point between the extremes, any society presents a dual stratification structure (Moore, 1966: 353; Fernandes, 1972), that is, two different systems of social relations, although one may, as usual, have hegemony over the other.

If it duly stresses that a dual stratification structure does not exclude the existence of relations between the parts this idea is very interesting. On it in fact, Fernandes bases his hypothesis of the political and entrepreneurial passivity of the middle class. The duality of the stratification structure forces the middle class to compromises that, in the long run, weaken it.

When, however, one asks Marx and contemporary marxists which stratification structure corresponds to the ideal typical systems, the answers are unclear and contradictory. Besides, contemporary marxist thinkers have denied that developing countries are feudal societies, and have preferred to consider them dependent, colonial, or post-colonial. What stratification structure corresponds to these systems is difficult to know. Precapitalist, feudal, colonial, or dependent societies are characterized by the predominance of agricultural over industrial occupations, by the survival of relations of personal dependence and artisanal industry, and thus, development will likely shift people out of agriculture and craftsmen to industry. Supposedly, peasants will have to abandon the countryside, or become agricultural labourers; apart from these general statements there is a vacuum.

/One hypothesis,

One hypothesis, however, has greater importance for the issue at hand: that of proletarianization. There is no need to give reference for this hypothesis in Marx's work: they are all well known. Surprisingly, it has never been dropped from the Marxist arsenal, as witness Rangel Contla's (1970) recent attempt to refurbish it with the support of empirical data drawn from Mexican censuses of 1895, 1950 and 1960.

The proletarianization hypothesis states that, due to competition from larger enterprises, the smaller artisanal industries and smaller farms are doomed to disappear. The result of this process at the social level is the decline in the importance of the middle class. Soares (1971) has already demonstrated the invalidity of this hypothesis, referring, moreover, to the debate that raged between socialists and 'revisionists' in prewar Germany. He notes that in fact the trend in the manual-non manual occupations ratio is decreasing, and not increasing as Marx's hypothesis would lead us to believe.

It is true, however, that the hypothesis may also mean that independent occupations give way to dependent ones, a process labelled in different ways but commonly known as 'bureaucratization'. In this case, the hypothesis is acceptable, and will be tested. It must be noted, however, that it does not have much relevance for the research on stratification, since both 'dependent' and 'independent' categories are comprised of widely different sets of status. Rangel Contla's work entirely overlooks this point; choosing ownership of the means of production as the only indicator of status, it includes in the proletariat all salaried employees (managers, high State officials, the administrators of Brazilian State enterprises, as well as street vendors and industrial workers); and concludes even in the teeth of the data, that the proletariat is increasing.

It may be that the failure to defend the marxist hypothesis should not be considered a failure of the hypothesis; it is hard, however, to escape the impression that, useful as it is as a conceptualization and description of the overall features of change, the marxist approach fails when it comes to supplying a testable hypothesis. It would be too much to ask Marx for hypotheses; but not his followers.

/Functionalism shares

Functionalism shares with marxism the opinion that change is best understood by defining the ideal typical conditions on departure and on arrival, and placing the society under analysis somewhere in the line of evolution from one to the other ideal type (Hoselitz, 1964; Parsons, 1965; Lerner, 1958). This opinion is based, in turn, on the assumptions that societies constitute self-adjusting systems, and that the correlations established among the items composing the system (such as permeability, stratification structure, socialization patterns, family structures, roles, etc.) are similar for all countries. Thus, if any item changes, all the others will too with similar strength and direction in all the countries.

There is no need to labour this point. The fallacy of this reasoning has been proven elsewhere (Walton, 1972; Gusfield, 1967; Bendix, 1967).

In Latin America, functionalism has not enjoyed great success. The only adherent of value it can boast of is Germani (1961; 1971). The dichotomy of modern and traditional society he suggests is characterized by the following properties: the traditional society is relatively closed, it has a dichotomic image, it has two strata (estates or castes), it shows a high status crystallization, it presents obstacles to communication among strata, the inexistence of the middle class, low vertical and horizontal mobility, the pre-eminence of ascription over achievement and of the ideology of inheritance over the ideology of mobility, and it is generally based on agricultural activity. Modern societies show the opposite features: they are open, they have a large middle class, a low status consistency, high mobility and are based on industrial activity.

Development, therefore, is the type of change undergone by a society passing from the traditional to the modern stage.

The validity of this statement is more dubious than it may seem at first sight. Shall we in fact call development only the process on which all the listed structural changes occur in the foreseen direction, or are there exceptions? Modern Japan, for instance, is a highly industrialized society where ascriptive traits are often more important than achieved ones.

/Furthermore, change

Furthermore, change in the structures listed above occurs at the same pace among them and among countries; or shall we accept lags? Developing countries seem to have a tendency toward tertiarization long before there is enough surplus to maintain a large unproductive labour force. Rather than a line between the two poles, development is thus better equated with a tangle of broken segments sparsely distributed around the line of evolution. The amount of information lost by arbitrarily drawing a single line is so great that it is better, in my opinion, to focus on the segments.

Of course, this point is part of a more articulated argument that could be levelled against theoretical frameworks, such as functionalism, which accept the postulates of discrete change and systematic analysis. The first horn of the argument could be that single societies may be construed as systems, but also that the intercorrelations among the parts of the system are by no means the same for all countries. The functionalist approach mistakenly takes this for granted. The second would be that it is methodologically incorrect to conceive of change as compressed within large periods of stasis (Popper, 1957). The debate on this latter point is still alive, and it is advisable not to overstate the case.

In any event, it is true that no testable hypothesis has emerged from the functionalist approach. Even Germani (1961) in his rightly famous work does not employ to any relevant degree his conceptualization of development, but prefers to analyse his data as if change were a continuous process.

The continuum approach

In Latin America, the continuum approach has been almost entirely associated with research on the middle class. In this connection particular attention has received its relationship with economic development which has been the major concern of social research up to the last years. There have been studies focussed on other classes, such as the urban unemployed or the industrial workers, but they seem to lack the wealth of material and of valuable thinking that has been devoted to the middle class.

/The basic

The basic idea of most of the studies I have come across - except the marxist - is that development increases the size of the middle class. Equally important is the idea that the old middle class, composed of artisans, small farmers and independent workers, is giving ground to the 'new middle class', constituted of state employees, middle management, professionals, employees and, of course, industrial entrepreneurs.

Besides the definition and measurement of the middle class, the other major focus of the literature has been the identification of the processes gathered under the umbrella term of development which affect the size of the class; other important - but more recent - preoccupations regard the relative importance of independent factors, and their chronological order. The most important question, namely why is development or any of the subprocesses related at all to the size of the middle class, is rarely, if ever, asked.

A number of authors stand out in the effort to clarify the relationship. Costa Pinto (1956; 1959) lists eight factors related to development which affect the size of the middle class: industrialization, bureaucratization, inflation, internal migration, education and secularization. For each of these factors, he suggests a possible relation to stratification. Industrialization causes an increase in the proportion of industrial, manual and non-manual occupations in relation to agricultural ones. It should be added that non-manual occupations grow at a faster rate than the manual ones; presumably Costa Pinto was aware of this. Inflation reduces the income of those with fixed incomes, predominantly members of the middle class, and thus reduces the size of that class. It is argued that education, urbanization, migration and secularization all work to expand the middle class, although why, is not clear. On the other hand, it is obvious that bureaucratization - the increase in the activities of large enterprises - produces an increase in professional, or at least, non-manual occupations, and therefore, of the middle class.

Costa Pinto's scheme is well articulated. Other authors focus on only one of these processes, preferably industrialization (Alba, 1961; Agulla 1963); or consider that change in the rural structure is also capable of increasing

/the middle

the middle class. Whetten (1963), for instance, states that agrarian reform, reduces the size of the upper class of the countryside and enlarges the middle class.

