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Middle-Class Entrepreneurs and Social Mobility through Entrepreneurship in Colombia

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Abstract*

The paper uses microeconomic data to characterize entrepreneurs by income group and selected household, individual and business characteristics, finding that entrepreneurship is rare but more frequent in the upper class than the middle or lower classes. Middle-class entrepreneurs are, on average, better off than middle-class employees of similar characteristics but differ greatly from upper-class entrepreneurs in terms of educational attainment, the size of their businesses, and their outcomes. While entrepreneurs appear to have more income mobility than the average worker, this paper cannot establish whether this is true for middle-class entrepreneurs in particular, nor provide evidence to support the hypothesis that middle-class entrepreneurs' activity is an engine for economic growth. Instead, the findings suggest that the types of businesses run by these entrepreneurs are characterized by low productivity. Consequently, policies to increase social mobility seem to hold greater promise for promoting higher productivity and welfare than policies encouraging entrepreneurship.

JEL classifications: I31, L26, O12

Keywords: Middle class, Social mobility, Entrepreneurship, Survey data, Colombia

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1. Introduction

“If the middle class matters for growth, it is probably not because of its entrepreneurial spirit,” Banerjee and Duflo (2008) conclude in their overview examining the middle classes around the world. Middle-class entrepreneurs run businesses mostly because they cannot find the right salaried jobs, and their business investments are very similar to those of the poor. The main difference is that they are less likely to be in farming businesses when they live in rural areas. Working on their own, they are able to make about the same amount of money as if they were employed, while working longer but less intensive hours, assuming they could find a salaried job. Banerjee and Duflo depict their businesses more as means of sustenance than as “engines of growth.”

Despite the low profits of their businesses, middle-class entrepreneurs enjoy high returns to capital investments. This fact, combined with evidence of high borrowing costs, suggests that businesses of middle-class entrepreneurs are undercapitalized because of poor access to credit. Why these businesses are so similar to those of the poor, when middle classes are typically less credit-constrained, is a puzzle. Lack of savings to grow their businesses is also puzzling because the middle class accumulates other assets and is more likely to have savings accounts than the poor.

Banerjee and Duflo’s analysis is based on information on households at the two ends of what they call the middle class: households with daily per capita expenditures valued at purchasing power parity between \$2 and \$4, and households between \$6 and \$10.¹

Consistent with these findings, using data from the Panel Study of Income Dynamics of the United States, Hurst and Lusardi (2003) find that the relationship between initial wealth and the propensity to start a business is highly nonlinear, with a positive relationship only for households in the top 5 percent of the wealth distribution. While there is a substantial amount of literature documenting a positive relationship between initial wealth and business entry,² these authors interpret their finding that this relationship does not hold for most of the population as casting doubt on the importance of liquidity constraints as deterring business formation (in the United States).

¹ All dollar amounts are in U.S. dollars.

² Evans and Jovanovic (1989); Evans and Leighton (1989); and Gentry and Hubbard (2001), among others.

In a related study, Ardagna and Lusardi (2008) explore the role of individual characteristics as potential explanations of international differences in entrepreneurship in a cross-country setting using micro data. They distinguish between entrepreneurs driven by an interest to pursue a business opportunity (“opportunity entrepreneurs”) and what they call “remedial” entrepreneurs: entrepreneurs whose businesses are more the means of sustenance, as in the type portrayed by Banerjee and Duflo when referring to middle-class entrepreneurs. Ardagna and Lusardi find that opportunity entrepreneurs are slightly younger, more likely to be male, more likely to have higher education levels, and more likely to have higher incomes. These results hold across country groups divided by income and geographic areas.

The question of whether the middle class is a cradle for entrepreneurship, capable of driving innovation and business growth, and of fostering social mobility through the pursue of business opportunities, or if the middle class is not particularly entrepreneurial—as the literature mentioned above suggests—is ultimately an empirical question, and the answer may be partly dependent on particular country characteristics.

This paper explores the case of Colombia using microeconomic data to characterize entrepreneurs by income group in terms of both their household and individual characteristics, and in terms of the characteristics of the businesses in which they participate. It also investigates whether middle-class entrepreneurs have more social mobility than the average worker.

We find that entrepreneurship is rare and is more frequent in the upper classes. Middle-class entrepreneurs are better off than middle-class employees of similar characteristics, on average, but they are very different than upper-class entrepreneurs in terms of their educational attainment and the size of the businesses they run. While, in general, entrepreneurs appear to have more income mobility than the average worker, we are unable to establish if this is true for entrepreneurs from the middle class in particular or if this mobility is a result of entrepreneurship more generally. We are also unable to provide evidence supporting the hypothesis that their activity is an engine for economic growth. Our findings suggest that the types of businesses they run are of low productivity. We conclude that there is nothing in particular about Colombian middle-class entrepreneurs that suggests that policies to promote entrepreneurship among this segment of the population would be

desirable. Policies aimed more generally at increasing social mobility seem more promising in terms of their potential for promoting overall higher productivity and welfare.

2. Entrepreneurship in the Middle Class

We start by characterizing Colombian middle-class entrepreneurs using the 2010 Living Standards Survey (LSS) from DANE, Colombia's national office of statistics.

This survey is representative nationwide, for urban and rural areas, and for nine country regions. It collects information about both individuals' and households' characteristics, including detailed information about their expenditures that allows us to categorize households (and entrepreneurs) according to the expenditure per capita groups in which they belong.

For the purpose of this research, we define entrepreneurs as individuals who identify themselves in the survey as employers.³ To assign them to income groups, we use the thresholds proposed by the 2011 World Bank's Flagship on Middle Classes, by which households with daily per capita expenditures between 10 and 50 Purchasing Power Parity 2005 U.S. dollars are considered to belong in the middle class. We also considered two alternative approaches,⁴ both resulting in a middle class grouping poorer households and smaller shares of entrepreneurs. The approach chosen not only maximizes the number of middle-class entrepreneurs but also has the advantage of permitting cross-country comparability, which is a secondary goal of this research.

