

## **Social Stratification Processes and Human Capital Investments Towards Men and Women<sup>1</sup>**

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This document contains an analysis of structural equations to explore the process of social stratification in Mexico. To this end, the ESRU Survey of Social Mobility in Mexico 2011 (EMOVI-2011) was used. This work starts with the classical model proposed by Blau and Duncan 50 years ago.<sup>4</sup> With the data that such model contains, an inductive approach has been proposed to analyze the weight of the occupation and education of the father over the first occupation of the children, the educational attainment and the occupation at the time of the survey, in 2011. A comparative analysis between men and women is also introduced for the first time.

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<sup>4</sup> P. Blau and O. Duncan, *The American Occupational Structure*, Nueva York, The Free Press, 1967.

Notable differences are found with the classical model, which suggest that education plays a role in the stratification process, and that there is a context of intergenerational mobility but not one of intra-generational mobility. This relationship is accentuated in the case of women. To the model a latent variable is added to observe if there are different processes in the decision of whether to invest in the human capital of their children. The structural equation models indicate that women experience less intra-generational mobility than men. It also shows that women who enjoy a higher occupational status are the ones who present positive attitudes towards dissimilar educational investment for men and women. This adds to the cycle of persistent inequalities between men and women.

## **BACKGROUND**

### ***The model of social stratification process: origin and development***

The concept of social mobility refers to the movement of an individual with respect to her/his position of origin.

"Origin" refers to the position that a person has in the social context, either with respect to its own starting point, or with respect to the position of the predecessor generation. The "position" refers to the socioeconomic status, occupation or education. Although there is no consensus as to which is the best measure of origin and position, several authors have focused on the analysis of occupational labor markets assuming that a job includes

objective and subjective "reward packages", such as higher income and social prestige.<sup>5</sup>

Since Peter M. Blau and Otis Dudley Duncan wrote their seminal work *The stratification process* in 1967, a considerable effort has been made by the analysts of social mobility to identify a) the role played by the principles of ascription and achievement in contemporary societies, b) how the circumstances of birth affect subsequent stages in the life trajectories of individuals, c) how in turn, each stage in life and career paths of people affect the subsequent stages.<sup>6</sup>

To observe these processes, Blau and Duncan proposed a basic model of the stratification process based on five variables, whose relations were confirmed by a simple path analysis scheme. The variables included in the initial model were a) educational attainment of the father, b) occupational status of the father, c) educational attainment of the informant, d) status of the first job of the informant, e) status of the occupation of the informant at the time of the interview. With this model, Blau and Duncan showed that the first job and the educational attainment of the ego directly influence the occupational achievement. However, the weight carried by the occupation of the father played a strong role both directly and indirectly in the American society of the sixties. So the first occupation of the child and his/her final educational achievement were affected.

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<sup>5</sup> D. Grusky y M. Ku, "Introduction", in D. Grusky, *Social Stratification*, Boulder, Colorado, Westview Press, 3<sup>a</sup> ed., 2008.

<sup>6</sup> P. Blau and O. Duncan, op. cit., pp. 163-164.

Since then and to the extent that more variables have been added to understand how the relationship between origins and destinations of people are affected, models have been refined with significant advances. The effort to understand which micro processes occur day to day and the effect it has at every stage of the life trajectories, has been more than significant. The first extension to the model asked about the "Socio psychological" processes that explain the early occupational achievement; namely, the decision-making processes that affect the quality of the first job.<sup>7</sup> The main finding of the study by William H. Sewell, Archibald O. Haller and Alejandro Portes consisted of identifying that the pairs, the influence of the people around teenagers, strongly influence the level of occupational aspiration (0.54) and the level of educational aspiration (0.59).

This tradition of studies and refinement of the model of the stratification process with a strong psychosocial component is known in the literature as additions to the "Wisconsin model". Since then, several analyses with different populations have been consistent in showing that the stratification process is mediated by social influences and aspirations. Specifically, it is now widely accepted that they a) are not produced individually but socially, b) that other close relatives (parents, friends, teachers) play a role not only in the establishment of such expectations, but they make a difference in educational and occupational achievement. A common finding is that the influence of close people relates directly and positively with educational and

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<sup>7</sup> W. Sewell, et al., "The Educational and Early Occupational Attainment Process", *American Sociological Review*, vol. 34, no. 1, 1969, pp. 82-92.

occupational aspirations and with educational attainment; for example if friends go to college or if parents require excellent grades and school performance. Also, another finding is that of an indirect relationship with occupational achievement.<sup>8</sup>

Another vein of research says that expectations interact with different dimensions of social stratification, for example, sex, gender. In an early analysis that drew on samples of men and women for comparison and also used a sample from outside Wisconsin, Sewell, Hauser and Wolf identified patterns of occupation by women.<sup>9</sup> Based on a classification of macro classes by Duncan, Sewell and his coauthors found over-representation of women in clerical occupations, sales and services, but under-represented among low-status occupations (unskilled manual workers) and higher status (managers, professionals). More importantly, they found that the differences between first occupations and managerial or professional positions between men and women were statistically significant. In other words, among those who had not started their careers as managers or professionals and had reached these positions, there was a difference of more than twice as many men in relation to women. Upward mobility in the upper section was substantially lower for women than for men. However and in these differences, there

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<sup>8</sup> R. Hauser, et al., "A Model of Stratification with Response Error in Social and Psychological Variables", *Sociology of Education*, vol. 56, no. 1, 1983, pp. 20-46; W. Sewell, et al., "The Educational and Early Occupational Attainment...", op. cit.; W. Sewell and V. Shah, "Parents' Education and Children's Educational Aspirations and Achievements", *American Sociological Review*, vol. 33, no. 2, 1968, pp. 191-209; W. Sewell, et al., "The Educational and Early Occupational Status Attainment Process: Replication and Revision", *American Sociological Review*, vol. 35, no. 6, 1970, pp. 1014-1027.

<sup>9</sup> W. Sewell, et al., "Sex, Schooling, and Occupational Status", *American Journal of Sociology*, vol. 86, no. 3, 1980, pp. 551-583.

was no accident of origin... there was stratification based on sex. When the marital status and number of children was incorporated to the analysis it turned out that the professional behavior of never-married women was similar to that of men, and that each child pushed the woman away from moving into the upper professional sectors. The same phenomenon occurred when the models of the stratification process for men, unmarried women and married women, to whom the number of children were added, were analyzed. The models were compared to search downward stratification processes and immobility in the high sector of the occupational structure. It was found that women with children who began their careers in the high sector, tended to go down more often than men.