Although the effort to clarify the theory of development and stratification is valuable, the hypotheses presented above are only general statements of trends, and need empirical foundations: otherwise, the likelihood of those trends is either inferred intuitively or, worse still, from a supposed similarity of the processes of change in developing nations with those of the developed ones. The logical structure of the argument is deductive rather than inductive, and the selection of causes arbitrary. The history of Latin America has in fact demonstrated that the process of late development differs considerably from early development. The need to provide empirical foundations for these hypotheses on changes in stratification was felt, and to a degree satisfied, by the rightly famous work of Germani (1961) and, later, by Cardoso and Reyna (1968), Reyna (1970), Soares (1971), Heintz (1970), Filgueira (1975a).

From theoretical clarification, therefore, the center of research moves to the methodology of empirical tests. How can we prove (as far as possible) with the help of statistical analysis that processes of economic and social modernization are indeed related with the growth of the middle class? There would appear to be three different methods: cross-sectional analysis, time series analysis and cohort analysis. Few sociologists (Muñoz, 1973; de Oliveira 1973; Balan, Browning and Jelin, 1974) adopt the third, for the simple reason that it needs data from career stories and, therefore costly survey research. The second is rare because to possess observations on any one social phenomenon at one point in time is considered lucky. Due to these limitations, the first approach (cross-sectional analysis) has been the most frequently used, and has been selected for the present investigation.

/Germani (1961)

Germani (1961) was the first to indicate the possibility of employing statistical analysis to measure the relation between selected indicators of development (size of secondary and tertiary sectors, urbanism, literacy, industrialization, union membership, voting) and the size of the middle class. Had he applied a simple regression analysis, he would have obtained the following zero-order correlation coefficients with size of the middle and upper class: .87 for percentage of working population in secondary and tertiary sectors; .87 with urbanism; .85 with literacy. Soares (1966) did compute these statistics, obtaining only slightly different results. Similar statistical analysis has given the results shown in Table 2.

As Filgueira (1975a) correctly notes, these statistical measures indicate, first, the existence of a relationship between indicators of economic growth and size of the middle class, and, second, that industrialization fares poorly in comparison with other factors, such as urbanism, education, and literacy which are more closely related to social modernization than economic growth.

The finding of statistical correlation between development and the size of the middle class, however, has not improved our knowledge of the phenomenon. It has perhaps indicated the existence of regularities which need to be explored. Although the statistical techniques employed do not permit conclusive inferences on the relative importance of the factors, there are grounds for suspecting that industrialization and per capita income are less important than other factors. Why is this so? What mechanisms intervene between independent causes and the size of the middle class?

The more recent literature has tried to tackle these issues, and has put forward some interesting hypotheses. Filgueira (1975a) notes that differences in the degree of statistical correlation among factors in a cross-section may hide differences in the chronological sequence in which these factors operate. Rather than asking which factors affect most, one should ask which affects first. Thus, the author hypothesizes that

/Table 2

Table 2

SELECTED STATISTICAL CORRELATIONS OF SOME INDICATORS
WITH THE SIZE OF THE MIDDLE CLASS

	per capita				
	urban- ization	edu- cation	income	industrial- ization	develop- ment
Soares (r)	.86	-	-	.86	.86
Heintz γ	.90	.96	.96	.27	-
Lira ϵ	.34	.43	-	-	.39
Lira ϵ	.93	.75	-	-	.98
Filgueira	.93	.78	.87	.64	.94
Maldonado	-	-	-	-	.90
Araya (Sp. t.)	-	-	-	-	-
Reyna ϵ	.85	.79	.60	-	-
Elizalde γ	.46	.46	-	-	-
Torales γ	.21	.38	.30	-	-
Perea	.53	.54	.82	-	-
Lira ϵ	.63	.72	-	-	-
Lira ϵ	.84	.85	-	-	-
Lira ϵ	-	.80	-	-	-

Source: Filgueira 1975 a.

/development may

development may be divided into three stages: in the first, the size of the middle class is more closely related to per capita income; in the second, to urbanization; and in the third, to education.

Although the inference from cross sectional data is admittedly weak, the hypothesis is very interesting and deserves further testing.

A second valuable hypothesis, defended by di Tella (1962; 1966) states that the relation between development - defined as economic growth - and the size of the middle class is curvilinear. Specifically, that the middle class, at the beginning of the process of development, decreases, due to the disappearance of small-scale artisanal industry, but subsequently increases in connection with the expansion of services.

Though interesting, this hypothesis is not empirically well-founded, because the author used subnational units. Selective internal migration intervened in the process to such an extent that inferences on the size of the middle class are unwarranted (Urzúa, 1969).

Conclusions

In summary, the hypotheses that emerge from the literature are:

1. The higher the level of development the larger the proportion of dependent over independent workers. This may be construed as a revised and limited version of the proletarianization hypothesis.
2. The higher the level of industrialization, urbanization and education, the larger the middle class.
3. Social change (urbanization, education, literacy) affects the size of the middle class more than economic change (industrialization, growth in per capita income).
4. The relation between 'development' and the size of the middle class is curvilinear: for low values of development, marginal changes in development are inversely related with the size of the middle class; for high values, they are positively related. The profile of the curve describing the change in the middle class has its concavity towards the X axis (di Tella's hypothesis).

/5. The

5. The relation between the size of the middle class and basic causal factors is chronological: per capita income growth affects the size of the middle class in the first stage of development; urbanization in the second; and education in the third. (Filgueira's hypothesis.)

/Statistical analysis

Statistical analysis

To summarize the hypotheses postulated (1) the existence of a relation between urbanization, the spread of primary education, per capita income and industrialization, and the size of the middle class; (2) the greater relative importance of the first two over the last; (3) the greater relative importance of the first in later stages of development, but their weakness in the earlier stages; (4) the curvilinearity of the growth of the middle class.

For each hypothesis, it is necessary to construct one research design, and devise different measures. For the first, correlation coefficients will do; for the second and third, regression and path coefficients, applied either to the whole samples or to subsamples; for the fourth, regression on marginal changes.

Before applying these techniques, the independent variables must be defined. As the hypotheses suggest, I have introduced the following variables: (see Annex).

<u>Symbol</u>	<u>Concept</u>	<u>Indicator</u>	<u>Source</u>
URBA	urbanization	Percentage of the population in cities of more than 20,000 inhabitants	CELADE
INDU	industrialization	Percentage of the GNP accounted for the manufactures	CEPAL
PIBK	gross domestic product	Gross domestic product per capita at 1970 US\$	CEPAL
PINX	industrial products per capita	Gross industrial product per capita at 1970 US\$	CEPAL
INPR	spread of primary education	Percentage of the population aged over 15 that has at least completed primary education	CEPAL
ANAF	literacy	Percentage of the population of aged over 15 that is literate	CEPAL

/BURO

BURO	bureaucratization	Percentage of the GNP accounted for by administration and defense	CEPAL
CMED	size of the middle class	Percentage of the PEA that has a middle class occupation	CEPAL

A few remarks are necessary on these indicators:

(1) They can be grouped, as the hypotheses implicitly suggested, in the two large categories of social and economic changes: industrialization, per capita product, per capita industrial product, indicate economic changes, while urbanization, literacy, spread of primary education refer to social ones. Using an established terminology, the first three indicate economic growth, while the last modernization.

(2) For industrialization, I have introduced two indicators: the first measures the proportion of the GNP accounted for by manufacturing activity; the second, per capita industrial product. Since it is possible that very poor countries show a similar distribution of the national product as the rich ones, it is my conviction that the second indicates better the industrial development of a country. However, this indicator is somewhat a copy of GNP per capita, with which it has a 0.93 correlation coefficient. Unfortunately, since the hypothesis under consideration does not state what is meant by industrialization, there is no solution to the dilemma. Thus I propose to introduce both indicators, to eliminate one when the analysis will require it.