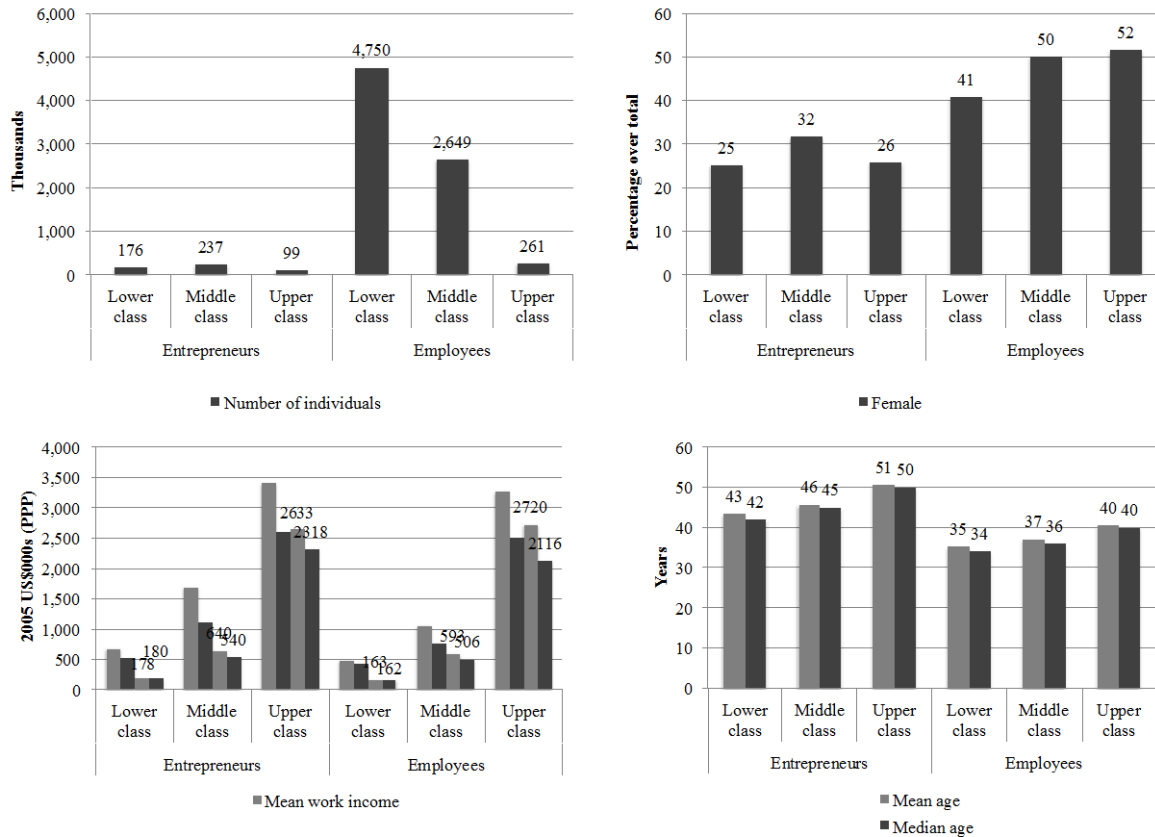
Figures 1 and 2, and Table 1, characterize individuals as either entrepreneurs or employees, divided into economic class as defined by their household's per capita expenditure. Figure 1 shows that there are relatively few entrepreneurs (512,000 entrepreneurs, compared to 7,660,000 employed workers in 2010). While in terms of absolute numbers entrepreneurs are concentrated in the middle class, as a share of total workers entrepreneurs are more in the upper class. As a share of the working population, only 3.5 percent are entrepreneurs (see Appendix Table 1). Female participation is much

³ By DANE's definition, individuals in this occupational category are those who lead their own economic endeavor or practice a profession or trade independently, with one or more paid workers.

⁴ A first approach considered the middle class the households with daily per capita expenditures falling between 50 percent and 150 percent of the distribution's median. The resulting thresholds were \$3.10 and \$9.20. A second approach assigned households to three expenditure groups based on a Polarization Index. The resulting middle class thresholds were \$5.80 and \$18.50. Descriptive statistics using the alternative definitions of the middle class are included in the Appendix.

lower among entrepreneurs than among employed workers, and this holds true for all social classes (25 percent versus 41 percent in the lower class; 31 percent versus 50 percent in the middle class; and 26 percent versus 52 percent in the upper class). Entrepreneurs are older than their employed counterparts, on average.

Figure 1. Entrepreneurs' and Employees' Characteristics by Economic Class: Entrepreneurship, Gender, Income, and Age



Source: Authors' calculations based on Living Standards Survey 2010.

Table 1 shows that entrepreneurs in all classes are better off than employed workers in terms of labor income. The mean monthly income of a middle-class entrepreneur is \$1,690, well above the \$1,054 figure for a middle-class employee. The difference is not as great in the other two classes, (\$674 for entrepreneurs versus \$476 for employees in the lower class, and \$3,411 for entrepreneurs versus \$3,268 for employees in the upper class), but the advantage remains. Mean labor income is broken down further by individuals' characteristics (gender, age, education, sector of activity, and business size). On average, females have lower labor incomes. Labor income increases by age and education for both

entrepreneurs and employees, but entrepreneurs do better than employees of similar characteristics. This pattern holds for other sectors of activity and for all business sizes, with the exception of upper class individuals working in agriculture, mining or manufacturing, who do better when they are employed than as entrepreneurs. Average labor incomes increase by business size for all individuals.