A more recent analysis (1996) introduced three significant contributions to WisconsinModel.<sup>10</sup> First, it provided evidence that the closer the person is to the *mainstream*, the greater the effect of the father's occupation on the final occupation of the ego. Thus, this effect was lower among African American men than among others. Second and probably more important, to introduce academic performance variables and influence of peers, evidence was also provided as to why such differences occurred. Academic performance was a measure composed by the sum of the indicators of IQ scores and grades. The influence of peers consisted again in the attitudes that classmates had towards higher education or work at an early age. The findings were that the academic performance had twice the results in men than in women explaining a high occupational position. But when the

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<sup>10</sup> J.B. Sørensen and D. Grusky, "The Structure of Career Mobility in Microscopic Perspective", in J.N. Baron, et al. (eds.) *Social Differentiation and Social Inequality*, Boulder, Westview Press, 1996, pp. 83-114.

variable of "peer influences" was introduced, the results among men and women were similar. The Conclusion is that the influence of the social context is more powerful than the individual equipment. A third contribution of this important study was to introduce methodological elements that were new to this model of trajectories; Specifically 1) test the validity of the techniques of recalling, both of the living conditions of the parents, and the conditions of employment of origin, and 2) establish a model in which the variables are entered as latent (i.e. as part of a theoretical construct to which observed variables are included) but also as compounds, which was called the MIMIC model.

A summary of this quick review of 30 years of literature on the model of social stratification process establishes its contributions and some of its main limitations. As for the contributions, three elements are emphasized. First, the model establishes the direct and indirect effects of the original position of the parents upon the children. "Occupation" and "education" are both understood as the variables through which this relationship is exercised. Second, it has been found that in general, these mechanisms are not the same for men as for women: there are structural elements in the process of stratification that make the models for men to be characterized by a greater mobility and an increased attachment. Thus we have that a) there is a greater difference between the occupational status of origin and the destination of the ego, and b) the weight of the position of the father has a greater effect in the final occupational position of the ego in relation to women. Third, these structural elements have two sources that already described the traditional literature. The parenting models

generate gender disparities that persist and reproduce in time and reproduce across generations.<sup>11</sup> Apparently, the mechanisms of production and reproduction of social classes do not anchor their origin in the household income, but on how the goals that the social context set in the paths of life and career are perceived. Differentiated socialization processes explain why a group of people set to target high occupational and educational goals. These same processes are the ones that establish why men and women aspire to different occupational and educational goals.

As for the limitations of these models, it is important to highlight the following: a) the models seem to have concentrated only on the weight carried by the paths between variables. Then, there is no evidence of the structural validity of the models, as it does occur with the complete structural equation models; b) Comparisons between sexes and different groups of men so far have been descriptive; there is no evidence of statistical difference between the models; c) The models have not inquired about other effects of the mother beyond education. It is unclear the role of mothers in establishing differentiated targets of occupation; d) Nor has it been analyzed whether fathers and mothers develop specific behaviors that expand or limit the possibilities of educational and occupational development of their offspring, for example, if they invest in a differentiated way in the education of their children; e) Regarding the results of the model of Wisconsin, are they talking only of the conditions

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<sup>11</sup> See Fernandez et al., (Several years) for the Japanese and Swiss case. For the Mexican case, see Campos and Vélez.

of a specific social structure, or can they identify the conditions of any occupational structure?

#### **ANALYSIS WITH THE EMOVI**

The model of the stratification process has already been tested with data from the ESRU Survey on Social Mobility in Mexico 2006 (EMOVI-2006). Puga and Solis actually added two dimensions. On the one hand, they added a measure of the place of origin of the subjects to look at the weight of rurality in the intergenerational transmission of inequality; on the other, they added a measure of social status: the International Socio-Economic Index of Occupational Status (ISEI). Based on this adjusted stratification model, the authors compare the patterns of social mobility between Chile and Mexico. They found that stratification is more pronounced in the Chilean society; however, the rural background constitutes a primary barrier in the process of mobility of the Mexican society. Also, the authors confirm the greater relevance for the Mexican case of the educational attainment in the intergenerational reproduction of inequality.

Another analysis with the EMOVI-2006 data is that of Huerta.<sup>12</sup> The author includes two variations to the classic model of stratification; namely, level of wealth and a measure of children's academic performance. The results of the analysis show that the wealth of the original household acts directly on the socio-economic welfare.

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<sup>12</sup> J. E. Huerta-Wong, "The Role of Education in the Social Mobility of Mexico and Chile: Inequality in other ways" *Mexican Journal of Educational Research*, Vol. 17, no. 52, 2012, pp. 65-88.

Based on the data from the Survey ESRU on Social Mobility in Mexico 2011 (EMOVI - 2011), this article presents an analysis of the process of social stratification for the total population, and at the same time explores whether there are differences between these processes for samples of men and women. In addition, the preferences of men and women to invest in a differentiated way on the human capital of their sons and daughters are analyzed. To start, if men and women have a different behavior towards their daughters and sons, then there is an indicator of persistence of social immobility in women, which can span three generations. The above can be explained because the stratification models present information on two generations. If an analysis of differentiated attitude towards the sons and daughters of the interviewee is added, the resources with which the third generation faces the stratification processes are then explored.

#### **DATA AND ANALYTICAL STRATEGY**

This paper analyzes the structural validity of the classical model of the social stratification process. To accomplish this, diverse comparisons are performed. First, two models of the processes of stratification of men and women are compared in terms of the intergenerational transmission of occupational status and its relationship with education. Later, the models derive in an analysis of how much the process of social stratification influences the educational investments of parents for their sons and daughters.

Structural equation models propose a directional relationship between observed and latent variables to observe a) whether

the observed model fits with the proposed model and b) what are the strength and direction of the variables in the model.

The variables included are the same for the two models and are described below.

For *occupational status*, an encoding scheme of 82 occupations is used.<sup>13</sup> In several countries it has been shown that the scheme captures several of the socially recognized limits of the division of labor. However, it has also shown that each country has uniqueness in its occupational structure.<sup>14</sup> The 82 categories are grouped into two schemes: one of meso classes (10 levels) and another one of large classes (5 levels). These are based on the education-income relationship of the occupations that such classes have in the United States. For Mexico, the scheme of micro and meso class has a variation. The original scheme groups all primary occupations (fishermen, ranchers and farmworkers) into a single category, but for the analysis with the EMOVI 2011 data, it was necessary to discriminate against rural workers according to their level of wealth. To do this, all inputs from household items and properties were added. The population of primary occupations was divided, based on the median rate of the economic welfare. The scheme of occupations are strongly correlated with an index of socioeconomic welfare (Pearson = 0.44) constructed from 17 household variables. It is to be noted that the EMOVI 2011 data contain a large quantity of household chores, which correspond almost entirely to women (n = 1528, after reducing by the age range used here).