(3) One new indicator, bureaucratization has been introduced. With it I will attempt to give a preliminary test to the hypothesis that there is a relation between size of the middle class and size of the public sector, measured by the percentage of the GNP accounted for by administration and defense. Obviously, it would have been better to select the size of public employment as the indicator, but such data were not available for most of the countries, since the censuses rarely separate services rendered by private persons from services rendered by the state.

/(4) As

(4) As it commonly occurs with investigations which employ aggregate data analysis, from various sources, for different uses and times, the problem of comparability arises. In our situation there is no possibility of verifying the reliability of individual observations. It is however, possible to state with a degree of security that measures are roughly comparable. In fact, for each datum, we have employed the same source, and the compilers have tried to standardize the different categories of national statistics into a coherent whole.

The sample I will analyse is composed of 38 cases: the 14 for 1950 have been taken from Germani's earlier quoted analysis of occupational stratification; the 13 for 1960 and 11 for 1970 have been drawn from the UNICEF/CEPAL project on stratification and mobility.

Having pointed out in many an instance the weaknesses of the data at my disposal, only one more call to caution is in order. It is known that significance tests require, among others, the assumption that cases have been selected independently of one another (Blalock, 1960: 303). The same assumption - that error terms are uncorrelated - is also basic to regression analysis and the definition of path coefficients. The sample does not entirely satisfy this requirement, because it contains observations of the same cases at different points in time, 1950, 1960, and 1970. Thus, it is highly likely that error terms are correlated, especially if not all variation is explained through the model that will be proposed.

/Let us

Let us now examine each hypothesis:

Hypothesis 1. The higher the level of development the higher the proportion of dependent over independent workers.

The information is gathered in table 1B. It indicates that the proletarianization process in the upper-middle and in the lower class are substantially similar and in the pre-stated direction. If we take the proletarianization hypothesis to refer to the middle class, the available data support it, though not too strongly. In most countries, in fact, the percentage of independent over dependent occupations in the upper middle class increases. Only exceptions are Ecuador and Honduras. Less evident is the cross-sectional pattern. Argentina, which has the highest per capita income in the period under consideration, does not attain the levels of proletarianization - so if we may call this index - of other countries such as Brazil, Chile and Panama which have lower income per capita. In any event, the simple correlation coefficient is .34, which is significant at the .05 level.

Similar process occurs in the lower stratum occupations: here the cross-sectional variations are stronger than within the lower class, while the inter-country variations are relatively small. Again, the correlation coefficient is high, .61.

It is noteworthy that - as said - intercountry variations are relatively small: it may suggest that national economies have a degree of stability, or inertia as to the change in the independence level of lower class occupations, although economic growth preceding the period we consider may be effective in determining this level.

/Hypothesis 2.

Hypothesis 2. There exists a correlation between selected socio-economic indicators and the size of the middle class.

	CMED	BURO	PIBX	PINX	URBA	ANAF	INPR
BURO	.38						
PIBX	.89	.33					
PINX	.87	.25	.93				
URBA	.93	.38	.92	.93			
ANAF	.85	.17	.72	.68	.77		
INPR	.82	.14	.69	.65	.73	.98	
INDU	.71	.15	.85	.85	.79	.63	.60

A look at the correlation matrix reveals two major facts:

(a) That all variables are strongly related with size of the middle class. The lowest coefficient is that of bureaucratization, which is, in any event, significant at the .05 level. In this sense, the data at my disposal amply confirm the hypothesis, as earlier empirical analysis had made us expect. The strength of the correlations also follows the expected pattern, showing urbanization the most important. But, as was said earlier, it is impossible to infer from this measure to relative importance.

(b) Independent variables are also strongly related with one another. With the exception of bureaucratization, all correlation coefficients are significant at the .01 level. Some are so high as to suggest the identity of the indicators. Coefficients above .9 in fact can be obtained from the same phenomenon by different measures accounting for measurement errors. Multicollinearity has negative effects as is known, because partial correlations of collinear variables are very unstable. They are because the numerator and the denominator of the fraction which gives partial correlations from zero-order correlation coefficients in close to zero. Thus, a difference of few decimals may change greatly the result. However, there is no other solution than the elimination of one of the collinear variables.

/Hypothesis 3.

Hypothesis 3. Urbanization is the most important cause of change
size of the middle class

The concept of relative importance must be taken to scrutiny. As Blalock (1967) well puts it, importance may refer to two different concepts, and is measured in different fashions. It first denotes the strength of the statistical relation existing between the variables, and is measured by correlation coefficient. This, if 'A' has a higher correlation coefficients with 'C' than 'B', it is more important than 'B'.

The second manner to define importance is based on the causal and not statistical relation existing between variables. If 'A' causes 'B' which in turn causes 'C', 'A' is more important than 'B', although the statistical correlation may have (as it usually has in these circumstances) the opposite sign.

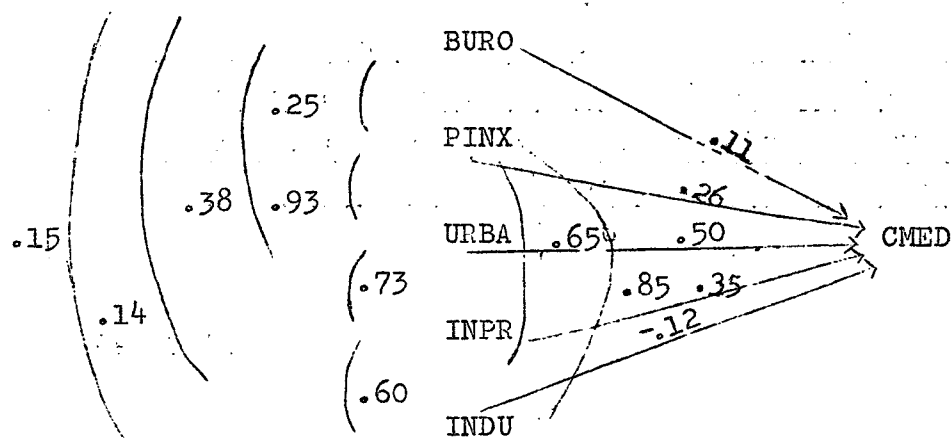
It is my opinion that the second criterion is more useful than the first, but it is also clear to me that relative importance in the works proposing the hypothesis meant statistical importance. Thus, I will devote my attention here to the statistical importance of independent variables.

The statistical technique that has been deployed in defense of the hypothesis on the relative importance of independent variables is not suited for the purpose. Zero-order correlation coefficients measure the covariance of the dependent and independent variable, without controlling for the effects of the others. Thus, a number of independent variables which are highly intercorrelated will typically show a high correlation coefficient with the dependent variable as well, although their independent effects may be small.

In conclusion, other techniques are necessary to draw inferences on the relative importance of independent causes. In sociology, these techniques range from partial correlation to path coefficients, to multiple regression coefficients.

/In connexion

In connexion with the analysis of statistical importance, however, one observation is in order. If we are measuring the importance of variables which are linearly related, it is likely that they split, so to say, the amount of unexplained variation of the dependent variables, thus reducing their independent contribution. The picture that would therefore be obtained adding too many variables to the model could be greatly unrealistic. This circumstance is well illustrated by the measure of relative importance when all the variables listed above have been introduced: bureaucratization, GNP per capita, industrial product per capita, literacy, spread of primary education, industrialization. If we standardize, as is commonly done, (Blalock, 1968) the multiple regression coefficients of the equation containing all those variables we obtain that they rank as follows: urbanization, industrial product per capita, literacy, industrialization, GNP per capita, bureaucratization and spread of primary education. Education, that was in earlier works considered among the most important variables, ranks last in this analysis. The reason, of course, lies in the fact that the correlation between literacy and education is practically perfect (.979). Therefore, the independent effects of one or almost entirely absorbed by the other. Similarly act industrial per capita product and GNP per capita. It is, in conclusion, better, to eliminate from the list of independent variables one of those which are highly related: PIBX and PINX, literacy and education. The remaining variables (bureaucratization, industrial product per capita, education, urbanization and industrialization) can be thought of as relating to the size of the middle class in the following way:



/The values

The values above the arrows are the path coefficients for the graph. In this case (where no causal relation is postulated among the exogenous variables), the path coefficients coincide with the β (beta-weights), the standardized regression coefficients. It may be useful to recall that they measure the percentage of variation in the residual variance of the dependent variable explained by the unit of change in the independent variable.