Table 1. Labor Income by Worker Characteristics

	Lower-class entrepreneurs	Middle-class entrepreneurs	Upper-class entrepreneurs	Lower-class employees	Middle-class employees	Upper-class employees
	<\$ 10 a day	\$10-\$50 a day	>\$50 a day	<\$ 10 a day	\$10-\$50 a day	>\$50 a day
All	674	1,690	3,413	476	1,054	3,269
Individual is:						
Female	445	1,316	3,315	421	962	2,593
Is illiterate	717	512	-	265	337	-
Has no education	1,586	512	-	269	378	-
Completed elementary education	553	1,851	1,477	335	484	582
Completed secondary education	540	1,656	3,131	386	546	570
Completed technical education	786	1,371	3,775	481	762	862
Completed college education or higher	770	1,796	1,795	633	983	1,758
No answer	295	1,614	3,286	450	882	2,533
Younger than 25	921	885	1,467	340	630	1,457
25-45	625	1,618	4,325	504	1,024	3,159
45-55	643	1,517	2,369	534	1,351	3,647
Older than 55	815	2,058	3,498	478	1,295	4,078
In agriculture or mining	410	1,674	3,678	355	1,515	4,296
In manufacturing	900	1,733	1,843	471	888	5,455
In retail	598	1,474	3,664	401	700	2,362
In services	683	1,873	4,925	597	1,179	3,361
In business of 1-3 workers	573	1,200	3,436	276	428	581
In business of 4-10 workers	952	2,268	3,358	390	669	2,032
In business of 11-50 workers	534	3,949	3,442	499	931	2,712
In business of more than 51 workers	-	2,877	-	651	1,294	3,667

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Statistics calculated for a working population aged 15 years or older.

Units: 2005 PPP U.S. dollars.

Unsurprisingly, as shown in the upper left-hand panel of Figure 2, the upper class has the largest concentration of individuals with the highest levels of educational attainment (79 percent of upper class entrepreneurs and 77 percent of upper-class employees completed technical or higher education). Ten percent of middle class entrepreneurs have primary education or less; 41 percent only completed high school; and 42 percent have a technical education or higher. A large share of individuals work under informal labor arrangements.⁵ While this is more common among entrepreneurs (59 percent of lower-class entrepreneurs

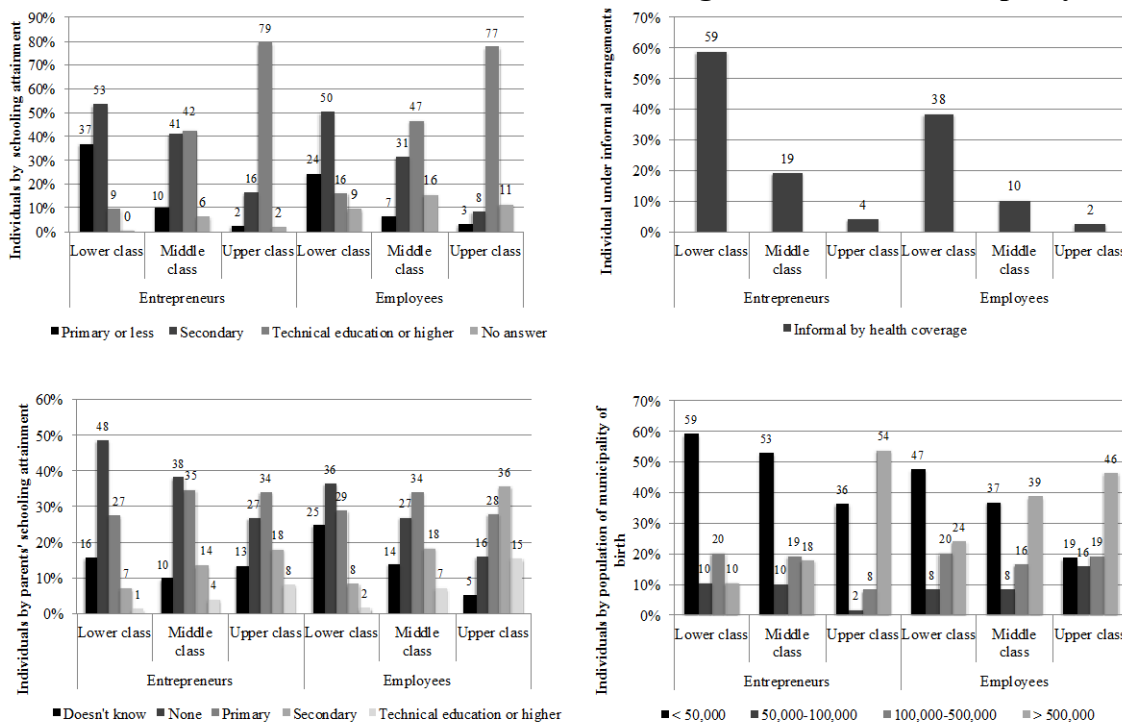
⁵ An informal labor arrangement is defined as one under which the worker has access to health coverage under the subsidized regime instead of making the monthly contribution to the health insurance system as mandated by law in Colombia.

and 19 percent of middle-class entrepreneurs fall in this category), the percentages are also relatively large for employees (where the corresponding shares are 38 percent and 10 percent).

The survey asks individuals about their parents' level of educational attainment. By looking at the highest education level obtained by their parents (mother or father), we are able to provide a first take on social mobility. We find that individuals in all social classes are on average more educated than their most educated parent. Middle- and upper-class entrepreneurs do not differ much by their parent's maximum education level, and are also comparable in this characteristic to middle-class employees. Upper-class employees have more educated parents, on average.

When individuals are grouped by the size of the municipality where they were born, we see that middle-class entrepreneurs come more from smaller towns than middle-class employees, and that a higher share of both entrepreneurs and employees in the upper class come from larger cities.