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<sup>13</sup> J.B. Sørensen and D. Grusky, op. cit.

<sup>14</sup> J. Jonsson, et al., "Microclass Mobility: Social Reproduction in Four Countries" *American Journal of Sociology*, vol. 114, no. 4, 2009, pp. 977-1036.

However, it was not possible to control the heterogeneity of the variable and the decision was made not to include it in the analysis. Annex A describes the outline of occupations for this study.

*Status of the first job of the respondent.* The scale of 82 occupations of the occupational status for the first job of the informant described by Huerta, Burak and Grusky was used. The meso occupational level is used for these analyzes.<sup>15</sup>

*Educational attainment of the informant.* It was measured as the answer to the question "What is the last educational level reached in school?" Of the 11 possible answers to the informants, an index of 0-6 was obtained (preschool = 0, incomplete elementary school= 1, elementary school= 2, middle/junior high school, technical = 3, middle/junior high school, general=3, high school, technical= 4, high school, general = 4, technical or trade with elementary school= 3, technical or commercial with middle/junior high school = 4, Professional/undergraduate = 5, graduate = 6). In general it was preferred to use complete levels. Evidence indicates that incomplete grades do not discriminate in terms of instrumental resources.<sup>16</sup>

*Parental educational attainment.* Educational level of father and mother, with the same criteria of ego.

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<sup>15</sup> J.E. Huerta-Wong, et al., "Is Mexico the Limiting Case: Social Mobility in the New Gilded Age", *Working Paper*, Stanford Center on Poverty and Inequality, 2013. See chapter X in this volume for more details.

<sup>16</sup> L. López-Calva and A. Macías, "Do you study or work? Dropout, early work and mobility in Mexico ", in J. F. Serrano and Torche (eds). *Social Mobility in Mexico. Population growth and development*, Mexico, Espinosa Yglesias Research Centre, 2010, pp. 165-187.

*Occupational status of the father.* For this variable the same scale of occupation was used for ego.

*Instrumental functions, preferences in human capital investment.* The following question was used: "If there is only money for one of the children to go to middle/junior high school (or high school, or college), who should be favored, the male son or the female daughter?"

The models analyzed here use information from the Social Survey ESRU on Social Mobility in Mexico 2011 (EMOVI-2011). It has national representation for men and women between 25 and 64 years old. The EMOVI-2011 was applied to a sample of 11,001 people, and includes retrospective questions about the socioeconomic status of the household of origin of the respondents. Subsamples of 30-64 years of age were used. The lower cut was made to allow the sample to "mature" in terms of its own occupational progress. The final sample used here consisted of 3,905 cases.

Then we followed with a three-step strategy analysis. First, univariate characteristics of each variable are described. Second, a correlational study to see if the variables correlated with each other is performed, and in a particularly relevant way, correlations are followed by cohorts (30-37, 35%; 38-46, 28%; 47-55, 21%; 56-64, 16%). The above is to observe the differences in behavior between age groups and anticipate the behavior of the models. Third, a comparative approach based on comprehensive structural equation modeling cases of men (n=2603) and women (n=1302) is performed. For this comparison a simultaneous analysis of two

groups was performed; namely, the parameters and hypothesis of both were estimated at the same time, and thus the variance in the endogenous variables and the paths for both models were fixed. This is the significance test to see if the differences in the paths, factor loadings, measures of goodness-of-fit and determination coefficients are actually different from each other.<sup>17</sup>

The above reflects that we have a robust approach to test for differences between the two models in two complementary types of analysis. The expectation is that the differences in parameter estimates will tend to be lower than they would be in separate tests, but the evidence will be more accurate in pointing out how similar or different the two groups are by gender. For the data analysis the statistical package AMOS 20 was used.

## **RESULTS**

### ***Descriptive analysis***

Tables 1, 2 and 3 contain measurements of frequencies, means, standard deviations and sample used in each of the observed variables. Besides univariate frequencies for father's occupation, first occupation and occupation of the ego in 2011, for these variables a mean per cohort that allows for the identification of trends has been used (Table 4). Table 1 shows the occupational distribution of respondents according to the classification "10 meso activities" described in the previous section. The differences from which occupational trajectories of men and women begin and end are observed. The

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<sup>17</sup> See J. Arbuckle, *AMOS User's Guide*, Chicago, Smallwater, 2007.

most notable differences in the current occupation of the respondent are as follows (Table 1): The frequency of men over women in jobs in the primary sector is five times higher; in low rated unskilled manual activities it is double for men, in manual activities is almost 4 times men over women, and in classic professions, the frequency is doubled. Meanwhile, women hold 6 times more office positions, 50% more sales occupations, and 3.5 times more "other professions"; namely, positions for which a university degree is required. These do not form part of the professions that dominate the labor market.

Table 1 Percentage distribution of the occupation of the respondent, by sex

Occupation of the Respondent	Women	Men	Total
1 Primary	3.10	14.33	7.39
2 Services	26.97	21.19	24.76
3 Manuals - low	3.19	6.79	4.57
4 Manuals	6.51	23.57	13.04
5 Office	8.66	1.37	5.87
6 Sales	19.35	14.44	17.47
7 Proprietors	2.91	2.03	2.57
8 Other professions	25.41	7.92	18.72
9 Management	0.63	0.72	0.66
10 Classic Professions	3.27	7.64	4.94
Total	100	100	100

Note: n=3,557; for the case of women  $n_m=1,175$ ; for the case of men  $n_h=2,382$ .

Source: Author's estimates based on the EMOVI-2011.

Table 2 shows the distribution of the first occupation. In the primary sector there are almost 6 times more men than

women; twice in unskilled manual activities; there are also 3 times more men in manual activities, and 60% more in classic professions. Women show a rate 5 times higher in office positions, 60% higher in sales positions, 50% higher as owners of small businesses, and three times more in other professions. The data suggest that the most notable differences in men occur at the bottom and at the top of the occupational structure in ascending order. In other words, more men emerge from the primary sector and more men reach the classic professions. Women, meanwhile, are more involved in the middle of the occupational structure.