From the above graphic it is possible to notice two important things: first, that the order of importance of independent variables is substantially different from that stated earlier: urbanization is still related more than any other variable, but followed by spread of primary education, per capita industrial product, bureaucratization and industrialization. Second, the unexpected fact that industrialization is negatively related with the size of the middle class. This, however, may be due to the fact that the first measure of industrialization (per capita industrial product) explains all of the variation in the size of the middle class. In any event, the path coefficient is very small.

If the direct effects of independent variables on the size of the middle class are ranked as above, the indirect effects (defined as the difference between the zero-order correlation coefficient and the path coefficient) are differently distributed: in fact, the total indirect effect of bureaucratization (defined as the effect of the independent variable on the dependent one through its connexion with other independent variables) is .28, that of per capita industrial product .61; that of urbanization .42; of primary education .47; of industrialization .83. This makes us suspect that the higher path coefficient of urbanization and primary education hides their intermediate position between industrialization and size of the middle class. In other words, the causal links should go from economic growth through modernization to the size of the middle class.

/Hypothesis 4.

Hypothesis 4. The pattern of change of the middle class is curvilinear

I applied a simple correlation analysis to marginal changes (from 1950 to 1960 and from 1960 to 1970), for the case on which we had the needed observations of the dependent and independent variables. I have furthermore, introduced a new variable; the absolute value of the middle class at the time preceding the change (CMEA). This was done to test the curvilinearity of the change in the size of the middle class. In fact, if the relation were linear, the correlation coefficient of absolute value and marginal change should be insignificant.

The correlation matrix is the following:

	CMED	BURO	PIBX	PINX	URBA	ANAF	INPR	CMEA
BURO	-.23							
PIBX	-.04	-.11						
PINX	.06	-.43	.86					
URBA	.18	-.13	.36	.45				
ANAF	.19	.16	.08	-.27	-.19			
INPR	-.20	-.13	-.13	-.17	-.23	.74		
CMEA	-.26	-.28	.60	.75	.37	-.61	-.33	
INDU	.18	-.27	.44	.53	.10	.19	.13	.17

These data are disappointing. Not only have the correlation coefficients between changes in size of the middle class and changes in the independent variables been usually insignificant (they vary from .04 to -.26), but the directions of the relationships contradict expectations. For instance, bureaucratization, GNP per capita, and primary education are negatively related with the size of the middle class.

/From the

From the analysis of the correlation matrix, however, two general considerations emerge:

1. A longitudinal analysis of stratification structures in Latin America requires methodologies and, perhaps, independent variables different from those introduced in the model.

Perhaps, however, not the variables, but the design was incorrect. It is entirely possible that the effects of independent variables are felt, on the size of the middle class, beyond a span of some years. Thus, the correlation should be tested not among the independent variables and the dependent one at the same point in time, but with a time lag of ten or twenty years. It is a pity that the cases which could allow us to conduct such an analysis (those for which we have three observations) are so few as to make any testing impossible.

2. The negative sign of the two variables listed above may also indicate that their speed of change is different from that of the middle class; namely, that their rate of growth reduces faster than that of the middle class, when all causes of change are similarly at work.

3. One interesting finding, however, in this heap of guessing, is that the growth rate of middle class decreases continuously. In fact, there is a negative (and relatively strong) correlation between the absolute value of the middle class (CMEA) and its growth. In

/other words

other words, the path of change of the middle class is not linear, but curvilinear, with the concavity towards the X axis. This suggests that at high levels of middle class, a sort of stagnation is produced and a limit reached beyond which only insignificant changes are likely to occur.

Hypothesis 5. Independent factors affect the size of the middle class in chronological fashion, namely, per capita income first, urbanization second, and education, third.

Upon closer look, this hypothesis appears to be a variant of the relative importance hypothesis. Since it cannot mean that in each stage of development a cause acts entirely alone, it must be understood that at each stage one cause affects the rise of the middle class more than the others. Therefore, the hypothesis must be restated as follows: in the first stage of development, the effects of changes in per capita income on the size of the middle class are greater than the effects of other independent variables; in the second stage, urbanization, and in the third education take over per capita income.

It must be stressed that this hypothesis is very interesting, since it is the closer the literature has gotten to theory. If we are able to identify a chronological order in the effects of independent variables, we can better understand the reason for these relations, which, as I stated, is the goal of investigation. Therefore, regardless of the validity of the hypothesis on the chronological order of causes, its suggestion to look for such order, whatever it may be, is very valuable. Given that the restated hypothesis is but a hypothesis on the relative importance of variables, I suggest to employ the same statistical techniques that have been used for this issue in relation to the whole sample. In the present situation, however, it is necessary to divide the sample into a number of subsamples and apply the techniques suggested to each.

Since the hypothesis refers to three stages, it would have been necessary, for its thorough testing, to define three subsamples. But, given the small number of cases, it is preferable to construct only two subgroups, so that significance tests may be meaningful.

/The method

The method for the construction of two subsamples is usually based on the identification of the value of the independent variable (in this case development) for which the variation within category of the dependent variable (middle class) is minimized with respect to the variation between categories. This procedure, however, is very complex and of dubious utility in a preliminary study as the present one.

Thus, I have taken an easier route: I have divided the sample by analysing the frequency distribution of size of the middle class. It is evident that there exists a gap between 15.7 (Paraguay 1970) and; 18.2 (Venezuela 1950), while cases are distributed rather regularly above and below these limits. I have therefore drawn the cutting point there. Luckily, the sample resulted divided into two equal subsamples of 19 cases each.

To these samples I have applied, as anticipated, a correlation and regression analysis. The correlations coefficient with CMED are the following:

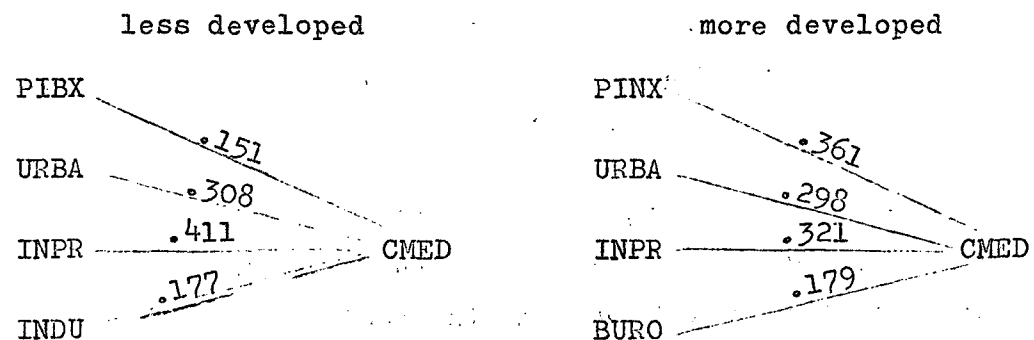
	less developed	more developed
PIBX	-.64	.78
PINX	-.77	.84
URBA	.78	.87
ANAF	+ -.87	-.70
INPR	+ .80	.70

One immediately notices that more developed nations differ from less developed ones rather significantly as to the coefficients of correlation of GNP per capita, industrial product, urbanization on one side, and education and literacy on the other. The group of the first three indicators, bureaucratization and industrialization do not differ significantly from one sample to the next and may be left aside.