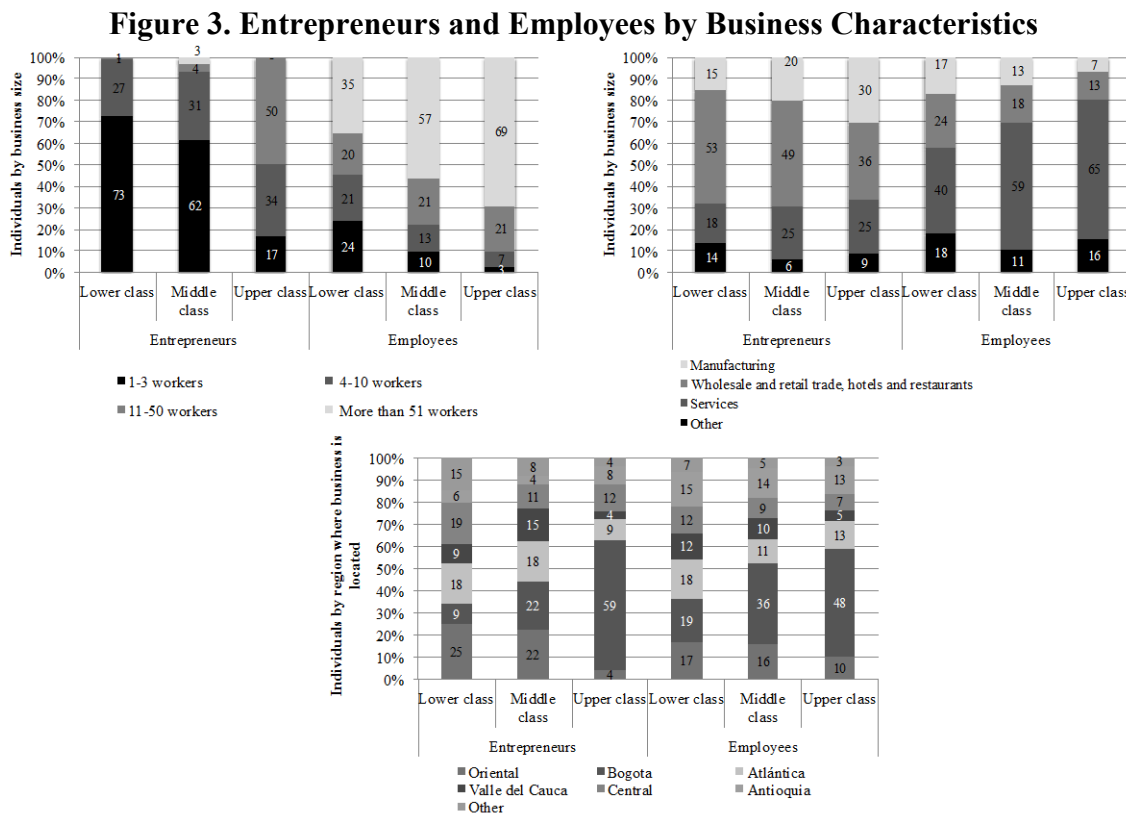
Figure 2. Entrepreneurs' and Employees' Characteristics by Economic Class: Education, Parents' Education, Health Coverage, and Size of Municipality



Source: Authors' calculations based on Living Standards Survey 2010.

Figure 3 presents entrepreneurs' and employees' distributions across business sizes, sectors of activity, and country regions. Entrepreneurs work in smaller businesses than employees. Lower-class and middle-class entrepreneurs are concentrated in businesses of 10 or fewer employees; while upper-class entrepreneurs in businesses of more than 51 workers are rare. In contrast, the majority of middle-class and upper-class employees work in firms with more than 51 workers. Entrepreneurs and employed workers also differ by the sectors of activity in which they participate. While a majority of entrepreneurs in all social classes are in wholesale and retail trade activities, a much larger share of employees more in services.

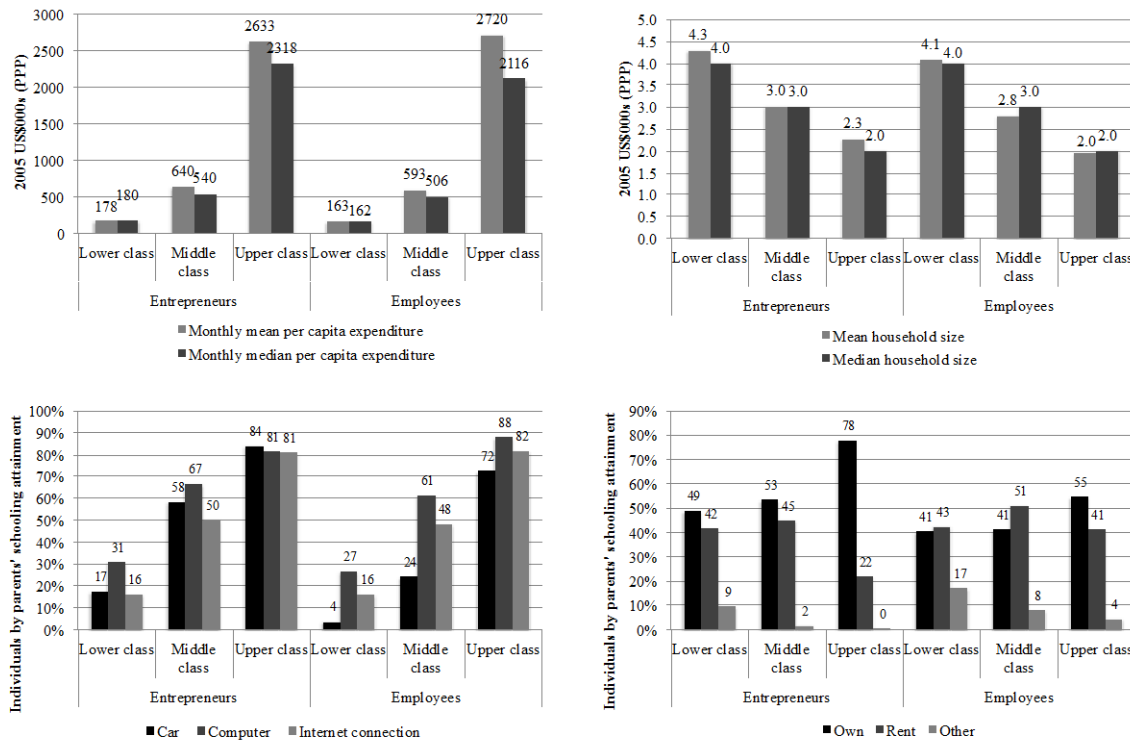
As for the regional breakdown, entrepreneurs (34 percent of lower-class entrepreneurs; 44 percent of middle-class entrepreneurs; and 63 percent of upper-class entrepreneurs) and employed workers (36 percent of lower-class employees; 52 percent of middle-class employees; and 58 percent of upper-class employees) tend to congregate in regions with high economic activity (Bogotá, and the eastern region comprising Santander, Santander del Norte, Cundinamarca, Boyacá and Meta, labeled “Oriental” in Figure 3).