Table 2 Percentage distribution of first occupation of the respondent, by sex

First occupation of the respondent	Women	Men	Total
1 Primary	3.82	17.47	9.04
2 Services	24.64	19.57	22.70
3 Manuals - low	3.02	6.77	4.46
4 Manuals	8.37	25.20	14.81
5 Office	10.20	2.49	7.25
6 Sales	20.43	13.54	17.80
7 Proprietors	3.29	2.18	2.87
8 Other professions	22.70	6.60	16.54
9 Management	0.16	0.46	0.28
10 Classic Professions	3.36	5.71	4.26
Total	100	100	100

Note: n=3,557; for the case case of women  $n_m=1,175$ ; for the case of men  $n_h=2,382$ .

Source: Author's estimates based on the EMOVI-2011.

Table 3 Percentage distribution of the occupation of respondent's father, by sex

Occupation of the father of the respondent	Women	Men	Total
1 Primary	30.53	35.14	32.29
2 Services	11.98	16.70	13.79
3 Manuals -lows	5.52	6.79	6.00
4 Manuals	34.63	22.74	30.08
5 Office	1.76	1.07	1.50
6 Sales	9.28	9.19	9.25
7 Proprietors	1.33	2.05	1.61
8 Other professions	1.77	3.45	2.41
9 Management	1.97	0.44	1.38
10 Classic Professions	1.23	2.42	1.68
Total	100	100	100

Note: n=3,557; for the case of women:  $n_m=1,175$ ; for the case of men:  $n_h=2,382$ .

Source: Author's estimates based on the EMOVI-2011.

Table 4 provides information of the five variables of interest and their distribution by cohorts.

Table 4 Descriptive statistics of the variables used, by sex of the respondent and cohort

<b>Educational attainment of the respondent<sup>1</sup></b>									
	Women			Men			Total		
	Mean	Standard Deviation	N	Media	Standard Deviation	N	Media	Standard Deviation	N
Btwn 30-37 years old	3.25	1.20	396	3.30	1.13	856	3.27	1.17	1,252
Btwn 38-46 years old	3.46	1.11	354	3.10	1.37	655	3.34	1.21	1,009
Btwn 47-55 years old	2.64	1.50	273	3.00	1.45	460	2.80	1.48	733
Btwn 56-64 years old	2.11	1.33	152	2.17	1.56	411	2.13	1.44	563

<b>First occupation of the respondent<sup>2</sup></b>									
	Women			Men			Total		
	Mean	Standard Deviation	N	Media	Standard Deviation	N	Media	Standard Deviation	N
Btwn 30-37 years old	4.91	2.32	396	4.33	2.54	856	4.68	2.42	1,252
Btwn 38-46 years old	5.88	2.51	354	4.01	2.54	655	5.28	2.66	1,009
Btwn 47-55 years old	4.40	2.45	273	3.86	2.43	460	4.16	2.45	733
Btwn 56-64 years old	4.04	2.31	152	3.47	2.59	411	3.78	2.46	563

<b>Occupation of the respondent in 2011<sup>2</sup></b>									
	Women			Men			Total		
	Mean	Standard Deviation	N	Mean	Standard Deviation	N	Mean	Standard Deviation	N
Btwn 30-37 years old	4.89	2.46	396	4.48	2.69	856	4.73	2.56	1,252
Btwn 38-46 years old	5.98	2.45	354	4.17	2.54	655	5.40	2.61	1,009
Btwn 47-55 years old	4.58	2.53	273	4.38	2.78	460	4.49	2.64	733
Btwn 56-64 years old	3.88	2.53	152	3.65	2.59	411	3.78	2.56	563

<b>Educational attainment of the respondents's father<sup>1</sup></b>									
	Women			Men			Total		
	Mean	Standard Deviation	N	Mean	Standard Deviation	N	Mean	Standard Deviation	N
Btwn 30-37 years old	1.81	1.39	396	1.84	1.42	856	1.82	1.40	1,252
Btwn 38-46 years old	2.25	1.66	354	1.27	1.39	655	1.94	1.64	1,009
Btwn 47-55 years old	1.12	1.32	273	1.14	1.28	460	1.13	1.30	733
Btwn 56-64 years old	0.65	1.09	152	0.75	1.21	411	0.69	1.15	563

<b>Occupational status of the respondent's father<sup>2</sup></b>									
	Women			Men			Total		
	Mean	Standard Deviation	N	Mean	Standard Deviation	N	Mean	Standard Deviation	N
Btwn 30-37 years old	3.48	2.31	396	3.48	2.43	856	3.48	2.36	1,252
Btwn 38-46 years old	3.39	1.82	354	2.86	1.99	655	3.22	1.89	1,009
Btwn 47-55 years old	2.99	2.37	273	3.14	2.35	460	3.05	2.36	733
Btwn 56-64 years old	2.73	1.84	152	2.62	2.16	411	2.68	1.99	563

Notes:

<sup>1</sup> the corresponding scale to the variable is as follows: 1) Without education ; 2) Incomplete elementary school; 3) Completed elementary school; 4) Completed middle/junior high school; 5) Completed high school; 6 ) Undergraduate degree ; 7) Graduate degree.

<sup>2</sup> The corresponding scale to the variable is as follows: 1) Primary; 2) Services; 3) low rated unskilled manual activities; 4) Manual ; 5) Office; 6) Sales; 7) Business owners ; 8) Other professions ; 9) Management ; 10) classic professions .

Btwn: Between

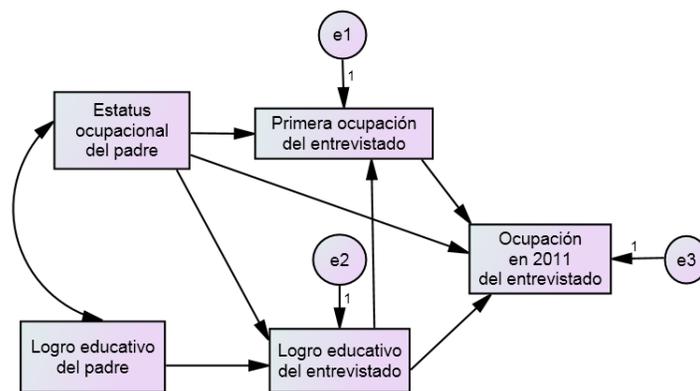
Source: Author's estimates based on the EMOVI-2011.