/These results

These results suggest the greater importance of education for the growth of the middle class in less developed countries.

Further support for this hypothesis is supplied by the measurement of path coefficients. If we select the four variables which supply the best solution to the multiple regression equations for each subsample, we obtain the following measures of path:



It is interesting that the order of importance of causal variables and the variables themselves introduced in the solution differ rather considerably.

This confirms the hypothesis that level of development interferes in the relation between independent variables and the size of the middle class. It, however, belies the hypothesis that economic change is the most important factor in the growth of the middle class in the lower levels of development. The data support the opposite hypothesis: that education at that stage of development has greater direct effect on the size of the middle class than all other variables.

Conversely, economic factors (PIBX, PINX, INDU) are more important at higher levels of development. Two major interpretations of this finding can be submitted:

1. Di Tella's hypothesis that the impact of growth reduces at first the rise of the middle class by decreasing the proportion of self-employed workers is correct. It is not correct however to state that for this reason the middle class decreases, because economic growth is not the only factor at work. The other causes, in fact affect the size of the middle class in the pre-stated direction; and, according to earlier findings, their resultant effect.
- /2. At

2. At lower levels, growth in per capita income does not require any fundamental change in the productive structure of the economy, therefore, it does not produce distortions in the stratification structure.

In other words, the supply of skilled individuals determines the size of the middle class to a greater extent in the less developed than in the more developed countries. In the latter, on the contrary, the mechanisms of self-sustaining growth act to increase the size of the middle class by affecting the demand for middle class occupations.

Still there remains much to explain, but these may constitute the ground on which to build further.

Conclusions

The conclusion of this short section cannot be but a restatement of the most important findings, and a call for theoretical efforts. In summary, it has been found that the socio-economic indicators suggested in the hypotheses quoted earlier are indeed statistically correlated with the size of the middle class. That the direct effects of urbanization and spread of primary education on the size of the middle class are greater than the direct effects of economic indicators. However, it was suggested that this measure may hide the fact that the causal importance of these independent variables is different from their statistical importance, namely that economic growth may be causally prior to modernization. In any event, no causal order may be proved statistically, and, in fact, so we will see in the next section.

It was proved, however, that the pattern of change in the size of the middle class was not linear, as was assumed for simplicity's sake, but curvilinear. Countries which show a very small middle class are more likely than countries that already possess a large one, to experience important changes in their stratification structure.

Finally, it was found that independent factors affect the size of the middle class in chronological order. Of course, since it was impossible to apply to our sample a longitudinal analysis for periods longer than twenty years, the chronological order of effects was inferred from static measures of attained development. The order that was discovered saw the economic factors less important in the first stage of development and more important later.

/THEORETICAL CONCLUSIONS

THEORETICAL CONCLUSIONS

The conclusions of the last chapter pointed both to the theoretical relevance of the issue and to the weakness of the treatment it has so far received. Its weakness has already been described, but perhaps it should be stressed once again. The hypotheses tested early are not hypotheses strictu sensu, because they do not belong to a well - argued theory of stratification and change -, they are rather generalizations from past experience, of whose causes, and possible effects, we know nothing. Not only are we ignorant of the reasons for the validity of the third, fourth and fifth hypotheses which are, to be sure, more sophisticated; we do not know, and the literature I have reviewed does not even ask, or at best does not answer, why education, urbanization, and economic growth are related at all with the size of the middle class. Since there is no obvious reason why the relation should hold why, when industrialization, development, urbanization and education increase, does the size of the middle class increase too? Any theoretical effort must begin by answering this question before going on to the others, on the relative importance of causes and their chronological order. I will try to do this in the present chapter.

/Premise

Premise

To say that nothing has been done in the issue is something of an exaggeration: the works of Oliveira (1973), Muñoz (1973), Browning and some isolated parts of works by Moore (1966) and Spengler (1965) are relevant. These authors, however, focus not so much on why the single factors (economic and social development) affect stratification structures, as on the identification of the connecting link between social and economic change. This link - they say - is constituted by the labour market, and the area on which the effects of economic change are felt is the process of labour allocation. Labour allocation, it may be useful to recall, is the actual distribution of active population by sex, age, educational qualifications, occupation, industry, and, of course, status. Any investigation is generally focussed on one variable or a set of them depending, of course, on the interests of the researcher. What, however, distinguishes and joins these authors is their use of the basic model of the labour market for the understanding of change of some important features of the social structure.

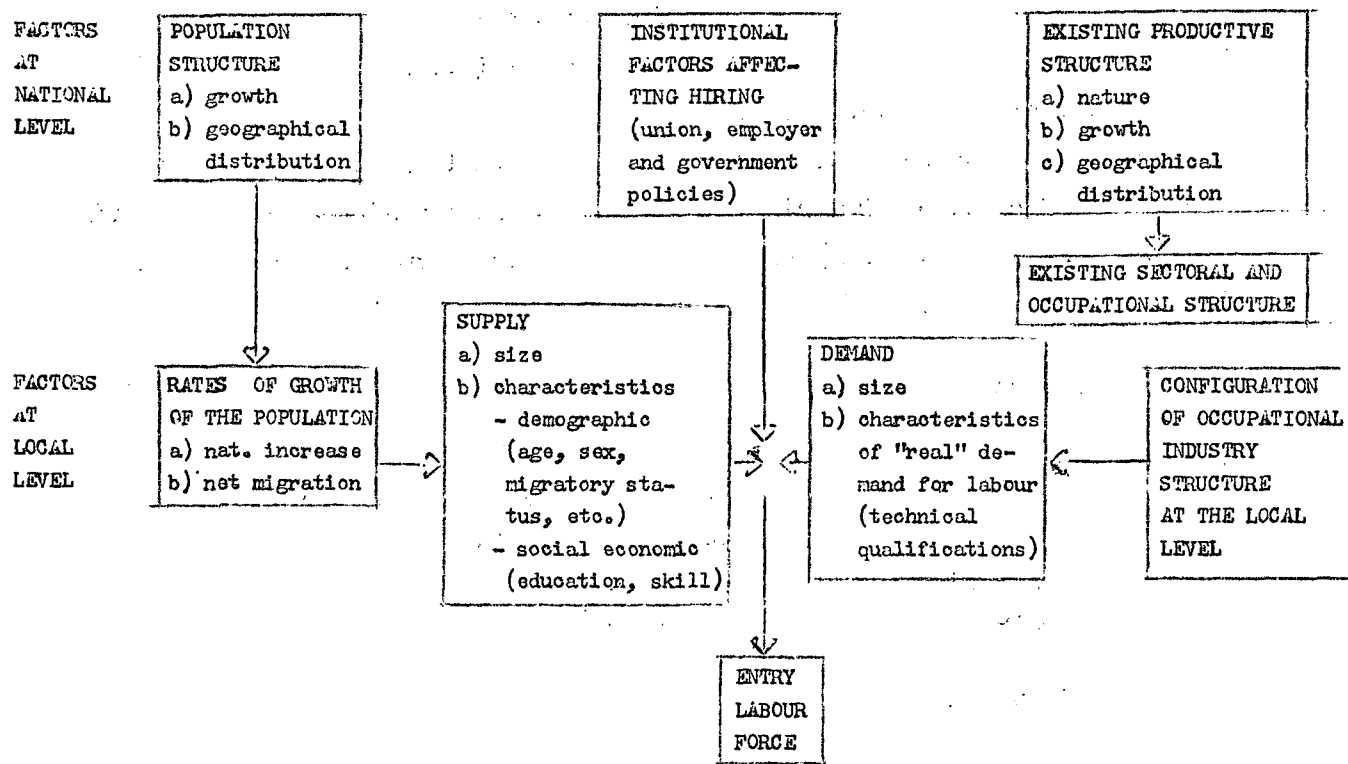
I think this idea can be very useful also for our purposes. In fact, since occupation is the major indicator of status, any hypothesis on the causes of change in the distribution of occupation is a hypothesis on the change in distribution of status, provided that the occupations between which change has occurred have different statuses.