Source: Authors' calculations based on Living Standards Survey 2010.

Figure 4 characterizes individuals by their household characteristics. We restrict our descriptive analysis to households in which either the head of household is an entrepreneur, or is reportedly not working (and not receiving an income) but one other person describes himself or herself as an entrepreneur. Similarly, households are defined as employee households if either the head of household reports being employed, or is not working (and not receiving an income) but at least one other person is employed. Entrepreneurs' households thus defined represent 3.1 percent of all urban households, while employees' household represent 40 percent. Of the remaining households, which are not explored in this study, 36 percent derive their income from self-employed workers; and 11 percent are households in which the head is not working, but there are at least two other persons who work for an income. In this last group, only 0.1 percent has someone working as an entrepreneur.

Figure 4. Household Characteristics of Entrepreneurs and Employees



Source: Authors' calculations based on Living Standards Survey 2010.
 PPP=purchasing power parity

The households of lower-class and middle-class entrepreneurs have higher per capita expenditure levels than the households of lower-class and middle-class employees (\$178 versus \$163 in the lower class, and \$640 versus \$593 in the middle class). Upper-class entrepreneurs' households are on average less well-off than the households of upper-class employees, but the median expenditure per capita is \$200 higher for upper-class entrepreneurs than upper-class employees. Households' sizes vary more across social classes than across worker types, and this holds true also for ownership of durable goods. Middle-class entrepreneurs own durable goods in a larger proportion than middle-class employees, and this most marked with respect to car ownership (58 percent of entrepreneurs versus 24 percent of employees).Entrepreneurs are more likely to own their own home than employees, in all social classes.

3. The Choice to Be an Entrepreneur

To explore the drivers of the choice to be an entrepreneur, and also to analyze mobility within and across generations,⁶ we use previous waves of Living Standards Survey data for 1997, 2003, and 2008.

To explore the drivers of the choice to be an entrepreneur, we use a Multinomial Probit model that we estimate over all individuals 25 to 65 years old reporting a labor income or reporting being unemployed (with unemployment as the base category). As before, our sample is restricted to individuals in the urban areas. Using this specification, we estimate the probabilities of being an entrepreneur, an employed worker, or a self-employed worker⁷ and are able to compare the relative importance of each variable as a determinant of the alternative choices. The model explains the probability that an individual chooses to be an entrepreneur as a function of (a set of) individuals' and household's characteristics.⁸

Table 2 presents the corresponding summary statistics. Estimation results are presented in Table 3. From this model, we learn that the probability of being an entrepreneur relative to that of being employed, self-employed, or unemployed is 2.6 percentage points lower when the worker is a female; 0.1 percentage points higher for each additional year of

⁶ We have gone through a careful process to homogenize households' expenditure across surveys in order to make them comparable.

⁷ A self-employed worker is defined as a person who works independently on his or her own and has no paid employees.

⁸ The model includes time dummies to control for estimation for the macroeconomic cycle.

age; 0.2 percentage points higher for each additional year of schooling, increasing with the parents maximum level of education; 1.4 percentage points lower for individuals born in municipalities of more than 500,000 inhabitants; 2.8 percentage points higher if the individual is a head of household; and 2.0 percentage points higher if the individual is the spouse of the head of household.

The model also shows individual and household characteristics often affect the probability of being an entrepreneur and the probability of being employed in opposite directions. For example, the probability of being an employed worker is 5.4 percentage points higher if the individual is a female; 0.7 percentage points lower for each additional year of age; and 6.9 percent lower if the individual is a household head. Also, the probability of being employed is higher for individuals with more educated parents. Years of schooling have a larger (positive) effect on the probability of being employed than on the probability of being an entrepreneur.

The Multinomial Probit model confirms that self-employment is an occupational choice of individuals whose characteristics are different than those of both employees and entrepreneurs, on average. Age, for instance, raises the probability of being self-employed by 0.6 percentage points; years of schooling decreases the probability of being self-employed, as does parents' maximum educational attainment.

Table 2. Summary Statistics for Multinomial Probit Model

Variable	Mean	Std. Dev.	Min	Max
Employee	0.537	0.499	0	1
Entrepreneur	0.041	0.199	0	1
Self-employed worker	0.413	0.492	0	1
Unemployed	0.022	0.148	0	1
Female	0.452	0.498	0	1
Age	39.741	9.134	25	64
Years of schooling	8.589	4.795	0	18
Maximum parents' schooling attainment:				
No education	0.441	0.497	0	1
Elementary	0.383	0.486	0	1
High-school	0.102	0.302	0	1
Technical or higher	0.074	0.262	0	1
Municipality of birth by population size:				
25,000-50,000	0.496	0.500	0	1
50,000-100,000	0.093	0.291	0	1
100,000-500,000	0.148	0.355	0	1
More than 500,000	0.263	0.440	0	1
Household head	0.607	0.488	0	1
Spouse	0.245	0.430	0	1
Average age of household members	29.439	10.697	8	77
Number of household members	3.959	1.813	1	20

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008 and 2010.

Note: There are 39,889 observations for all variables. Individuals who report not knowing their parents' education were excluded from estimation.