**The stratification process**

Figure 1 shows the classic analysis of social stratification. According to this model, the current occupation is a function of the first occupation, the educational attainment and the occupational status of the father. In turn, educational attainment has an indirect role in the current occupation to determine the first occupation. For its part, the occupational status of the father has a double indirect role; not only does it affect the first occupation, but also motivates the educational attainment of the respondent. The classic model also proposed that, in the households where the educational attainment of the father was greater, the educational attainment of the respondent would also be. Since the model illustrates the process of assignment, a correlation between occupational status and educational attainment of the father is expected.

Figure 1 Model base of stratification with education of the father

First occupation of the interviewee  
 Occupation of the interviewee in 2011  
 Educational attainment of the interviewee  
 Educational attainment of the father  
 Occupational status of the father



Source: Author's estimates based on the EMOVI-2011.

The model in Figure 1 has already been evaluated in Mexico based on data from the EMOVI 2006.<sup>18</sup> The analyses shown here introduce two novelties. On the one hand, it is the first time that all relationships undergo a simultaneous test on the basis of a complete structural equation model. This has two advantages, a) all effects are controlled by the other variables in the model, b) it has a way to identify whether the observed patterns adjust in accordance with the proposed theoretical model. Although in Blau and Duncan's path analysis there is evidence of the relationships between subgroups of variables (for example, the effect between first occupation and the educational attainment over employment), the weight of the father's educational achievement is not calculated directly over the current occupation of the ego. When analyzing the classic model for the sample of men it could be observed that there are relationships in the observed variables that behave differently from the theoretical model. It was found that removing the link between the occupational status of the father and the current occupation to the same sample of men and adding the relationship between educational attainment and the first occupation of the ego, a sensibly better model is obtained with more plausible relationships than the classic model for the Mexican case ( $\chi^2 = 0.003$ , RMSEA 0.036). In other words: the occupational status of the father appears to play an indirect role in the current occupation of the interviewee, but not a direct effect; for its part, the educational

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<sup>18</sup> I. Puga and P. Solís, *op. cit.*

attainment of the father seems to have a direct effect on the first occupation of the interviewee.

Another contribution in this analysis is the comparison of men and women. More than 40 years after the seminal document of Blau and Duncan, the structural change in the lives and work of women is undeniable. It is necessary to observe how the stratification processes for women and men are both similar and different. From the classic model changes mentioned in the previous paragraph, two models for the populations of men and women over 30 years of the EMOVI-2011 are submitted to the same test.

The model of Figures 2 and 3 is expressed as:

$$y = \Lambda_x x + \beta y + \varepsilon$$

Where:

$\Lambda_x$ : is a matrix of coefficients of regression for the variables of occupation and educational attainment of the father.

$x$ : is a vector of variables composed of occupational status and the educational attainment of the father.

$y$ : is a vector of variables composed of educational attainment, first occupation and occupation to 2011 of the respondent, as well as the variables on access to elementary school education, middle/junior high school education, high school and college for men.

$\beta$ : is a matrix of coefficients of the remaining observable variables in the model.

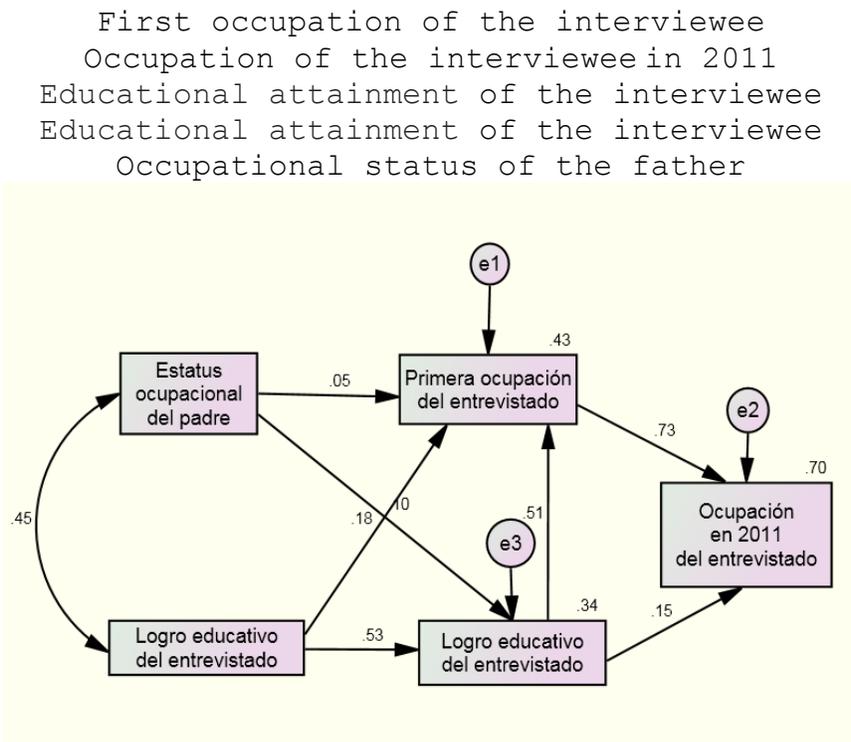
$\varepsilon$ : is the measurement error of the model.

In addition to the observations on the goodness-of-fit and on the relationships between variables, the analyses shown in Figures 2 and 3 have set the variances of the endogenous variables, as well as the weights of each of the paths to see if the indicators of covariance and trajectories show statistically significant differences in both models. After several tests, figures 2 and 3 show an analysis which has set the weight of the path between the first occupation and the occupation of the interviewee. The results are models which show small differences, but statistically significant between both gender groups. The values of goodness-of-fit show that the models fit optimally (GFI=0.994, RMSEA=0.06); that is, the relationships are plausible and there is evidence of structural validity of the complete model. The indicators of explained variance in both models are also interesting, and of the variables that explain the main endogenous variable, the occupation that the respondent held at the time of being interviewed in 2011.

Figure 2 shows that, for women, the first occupation largely determines the current occupation ( $\beta = 0.73$ ), which is also influenced by the educational attainment of the respondents ( $\beta = 0.15$ ). As previously discussed, there are two differences between the models of figures 2 and 3 and the classic model of stratification. The first one is the weight of educational attainment over the initial occupation, which in the case of women it was 0.51. The second difference is the weight of the educational attainment of the father over the first occupation of the respondents, which in the case of

women it has a weight of 0.05 (not statistically different from that of men). And lastly note that the complete model explained 70% of the variance of the endogenous variable; namely the occupation of the respondent at the time it was recovered, in 2011.