The basic idea in the theory of labour market is that labour allocation is determined by the interplay of demand and supply. This simple model, however, has been much improved upon. While in the neoclassical theory both demand and offer were considered homogeneous, more recent analysis has stressed the heterogeneous nature of the two. The property most difficult to handle is, perhaps, location: it determines the workers' access to information on job openings, and, therefore, their chances of social and geographical mobility, and introduces distortions in the supply-demand equilibrium.

/In spite

In spite of these limitations, the basic model of labour allocation is useful conceptually because it obliges to organize the system of causal linkages around the two horns, demand and supply. In other words, it forces to state whether the cause affects labour allocation through demand or through supply. In the conceptual framework of this paper, it forces to assign each of the variables potentially related with size of the middle class to one or the other causal linkage.

The relevant literature helps in this operation: Browning and de Oliveira (1973) describe the allocation of the entry labour in the following graphic:

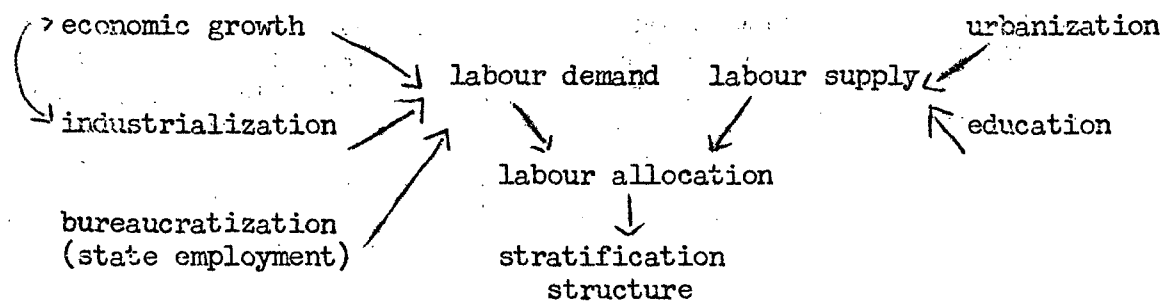


/Focusing on

Focusing on the two boxes of supply and demand exclusively, we recognize among the basic variables education and net migration (urbanization could be) on the side of supply, and technical qualifications on the side of demand. In turn, the characteristic of real labour demand are determined by the 'configuration of occupational industry structure'.

Similarly, Moore (1966) states that the demand for labour by industry is determined by two classes of variables: 'the demand for goods and services, and the relevant proportions of capital, labour, and, especially, the state of appropriate technology' and 'supply of labour (which) is affected not only by current demand, but also by the past demographic behaviour of the relevant population'. Again, on the demand side of labour allocation we notice the level of technology (and, presumably the technical qualifications mentioned in Browning and the Oliveira's scheme) and, on the side of supply, the composition of the population as it affects the properties (volume, educational level, etc.) of the entry labour force.

These two works suggest the road we need to take. Employing five independent factors (industrialization, economic growth, bureaucratization, urbanization and education) the causal linkages among them and the size of the middle class must be as follows:



Let us focus on each of these linkages.

/Change through

Change through demand: industrialization, economic growth, bureaucratization and stratification

Economic growth and industrialization are connected phenomena, so I shall deal with them together. Economic development is caused by and in turn causes far-reaching changes in the occupational and productive structures of an economy. The lore of economic history says that agriculture loses people as its share of production declines, though the first process is often slower than the second. On the other hand, industry and at a faster rate, services increase their share of labour and of production. In this connection, it is useful to recall the typical hypothesis that the expansion of services in developing countries is greater than the expansion of the economic surplus, thus leading to wastage of economic resources, as well as political discontent and, possibly, instability.

Economic growth is usually equated with growth in the level of production, and, as well, with the change in its composition: changes in final demand, accompanied by differential potentiality of acquiring technological development, produce a differential increase both in the volume of demand for labour of different industries and in their level of demand for middle class occupations.

At first sight, two different processes seem to give rise to this variation: a) When the relative outputs of different industries change, so change their productivities: agricultural productivity usually increase at a much slower rate than industrial productivity, and that of the 'leading sectors' or modern industries at a faster rate than that of traditional ones. In turn, salaries vary according to productivity (not so much because there is demand for labour until the marginal production of the last workers equalizes its production, as neo-classical theory says, but because modern industries given the high cost of capital and its high incidence in such industries, prefer to pay high wages and count on a stable labour force rather than run the risk of stoppages). Thus, the occupational distribution of modern industries has a higher middle class content than that of traditional ones. Parentetically

/this is

this is an empirical question and will be tested later. Here I am trying to indicate the likelihood of this, I am trying to suggest that theory leads us to think this is the case. b) Since modern, or expanding industries are usually those which incorporate modern technology, their demand for technicians, and higher level professionals (engineers, computer experts, etc.) must be proportionally higher than that of traditional ones. One could also state that modern enterprises also need complex administrations, and that, therefore, also on this account, their demand for middle class occupations must be higher.

Is it true that industries differ as to their middle class content, and, moreover, that modern industries have a higher middle class content than traditional ones? The data at my disposal to answer this question are not the best possible ones: only data for Mexico 1970 on occupational stratification in industry, are available. I also dispose of less reliable estimation for Chile and Paraguay, 1960 and 1970, interpolating two different tabulations: industry by occupational category and occupation by industry. The two following tables present the data at our disposal.

Some patterns emerge from these data: as expected industries differ consistently in their middle-class content. These differences seem to be for the most part, what common sense leads us to expect: agriculture has the lowest class content, followed by construction and mining, while services, especially financial and medical services appear to be largely supplied by middle-class members. The size of the middle class for commerce is obviously overrated: in no case can we justify percentages as high as 88% (Chile 1970) or 94 per cent (Paraguay 1960). The cause of this error is the large proportion of own-account workers in commerce; probably the owners of small shops, who do not belong to the middle class but are included in it, due to the definition used. It would be important to distinguish wholesalers from retailers, but the data do not allow this.

Furthermore industrial activities also differ substantially. Chemicals food production, paper and energy have a higher middle-class content than textiles, wood, non-metallic minerals and construction. The former

Table 3

OCCUPATIONAL STRATIFICATION OF THE LABOUR FORCE BY INDUSTRY ^{a/}

Stratification	Agriculture		Mining		Manufacturing		Construction		Energy		Commerce		Transportation		Other services	
	Middle	Low	Middle	Low	Middle	Low	Middle	Low	Middle	Low	Middle	Low	Middle	Low	Middle	Low
Country																
Chile																
1960	2.4	97.5	11.6	88.2	11.8	88.1	8.1	91.8	27.3	72.7	87.8	12.1	24.0	75.9	30.7	60.0
1970	5.4	93.2	13.0	84.6	19.8	76.7	13.1	84.5	39.2	58.1	79.6	17.4	26.6	70.2	33.2	57.1
Paraguay																
1960	2.9	97.1	16.2	83.5	7.2	92.6	5.7	94.0	36.7	62.7	94.4	5.3	21.7	78.1	33.4	48.8
1970	1.6	98.3	3.5	95.6	8.6	91.3	2.5	97.3	44.4	55.6	89.6	10.3	30.2	69.6	32.7	67.0

Source: Estimation from CEPAL-UNICEF programme of tabulations.