Table 3. Multinomial Probit to Explain the Choice of Being an Entrepreneur

Base category: Unemployed individuals, 25 to 65 years old	Entrepreneurs		Self-employed workers		Employees	
	Coefficients	dy/dx	Coefficients	dy/dx	Coefficients	dy/dx
Female	0.062 [0.154]	-0.026** [0.002]	0.746** [0.140]	-0.022** [0.006]	0.898** [0.140]	0.054** [0.006]
Age	0.030** [0.009]	0.001** [0.000]	0.023** [0.008]	0.006** [0.000]	-0.005 [0.008]	-0.007** [0.000]
Years of schooling	0.091** [0.013]	0.002** [0.000]	-0.005 [0.012]	-0.015** [0.001]	0.054** [0.012]	0.013** [0.001]
Parent with elementary	0.345* [0.135]	0.004+ [0.002]	0.136 [0.122]	-0.039** [0.006]	0.299* [0.122]	0.037** [0.006]
Parent with high school	0.647** [0.215]	0.016** [0.004]	0.105 [0.200]	-0.061** [0.009]	0.348+ [0.199]	0.047** [0.009]
Parent with technical education or higher	1.313** [0.291]	0.025** [0.005]	0.582* [0.277]	-0.073** [0.011]	0.868** [0.276]	0.053** [0.011]
Municipality of birth by size						
50,000-100,000	-0.171 [0.202]	0.001 [0.003]	-0.056 [0.185]	0.056** [0.009]	-0.298 [0.185]	-0.058** [0.009]
100,000-500,000	-0.210 [0.170]	0.000 [0.003]	-0.179 [0.157]	0.015+ [0.008]	-0.245 [0.156]	-0.017* [0.008]
More than 500,000	-0.641** [0.152]	-0.014** [0.002]	-0.229+ [0.138]	0.001 [0.007]	-0.213 [0.138]	0.010 [0.007]
Spouse	1.284** [0.217]	0.020** [0.004]	0.704** [0.186]	0.005 [0.010]	0.654** [0.185]	-0.020+ [0.010]
Household head	1.564** [0.252]	0.028** [0.006]	1.034** [0.223]	0.047** [0.010]	0.792** [0.223]	-0.069** [0.010]
Average age of household members	0.007 [0.009]	0.000 [0.000]	0.006 [0.008]	0.000 [0.000]	0.005 [0.008]	-0.000 [0.000]
Number of household members	0.040 [0.043]	0.000 [0.001]	0.069+ [0.038]	0.014** [0.002]	0.011 [0.038]	-0.014** [0.002]
Constant	-1.620** [0.442]		1.799** [0.396]		3.058** [0.395]	
Observations	39,889	39,889	39,889	39,889	39,889	39,889
Year dummy	yes	yes	yes	yes	yes	yes

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.

Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

4. Inter-generational Social Mobility

We address the question of whether middle-class entrepreneurship is positively associated to social mobility using microeconomic information about individuals' and their parents' education available from the 1997, 2003, 2008, and 2010 waves of DANE's Living Standards Survey .

Table 4 makes a first attempt at answering this question by looking at transition matrixes in which the educational attainments of parents are associated with that of their adult children. We have computed these transition matrixes for each year for which the

survey is available, restricting the sample to the middle class, and making separate calculations for entrepreneurs and employees.

For this purpose, individuals were assigned to one of four education categories according to the highest level completed (no education, primary, high school, and technical education or higher). We excluded individuals who report that they did not know their parents' education level.

The first striking impression that emerges from these matrixes is that there is substantial mobility in Colombia, in the sense that children tend to do better their most educated parent, at least in years of schooling. The percentage of individuals with schooling equal or below their parents' has dramatically fallen over time for individuals whose most educated parent had only completed elementary education or had no education at all. In 1997, 30 percent entrepreneurs whose parents had no education at all had ended in the same education category, while the share in 2010 was 7 percent (the corresponding numbers in the case of employees were 11 percent and 4 percent). Similarly, in 1997, 40 percent of entrepreneurs whose most educated parent had completed only elementary school had completed elementary school or had no education; in 2010 this share had fallen to 24 percent (the corresponding numbers in the case of employees were 26 percent and 19 percent).

Also, the share of individuals whose parents had at most completed elementary school who completed technical or higher education has grown remarkably over time. In the case of entrepreneurs, it jumped from 25 percent in 1997 to 56 percent in 2010. In the case of employees, it grew from 43 percent in 1997 to 53 percent in 2010.

In contrast with these results, which point toward higher upward mobility for entrepreneurs compared to those who became employees, educational attainment the share of entrepreneurs with technical education or higher whose most educated parent is in the same education category appears to have fallen over time from 98 percent in 1997 to 91 percent in 2010. This result must be interpreted with caution because the number of entrepreneurs surveyed whose parents fall in this education category is very small; for this reason, these statistics probably lack representativeness.⁹

⁹ In a confirmation that lack of representativeness may be the case, the corresponding shares for employees go in the expected positive direction, moving from 79 percent in 1997 to 86 percent in 2010.

Table 4. Transition Matrixes

Middle class entrepreneurs

1997					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	30	39	21	10
	Elementary	3	37	36	25
	High-school	2	4	16	79
	Technical or more	0	2	0	98

2003					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	10	41	21	27
	Elementary	1	28	32	39
	High-school	2	16	34	48
	Technical or more	0	1	16	83

2008					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	11	47	24	19
	Elementary	0	33	33	34
	High-school	8	6	19	67
	Technical or more	0	0	20	80

2010					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	7	27	36	30
	Elementary	1	23	21	56
	High-school	0	10	25	65
	Technical or more	0	0	9	91

Middle class employees

1997					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	11	39	23	28
	Elementary	1	25	31	43
	High-school	0	7	30	63
	Technical or more	0	5	16	79

2003					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	8	31	25	37
	Elementary	2	16	31	52
	High-school	0	10	23	67
	Technical or more	0	6	12	82

2008					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	11	34	28	27
	Elementary	2	23	31	44
	High-school	0	4	30	66
	Technical or more	0	5	14	81

2010					
		No education	Elementary	High-school	Technical or more
Parents' schooling	No education	4	27	26	43
	Elementary	2	17	28	53
	High-school	0	3	23	74
	Technical or more	0	3	11	86

Source: Authors' calculations based on Living Standards Survey 2010.