Figure 2 Base model of stratification with father's education for women

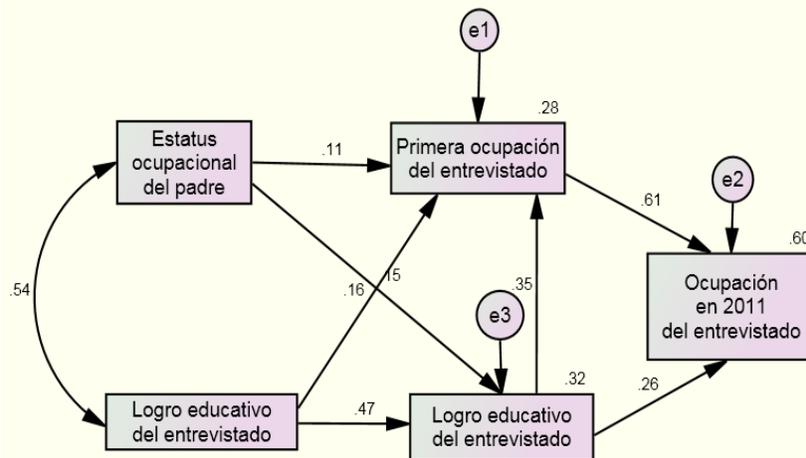


Note: GFI = 0.994; RMSEA = 0.062; n = 1.175  
Source: Author's estimates based on the EMOVI-2011.

Figure 3 shows changes that depict a differentiated stratification process with respect to men. Note that the first occupation influences on large-scale over the present occupation ( $\beta = 0.61$ ); although to a lesser extent in comparison to the women ( $\beta = 0.73$ ). The educational attainment has a greater weight in the current occupation for men ( $\beta = 0.26$ ) than for women ( $\beta = 0.15$ ). As in the previous

case, a significant effect of the educational attainment on the first occupation ( $\beta = 0.35$ ) is shown. Another important difference between the populations of men and women lies in the weight of the occupational status of the father over the first occupation of the interviewee ( $\beta = 0.11$ ), in the case of women, it is insignificant ( $\beta = 0.05$ ); suggesting that somehow the relationship may be direct for the men (for example, to openly influence on the decisions of the male children, or simply as an aspirational model). The father has an impact on the sons that does not exercise on the daughters. Unfortunately, there is no information on the occupation of the mother, but her educational attainment was used to see whether it has a greater influence among women than among men. It did not happen in such way, but the possibility that the result may be due to the greater heterogeneity on the education of the mother than that of the father is not excluded.

Figure 3 Base models of stratification with father's  
education for men  
First occupation of the interviewee  
Occupation of the interviewee in 2011  
Educational attainment of the interviewee  
Educational attainment of the interviewee  
Occupational status of the father



Note: GFI = 0.994; RMSEA = 0.062; n = 2.382.

Source: Author's estimates based on the EMOVI - 2011.

What can we learn from these models? That the position reached in the occupational pyramid depends on the first occupation the ego has, as well as on the education that is reached, but not necessarily on the father's occupation. If the intergenerational mobility is understood as the strength of association between the position of the parents (social position of origin) and the position that children reach in adulthood, and the intra-generational mobility as that experienced by people throughout their own life story; then in general the models suggest that there exist intergenerational mobility but not intra-generational mobility. In other words, the weight of the father's occupation on the initial occupational position is not great, and it is not even relevant in the final occupation of the ego. Instead, the initial occupational status of the person strongly determines the place on the occupational ladder where the person will develop throughout their lives on that path. More important than the position of the father in the occupational pyramid, is the role that the educational attainment directly has on the educational attainment of the

ego and indirectly has on the initial and final occupation of the ego. This means that the reproduction of inequality and the whole process of stratification occur elsewhere other than the labor market. The finding is consistent across models, and in fact the indicators of the educational attainment of men and women do not differ. Here it should be noted that data from the EMOVI-2006 suggest that the occupation is not consistent with income, as indeed it is in other developed countries. This finding is consistent with the lower correlation of the father's education with occupation (0.43) than with the wealth (0.79), as it has been shown in a previous work.<sup>19</sup> The discovery of intergenerational mobility but not of intra-generational has statistically significant differences between women and men. While the weight of the occupation of the father to the starting position of the ego is low in men ( $\beta = 0.11$ ) it is close to 0 in women, whereas the weight of the first occupation is 12 percentage points, or nearly 20% higher among women than it is for men.

Undoubtedly, another important point is with regard to age. Although the model hides relationships between different age cohorts, one could argue that a higher weight in older cohorts in men may interact with greater weight in mature cohorts in women. Thus, the average scores of the two models would vary down in the case of women, given the lower relative weight of mature cohorts in the sample used. A correlation analysis found that these relationships are consistently strong in all cohorts, with a slight downward trend; so the relative weight of the father's schooling on

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<sup>19</sup> J.E. Huerta-Wong, op. cit.

the schooling of *ego*, and the father's occupation on the occupation of *ego*, become more important in the cohort of greater maturity. The above suggests a stratification process somewhat less rigid today.

### ***Investment in human capital***

The indicators of figures 2 and 3 suggest a greater intra-generational mobility among men than among women. The phenomenon may be due to a) men enter the labor market at an earlier age, or b) it may be a consequence of the search for greater stability on the part of women, who then would have a conservative position regarding the mobility in the labor market. There is likely to be more than a differentiated mobility barrier, but an ideological barrier. Questions regarding human capital have reinforced this subject; one is the following: in a context of scarce resources, who do you invest in, the man or the woman? Solutions with good goodness-of-fit are shown in figures 4 and 5.

The amplified model of Figures 4 and 5 include a latent variable that is expressed as:

$$\eta = \Gamma\eta + \zeta$$

Where:

$\Gamma$ : is a matrix of coefficients of the variable preference in human capital investments (development)

$\eta$ : is the latent variable of the model (development)

$\zeta$ : measurement error of the model.