^{a/} The percentages do not sum to 100 because the Other have been omitted

Table 4

MEXICO 1970 - OCCUPATIONAL STRATIFICATION BY INDUSTRY

	Agricultural	Food	Textiles	Wood	Paper	Chemical	Non-metallic minerals	Manufacture	Construction	Energy-water
Middle	4.2	38.0	20.0	12.8	40.8	41.6	19.1	30.4	14.9	47.4
Low	95.8	72.0	80.0	87.2	51.2	58.4	81.9	69.6	85.1	52.9
	Commerce	Transportation	Finance insurance	Administration-defense	Social services, medical services	Entertainment-personal services				
Middle	79.6	25.4	85.8	57.6	77.3	23.5				
Low	20.4	74.6	14.2	42.4	22.7	76.5				

Source: CEPAL-UNICEF Programme Tabulations.

/has a

has a higher technological level than the latter, as theory led us to expect. Assuming, with the support of the available data, that industries differ as to the middle class content of their occupational labour force, and of their demand for new labour, relations between the growth of middle class and economic growth can be understood as follows: economic growth produces a shift on the relative production of different industries, namely increasing the share of modern industries over traditional ones. The relative share of labour follows this pattern although the different technological intensity of industries creates a desynchronization between the processes of change in relative production and in relative share of labour. Since the middle class content of modern industries (i.e. which increase their production and their labour share) is higher than that of traditional ones, the effect of economic growth at the national level is the increase of the proportion of the middle class in the labour force.

This idea is very simple when it is exemplified. Let us imagine a two sector economy: agriculture and car production, and assume that the latter has a higher middle class content than the former. If car production increases its share of labour and it maintains its higher middle class content, the proportion of the middle class in the total labour force increases. Parenthetically, it would be possible to construct a simple model of simulation to predict from one date (1960 in our case) the size of the middle class on another (1970) in one country given the rate of growth, of production and labour share, and middle class content of each industry. The comparison of the data thus obtained with the real ones could throw light on the effects of other unknown or not considered variables. At the present stage, however, this exercise would be useless.

The above considerations help explain the relation between economic growth - industrialization and the size of the middle class. The other independent variable which affects the supply of labour, bureaucratization, is relatively simple to handle. The growth of responsibilities assumed by the state, combined with the irresistible tendency of bureaucracies to expand and with the clientelist nature of the state in Latin America (and

/elsewhere, to

elsewhere, to be sure) produces an increase in the state employment. Since the jobs offered by the state are overwhelmingly non-manual, and, specifically, clerical, we must expect the expansion of state bureaucracy to cause an increase in the size of the middle class. It is unfortunate, however, that we know close to nothing on the causes of state intervention and cannot, therefore, construct a theory of bureaucratization.

In conclusion, the demand side of the process of labour allocation is clearly described.

Change through supply: urbanization, education, and stratification

The situation is very different with urbanization and education. In spite of the stronger statistical correlation they show with the size of the middle-class, the theoretical standing of these two variables is very weak. As Moore, Spengler, De Oliveira, Muñoz and Browning point out, urbanization and education affect the supply of labour. Therefore, their connection with the size of the middle-class must be seen through the supply side of labour allocation. According to the accepted theory of the labour market - which will be criticized - supply determines the amount of labour allocated by affecting its price: if there is a surplus, the price of labour falls encouraging employers to substitute labour for capital. This model is also applicable to the volume and composition of labour allocation within individual industries. The supply of, say, engineers for mechanical industries determines, vis-a-vis its demand, the price they can command. In turn, this determines the full employment of the category. If prices were elastic, this could explain the effect of supply on the size of the middle class. Since, however, this is not the case as it is known that salaries of middle-class occupations are inelastic and, therefore, that the unemployment of educated youth is higher in most countries, the theory goes to pieces: How then, does supply affect the status distribution of labour? In other words, do geographical and educational mobility create middle-class positions?

/In the

In the final analysis, this is the difficulty: we must focus only on the processes of change which can increase the number of middle-class positions. If, prices are rigid, there is no reason to believe that the supply of potential middle-class members affect their allocation. Rather, the pressure of such individuals on the labour market is unfelt, and channelled into unemployment. Were it not for subsidy-type of employment (in State agencies) the unemployment of "potential" middle-class members would be higher than it is at present. This argument can be developed by examining each process individually.

Let us begin with urbanization. Geographical mobility per se - as distinct from occupational mobility - does not produce obvious effects on stratification. As Thorbecke (1970) pointed out, "the traditional activities carried out in the tertiary sector have the same function in urban areas as the traditional agriculture in rural areas". Why should we expect the former to bestow higher status than the latter? A change in location should not produce a change in status.

It could be replied that, since industrial and tertiary activities are concentrated in urban areas, the process of industrialization requires the transfer of labour away from the countryside. Therefore, if industrialization affects stratification, so does urbanization. But this argument cannot explain the independent effects of urbanization on the size of the middle-class. If anything, it shows that this relation is spurious. Graphically, industrialization → urbanization → stratification.

The situation of education is similar to that of urbanization. In fact, it could be said that the deepening and expansion of technological knowledge calls for the creation of a body of relatively highly-educated personnel. Thus the spread of primary education may be seen as a response to the needs of growing industries, although other factors are of course at work.

But how could the spread of education cause an increase in the number of available middle-class positions?

/Overstating the

Overstating the case a devil's advocate could say that education causes economic growth, either through the absorption of the values of capitalism, the Protestant Ethic, and need achievement; or through better professional training. I disagree with the first hypothesis and suspend judgement on the second, but what matters is that education would be related only indirectly to the size of the middle class, through industrialization, and that, in any event, any relation between education and economic growth if it exists, is very weak. If we want to understand why the spread of primary education affects the size of the middle class, we cannot refer to these hypotheses.

There are, however, two reasonable explanations for the direct effects of supply on the stratification structure.

The first is that there are measurement errors in the definition of status which cause a systematic overvaluation of the status of city dwellers and educated persons; low white-collar occupations - typical of urban centres - may in fact be wrongly attributed to the middle-class, while, in fact, deserving a low class status. The same is true of educated persons who, in order to avoid downgrading themselves if working in a lowly occupation, declare a higher occupation: a trained engineer working as a chauffeur would probably tell the inquirer he is an engineer.

There is no way to compensate for this error, since other indicators of status (income, for instance, or job characteristics) would have to be known for each subject, which is obviously impossible, except in the case of the few censuses which contain a question on income.

Secondly, the supply of educated persons and of unemployed urban residents creates middle-class positions by compelling the State and, less easily, private entrepreneurs, to employ workers beyond their real needs. The mass of unemployed concentrated in shanty towns around the metropolis have been considered - perhaps incorrectly - to constitute a threat to the existing power structure. (Luz Pereira, 1972). Unemployed or underemployed intellectuals are similarly "a problem in the underdeveloped countries which had a higher educational system for some length of time and are not expanding their governmental staff". (Shils, 1960:338).

/The opening

The opening of avenues of vertical mobility in State and para-State organizations is thus perceived as a means of blunting the destabilizing potential of this mass. Thus, as the argument goes, urbanization and the spread of primary education would create a threat of political instability which in turn fosters employment in State institutions. Some ground for this hypothesis has been supplied by the finding that the government production function is generally more labour-intensive than that of the private sector (Gandhi, 1975). It is also generally true that more developed nations (those with the most urbanization, and the highest educational achievement) are also those with greater public bureaucracy; but it is not possible to infer from this scanty information that the hypothesis is correct. It may be noted that the State would thus intervene at various stages in the process: first, as a major cause of economic growth and, indirectly therefore, of the rise of the middle-class; and secondly, as a major employer of unemployed members of the middle-class.

Conclusion: social modernization, growth, and the size of the middle class

The analysis of the existing hypotheses on socio-economic change and the size of the middle-class leads to conclude that the demand side of the relation is relatively well understood, pending analyses of state intervention, while the supply side still remains unclear. The relation between economic change and stratification can in fact be understood as the result of the shift in relative labour shares of industries which have different middle-class content. Since expanding industries have usually higher middle-class content than reducing ones, the overall result of the change in the labour and product distribution of industries is the growth in the size of the middle-class.