Then, the model of Figures 4 and 5 is expressed as:

$$y = \eta + \varepsilon \Lambda_y$$

Where:

$y$ : is the vector of observable variables of the model (occupational status and educational attainment of the father, educational attainment, first occupation and respondent's occupation in 2011, as well as the variables on access to elementary school, middle/junior high school and college for men)

$\eta$ : variable of development

$\Lambda_y$ : coefficient matrix of the observable variables of the model

$\varepsilon$ : error of the model

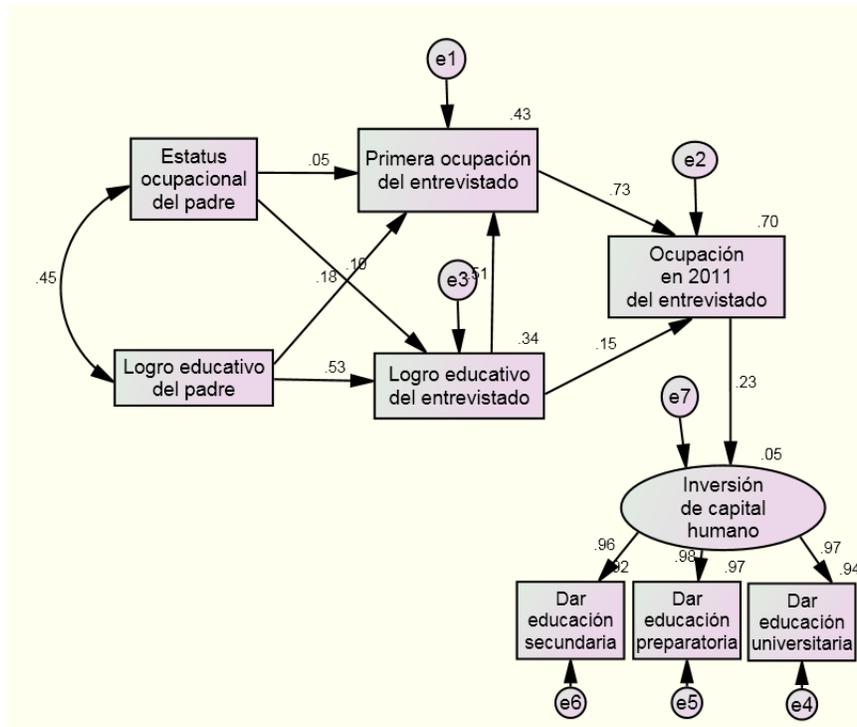
The solution is problematic because of the following: 75 percent of respondents replied "in both". In addition, although the differences between respondents' preference for the sons and the daughters are statistically significant, the model of the daughters adjusted poorly to the theoretical model. Therefore, Figures 4 and 5 report only the preference for investment in males. Note that here the figures do conceal the place where the descriptive data suggest that differences occur. To observe this the education of the *ego* as a *proxy* stratum has been used. As for the descriptive information, the frequencies of preferences by educational level point to a rate of 3 to 2 when the *ego* completed elementary school, regarding the preferences to invest in the education of their sons or daughters, there is a constant difference in the three questions regarding education (middle/junior high school, high school and college/university).

In the case of the *ego* with university education in the general population, there is a 20% higher preference for the sons over the daughters. For this work, however, it was not

considered necessary to perform an analysis of the hypothesis to confirm whether these differences are statistically significant, since they do not constitute the central core of the work. Instead, it was decided to include them in the structural model to test whether there are differences in terms of gender and class preferences regarding investment in the human capital of the sons and daughters.

Figure 4 Base model of stratification with father's education for women

First occupation of the interviewee  
Occupation of the interviewee in 2011  
Educational attainment of the interviewee  
Educational attainment of the father  
Occupational status of the father  
Human capital investment  
Provide middle/junior high school education  
Provide high school education  
Provide college education

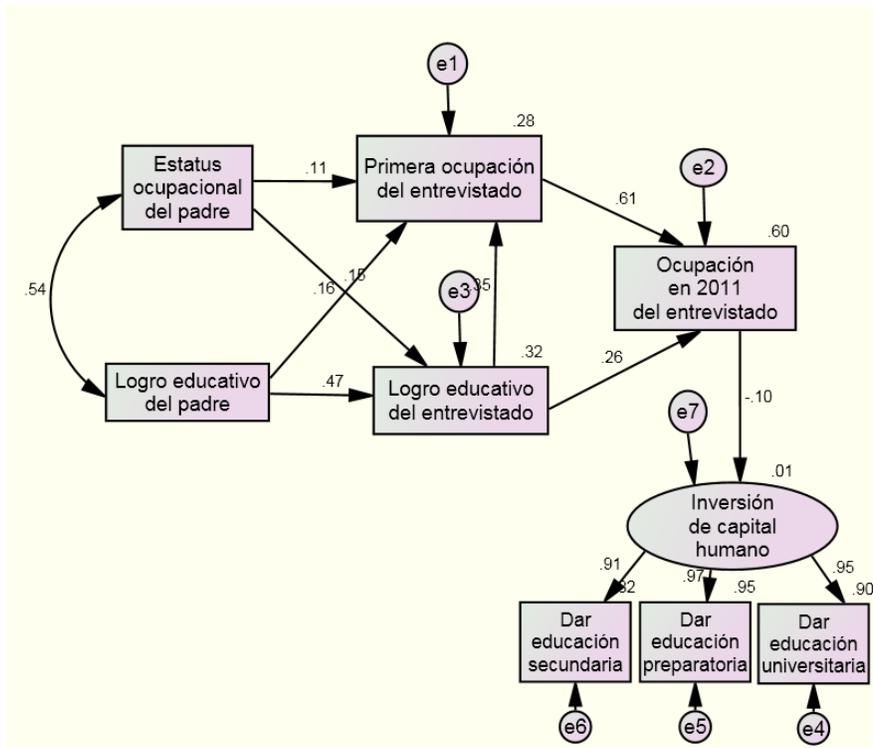


Note: GFI= 0.971; RMSEA= 0.064; n= 1,175.

Source: Author's estimates based on the EMOVI-2011.

Figure 5 Based model of stratification with father's education for men

- First occupation of the interviewee
- Occupation of the interviewee in 2011
- Educational attainment of the interviewee
- Educational attainment of the father
- Occupational status of the father
- Human capital investment
- Provide middle/junior high school education
- Provide high school education
- Provide college education



Note: GFI=0.971; RMSEA= 0.064; n= 2,382.  
 Source: Author's estimates based on the EMOVI-2011.