The effects of bureaucratization, especially in state and para-state organizations is self-evident.

The supply side of the relation, on the contrary, has not been explained. The doubt arises that in fact, only demand may be active. The only two reasonable hypotheses presented are those of measurement errors that systematically favour urban residents and educated persons over rural /residents and

residents and uneducated ones, and that of the threat of political instability that constitute unemployed urban residents and educated persons. Recent history, however, showing that extremely high rates of urban and intellectual unemployment can coexist with political stability (for example in Chile the 1976 unemployment rate in spite of the migration of educated youth oscillates around 16-18 per cent), may cause the fear of this threat to vanish and, thus the relation to disappear. It appears evident, to remain in Chile, that public employment has been drastically reduced in order to reduce as well the treasury deficit. If this trend continued, I think that the effects of urbanization and spread of primary education on the size of the middle-class would wither away.

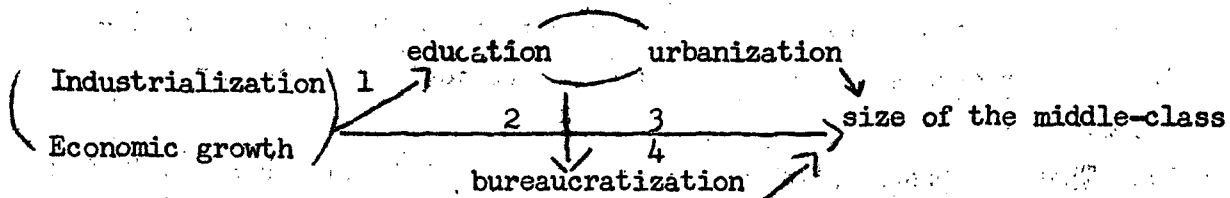
To summarize, in this paper I have: first, explained how my stratification structures had been constructed, and defended the decisions taken against the background of the existing literature and with the material at hand, census data; second, reviewed the literature to extract hypotheses; and third, proved or disapproved these hypotheses. The hypothesis of a relationship between socio-economic change and an increase in the size of the middle-class was tested and found true. Other, more sophisticated hypotheses were also found true. But the crux of the issue was not so much to discover new hypotheses as to provide foundations for the basic one about the relationship between socio-economic processes and stratification. The ideas defended are, in brief:

1. That the best way of constructing a stratification structure with census data is to cross-tabulate occupation with occupational category.
2. That existing generalizations on the size of the middle-class are statistically true:
 - (a) economic growth, industrialization, bureaucratization, spread of primary education and urbanization are related to the size of the middle-class.
 - (b) social modernization has a higher correlation than economic growth with size of the middle-class

/3. Economic

3. Economic change affects the size of the middle-class through the changes in the middle-class content of aggregate labour demand. In turn, these changes are produced by the different productive structures of expanding and shrinking industries.
4. Modernization (if we may thus refer to urbanization and the spread of primary education) can affect the size of the middle-class indirectly, through pressure on the State, and possibly private enterprise, to employ members of the middle-class beyond real needs. (i.e. when the marginal productivity of one more employee is lower than his salary).
5. However, measurement errors in our stratification structure may be partly responsible for over-estimation of the importance of the effects of modernization. Such errors could not be eliminated, however, given the data at our disposal.

These conclusions together, with the observation that arose in the analysis of hypothesis three, on the relative importance of independent factors (that industrialization and economic growth may have smaller correlation coefficients because affecting the size of the middle-class through education and urbanization) suggest that the causal links between industrialization, economic growth, bureaucratization, education, urbanization, and size of the middle-class may be graphically described as follows:



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Annex

SOCIAL-ECONOMIC INDICATORS FOR SELECTED LATIN AMERICAN COUNTRIES, 1950, 1960, 1970

		INDU	BURO	PIBX	PINX	URBA	ANAF	INPR	CMED
Argentina	1947	22.95	13.08	824.90	195.4	51.5	13.0	84.4	35.9
	1960	25.92	11.95	921.92	243.2	58.2	8.7	89.0	36.8
	1970	29.90	9.32	1212.62	362.5	66.4	7.1	90.6	38.4
Brazil	1950	17.89	8.52	231.63	42.1	20.7	51.5	37.4	15.2
	1960	22.27	8.55	330.83	74.6	28.5	39.3	57.0	15.3
Bolivia	1950	12.36	5.14	231.29	28.7	19.7	63.3	32.7	7.6
Colombia	1951	13.66	6.70	370.77	50.1	21.8	38.5	58.0	21.9
Costa Rica	1950	11.53	5.91	343.61	39.7	20.8	21.2	80.6	22.3
	1963	13.06	11.17	509.18	66.8	25.3	14.3	82.7	22.1
	1973	16.45	11.06	728.95	119.9	35.2	10.2	88.0	24.1
Chile	1952	24.48	6.86	548.12	140.9	40.3	19.4	77.2	21.4
	1960	26.26	8.17	639.03	166.2	47.5	15.1	80.9	22.2
	1970	28.66	6.74	778.64	223.1	55.3	10.7	85.1	29.4
Ecuador	1950	16.35	7.24	258.67	42.9	17.7	43.7	54.0	10.5
	1962	15.83	7.86	314.32	50.4	26.4	30.5	66.3	15.0
Guatemala	1950	10.72	8.08	292.70	32.5	10.3	70.3	29.5	7.7
	1964	12.45	6.98	357.13	44.9	14.9	61.1	34.2	12.3
	1973	14.68	7.03	463.10	67.8	19.1	51.8	43.1	11.8
Haiti	1950	8.24	5.14	118.55	9.7	4.7	89.3	10.4	3.0
Honduras	1950	9.17	4.10	232.20	21.1	6.7	64.8	32.8	4.5
	1961	15.24	4.74	246.40	36.4	11.3	52.7	42.0	10.9
Mexico	1960	19.23	5.52	626.97	121.3	32.0	33.5	60.8	21.1
	1970	23.44	6.51	893.10	209.3	40.9	23.7	68.3	24.5
Nicaragua	1971	17.36	7.06	442.53	76.8	28.5	42.7	68.2	19.2

		INDU	BURO	PIBX	PINX	URBA	ANAF	INPR	CMED
Panama	1950	7.73	3.07	458.59	37.5	22.3	28.3	67.9	15.2
	1960	11.32	2.79	549.54	64.9	32.9	21.7	72.5	20.4
	1970	15.85	3.07	864.44	137.6	37.5	20.7	79.9	23.4
Paraguay	1950	16.16	3.88	305.22	49.2	15.4	31.8	66.5	14.2
	1962	15.30	4.16	316.93	52.2	15.9	25.5	79.3	14.3
	1972	17.29	5.68	368.26	63.5	17.7	19.2	84.4	15.7
Peru	1972	16.80	8.65	560.80	97.1	35.4	15.7	72.4	23.2
República Dominicana	1960	15.90	9.95	287.68	43.2	18.0	34.2	64.5	13.6
	1970	16.70	11.60	347.24	58.0	27.8	31.6	59.0	18.9
El Salvador	1950	12.90	7.34	265.14	34.2	12.5	57.7	35.8	10.5
	1961	14.44	8.84	322.21	47.3	17.0	49.2	43.4	12.2
	1971	17.97	8.78	402.54	72.4	19.1	40.5	53.3	13.6
Uruguay	1963	23.42	12.50	872.93	202.9	60.3	8.8	86.1	35.8
Venezuela	1950	6.97	21.26	653.97	55.4	32.0	48.8	48.0	18.2

Source: INDU: "Cálculo del producto Interno Bruto a costo de factores en dólares 1970 por habitante, por países y para América Latina, período 1950-1974". Statistics Division, National Accounts, ECLA, 24 March 1975.

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