Figures 4 and 5 suggest that there are statistically significant differences between women and men regarding the preferences of investment in human capital. In both figures, the slope of the effect of the occupation of the respondent on preferences is statistically significant. The figures suggest an interaction between sex, occupation and educational level and educational investments. Figure 4 shows that women with higher levels of occupation report a positive and statistically significant intention to the selective investment in their sons ( $\beta = 0.23$ ) more often than to their daughters. Figure 5 suggests that in the population of men the relationship in terms of employment is exactly reversed. Men with lower occupational status are those who show the intention for such investments ( $\beta = -0.12$ ). The effect of the women on the investment in the education of their male

children is significantly higher than that of men. This shows that women with potentially higher occupational status are the ones who would potentially contribute most to the reproduction cycle of the inequality and stratification scheme. The models of the figures show optimum goodness-of-fit (GFI = 0.971, RMSEA = 0.064). As in the case of Figures 2 and 3, the groups of women and men were introduced at the same time, in order to exercise a dual control over the variables in the models, both for all variables in the model, as for by sex group.

It was expected that men of lower social status would tend to perform actions to reproduce the cycle of inequality more often than people in the top of the occupational ladder. This is so for at least for two reasons, one is for the efficient use of resources, the other one, for ideological reasons. Regarding the first one, it is apparent that people with limited resources tend to invest in those they judge as the most suitable, in this specific case, men. Regarding the second one, it can be argued that people with a better position in the labor market would tend not only to consider less relevant to discriminate efficiently in the investment of their resources, but also to have a greater perspective of gender equality. But the finding of women seems to be a novelty. That the women with higher occupational status would be a factor for social reproduction opens the door to future research questions and a reflection on the implementation of public policies that soften these positions.

## **DISCUSSION**

This document has explored the process of social stratification in Mexico. To this end the researcher used the ESRU Survey on Social Mobility in Mexico 2011, as well as the classical model of Blau and Duncan.<sup>20</sup> An inductive approach to the data set was proposed to analyze the weight of the occupation and father's education on the first occupation, the educational attainment and the occupation at the time of the survey, in 2011. A compared analysis was also introduced for the first time between women and men. Notable differences were found with the classical model, the same that suggest that education plays a role in the stratification process, and that there is a stage of intergenerational mobility but not one of intra-generational mobility. This relationship is even more marked for women than for men. Afterwards, a latent variable was added to the model to see if men and women would establish a difference in the investment decision in the human capital of their children. The structural models indicate that women experience less intra-generational mobility than men. It was also found that women who enjoy a higher occupational status are those with positive attitudes towards differentiated educational investment of men and women. This contributes to the cycle of persistent inequalities between the sexes. Men with low rural occupations or low rated unskilled manual activities seem to contribute to cementing *the sticky soil*, and women with professional and managerial occupations seem to contribute to cementing *the glass ceiling*.

In addition to supporting the hypothesis of the weight of the inheritance over the children, the evidence opens new

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<sup>20</sup> P. Blau and O. Duncan, op. cit.

questions for future research, particularly around the hypothesis of high income. This hypothesis proposes that the dramatic immobility in Mexico has its main origin in the corners of the socioeconomic distribution, but more importantly, in the highest socioeconomic class. So far, a plausible explanation seems to consist in scandalous differences in the socialization process, for example, in small cultural transmission codes (high expectations, professional secrets) that parents in the highest echelon provide to their children daily.

The above are facts that give advantage over children socialized in other socioeconomic class. But the discovery of the differences of women in this same class when differentiating between investments towards men and women open yet more questions about such socialization processes. It is not clear however if there are databases available to explore in depth such processes. Future studies will need to explore more deeply which are the processes of foundation of *the glass ceiling* and *the sticky soil*.

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**ANNEX A**

**CLASSIFICATION OF OCCUPATIONS**

COLLAR CLASS			MANUAL CLASS	
I. PROFESSIONALS-MANAGERS	II. PROPRIETORS	III. ROUTINE - NOT MANUAL	IV. MANUAL	V. PRIMARY
<p><b>A. Classic Professions</b></p> <p>1. Lawyers                      2. Medical doctors (General practitioners) and specialists and other                      3. University professors                      4. Chemicals and other scientists                      5. Economists, statisticians and others                      6. Architects and planners                      7. Public Accountants                      8. Journalists and editors                      9. Civil Engineer and other</p> <p><b>B. Management</b></p> <p>1. Presidents and municipal authorities, among others                      2. Directors, managers and area managers in public</p>	<p><b>1. Proprietors</b></p>	<p><b>A. Sales</b></p> <p>1. Real estate agents and service workers in the lease of real state property                      2. Agents, representatives, distributors and suppliers, Sellers                      3. Insurance agents                      4. cash-payers and collectors                      5. Traders in stores</p> <p><b>B. Office</b></p> <p>1. Receptionist                      2. Secretaries, stenographers, typists, office clerks and similar                      3. Workers in general messaging services</p>	<p><b>A. Manuals</b></p> <p>1. Artisans                      2. Foremen                      3. installers and servicers electronics and other                      4. printers, typesetters, etchers and similar                      5. Drivers railway transport (train, metro and light rail)                      6. Electrical technicians and electric power lineman                      7. Tailors, dressmakers and seamstresses                      8. Mechanical motor vehicle                      9. Blacksmiths, welders, rail workers, aluminum workers and forgers                      10. jewelers, goldsmiths, silversmiths, tinsmiths and coppersmiths                      11. Other mechanics                      12. Plumbers, and pipe</p>	<p>1. Fishermen                      2. Ranchers-Farmers-high level                      3. Ranchers-Farmers-low level</p>

<p>institutions 3. Presidents, directors, general managers in institutions, businesses and private companies, among others</p> <p><b>C. Other professions</b></p> <p>1. Drivers of air transport 2. Workers in personal care and health care (not nursing) 3. Workers' education 4. Professionals in file, library and museum 5. Artists 6. Drivers shipping 7. sports coaches, psychologists, and other professionals 8. Technical 9. Religious professionals 10. Optometrists, technical pharmaceuticals 11 pre-school teachers</p>			<p>fitters 13. cabinetmakers, carpenter, coaters, varnishers, Planning and similar 14. Bakers 15 Welders and flame cutters 16. Daubers, broad brush painters 17. Butchers 18. Operators of pumping equipment, ventilation and cooling 19. Masons, bricklayers and carpenters 20. Drivers of mobile machinery for construction</p> <p><b>B. Low Manuals</b></p> <p>1. Drivers of mobile agricultural and forestry machinery 2. Workers in the development of chemicals and chemical compounds 3. Mining and related work 4. machine operators in food manufacturing 5. Embroiders, weavers, thread and yarn spinners and clothing/textile technologist, among others 6. Feller, cutworms, lumberjacks and the like 7. Tinsmiths, painters metal escorts</p>	
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Source: Author's estimates.