Units: percentages.

In order to more properly assess to what extent parents' educational attainment explains individuals' education level, we estimate the following baseline regression:

$$S_i = \alpha + \beta_1 PS_i^1 + \beta_2 PS_i^2 + \beta_3 PS_i^3 + \varepsilon \quad (1)$$

where S_i is individual i 's educational attainment measured in years of education and PS_i^1 , PS_i^2 and PS_i^3 are indicator variables that take a value equal to 1 when the individual's most educated parent completed elementary, high school, or technical or higher education, respectively, and are equal to 0 otherwise. We also estimate a version of this regression interacting parents' education variables with a dummy variable that is equal to 1 when the individual is a middle-class entrepreneur and zero otherwise, to capture any differential effect from this particular population group.

Estimation results are presented in Table 5 and Table 6. In 2010, parent's elementary education accounted for 2.5 additional years of schooling; parent's high school education accounted for 4.1 additional years; and parent's technical or higher education accounted for 4.8 additional years. So parent's education level is strongly associated with their children's. The magnitude of this positive correlation has decreased substantially over time, however (for example, the coefficient on parent's technical education, which was equal to 6.6 in 1997, had fallen to 4.7 by 2010), indicating that individuals' education levels are decreasingly explained by their parents'.

Table 5. Social Mobility Regressions 1

Dependent variable: Years of schooling_{it}	1997	2003	2008	2010	Pooled data
	(1)	(2)	(3)	(4)	(5)
Parents' schooling attainment:					
Elementary	3.210** [0.114]	2.940** [0.072]	2.576** [0.116]	2.538** [0.099]	2.823** [0.047]
High-school	5.121** [0.202]	4.798** [0.111]	4.413** [0.190]	4.150** [0.149]	4.648** [0.075]
Technical or higher	6.575** [0.278]	5.670** [0.109]	5.224** [0.212]	4.730** [0.274]	5.639** [0.085]
Constant	5.306** [0.076]	6.605** [0.051]	6.896** [0.075]	6.843** [0.062]	6.514** [0.032]
Observations	6,355	18,661	7,365	10,090	42,471
Adjusted R-squared	0.186	0.177	0.136	0.113	0.159

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010

Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

Interactions of parents' education and middle-class entrepreneurs' dummy variables are not always significant. They are negative and significant in the 2003 and 2010 regressions, however, and when the data of all four surveys are pooled together. The resulting lower correlation in the case of middle-class entrepreneurs suggests that their educational attainment is less explained by their parents' educational attainment than that of the average individual.

Table 6. Social Mobility Regressions 2

Dependent variable: Years of Schooling_(e)	1997	2003	2008	2010	Pooled data
	(1)	(2)	(3)	(4)	(5)
Parents' schooling attainment:					
Elementary	3.199** [0.116]	2.950** [0.073]	2.575** [0.117]	2.550** [0.100]	2.829** [0.048]
High school	5.147** [0.206]	4.814** [0.113]	4.463** [0.192]	4.165** [0.150]	4.669** [0.076]
Technical or higher	6.477** [0.285]	5.668** [0.110]	5.239** [0.215]	4.798** [0.278]	5.636** [0.086]
Dummy=1 if middle class entrepreneur	1.697** [0.631]	2.839** [0.391]	1.375* [0.564]	2.981** [0.506]	2.436** [0.250]
Dummy=1 if middle class entrepreneur x Elementary	-0.636 [0.786]	-1.419** [0.495]	-0.322 [0.802]	-1.285+ [0.741]	-1.128** [0.330]
Dummy=1 if middle class entrepreneur x High school	-1.702 [1.062]	-2.045** [0.620]	-2.264+ [1.215]	-1.770+ [0.989]	-1.893** [0.437]
Dummy=1 if middle class entrepreneur x Technical or higher	0.878 [1.405]	-1.316* [0.656]	-1.048 [1.276]	-3.687* [1.611]	-1.166* [0.501]
Constant	5.281** [0.077]	6.555** [0.052]	6.871** [0.076]	6.797** [0.062]	6.473** [0.032]
Observations	6,355	18,661	7,365	10,090	42,471
Adjusted R squared	0.188	0.181	0.137	0.117	0.162

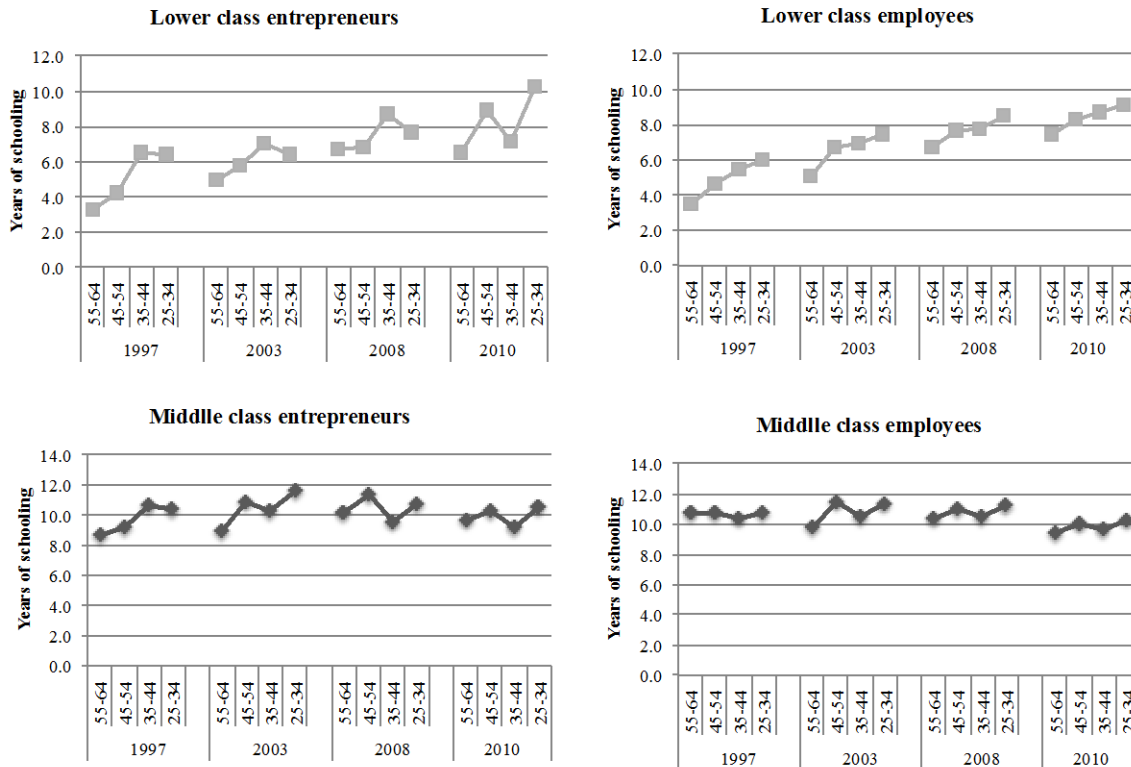
Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008 and 2010.

Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

Progress in terms of educational attainment between 1997 and 2010 is probably a result of government policies aimed at reaching previously excluded populations. Figure 5 looks at the schooling evolution of four age groups over this period, once again considering entrepreneurs and employees separately. The progress in average years of schooling of individuals in the lower class is impressive. Not only are the younger age groups achieving higher education levels than the older age groups in every point in time we observe, but also the least educated age groups are

increasingly more educated than they were in the past. In contrast, the evolution of average schooling in the middle class is much flatter.

Figure 5. Years of Schooling by Age Group, 1997–2010



Source: Authors' calculations based on Living Standards Survey 2010.

5. Intra-generational Mobility

Regretfully, there are no panel data available that would allow us to estimate a model of social mobility relating an individual's income to his parents' income in the past or to his parents' wealth. Using pseudo panel techniques, however, we are able to explore intra-generational earnings dynamics: that is, how much individuals' earnings today are determined by their earnings in the past.

Pseudo panel estimation techniques involve using cohorts of individuals with common characteristics from repeated cross-sections and analyzing the observations on cohort averages as if they were observations on individuals that are observed in consecutive time periods (as originally suggested by Deaton, 1985).

Following the literature on pseudo panels, we start by estimating a basic model of absolute mobility:

$$\bar{Y}_{c(t),t} = \alpha + \beta \bar{Y}_{c(t-1),t-1} + \varepsilon_{c(t),t} \quad (2)$$

where $\bar{Y}_{c(t),t}$ is the cohort's average labor income at time t , and $\bar{Y}_{c(t-1),t-1}$ is the cohorts' average labor income at time $t-1$. Since this equation does not control for individual characteristics, it captures how much current income alone is important in determining the evolution of its future values.

We then estimate a second equation in which we interact the cohorts' average labor income at time $t-1$ with the share of individuals who are entrepreneurs (calculated over all working individuals), MCE , in order to capture any differential impact on income mobility from entrepreneurship:

$$\bar{Y}_{c(t),t} = \alpha + \beta_1 \bar{Y}_{c(t-1),t-1} + \beta_2 MCE + \beta_3 \bar{Y}_{c(t-1),t-1} MCE + \varepsilon_{c(t),t} \quad (3)$$

We also estimate an additional model specification including interactions of the cohorts' average labor income at time $t-1$ with a dummy equal to 1 if the cohort is a female cohort. In a second set of regressions, we replace the cohorts' average labor income (at times t and $t-1$) by the ratio of the cohorts' average labor income to median labor income. This set of regressions is meant to assess relative mobility.

The whole exercise is then redone substituting the individual's labor income by his/her household's per capita income. In this case, we restrict the sample to working individuals who are the main providers of their household's income, in order not to be misled by households in which entrepreneurs coincide with other types of workers (who may be driving the household's per capita income).

We experimented with alternative cohort definitions in order to understand the effect of including different time-invariant individual characteristics (resulting in synthetic panels of varying sizes and cohorts encompassing different numbers of observations). Because this does not seem to alter our main findings, we discuss the results obtained from the cohorts more broadly defined, by birth date (with birth dates in the same five-year range falling in the same cohort), and gender. This partition results in a total of 93 observations spread over four years (1997, 2003, 2008, and 2010).¹⁰

¹⁰ Each artificial individual is obtained from averaging more than 100 observations.

Table 7. Summary Statistics for Pseudo Panel Regressions 1 and 2

Variable	Mean	Std. Dev.	Min	Max
Labor income of the cohort (in logs) θ_t	6.40	0.34	3.54	7.68
Relative labor income of the cohort θ_t	1.67	0.44	0.08	5.59
Labor income of the cohort (in logs) θ_{t-1}	6.28	0.59	3.39	7.68
Relative labor income of the cohort θ_{t-1}	1.67	0.69	0.08	5.59
% entrepreneurs	0.03	0.02	0.00	0.62
Dummy=1 if female	0.38	0.49	0.00	1.00
% entrepreneurs x Dummy=1 if female	0.01	0.01	0.00	0.62
Labor income of the cohort (in logs) θ_{t-1} x % entrepreneurs	0.20	0.17	0.00	4.77
Relative labor income of the cohort θ_{t-1} x % entrepreneurs	0.07	0.07	0.00	3.47
Labor income of the cohort (in logs) θ_{t-1} x % entrepreneurs x Dummy=1 if female	0.04	0.07	0.00	4.77
Relative labor income of the cohort θ_{t-1} x % entrepreneurs x Dummy=1 if female	0.01	0.03	0.00	3.47

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.
 Note: There are 93 observations for all variables.

Results from the regressions based on labor earnings are presented in Table 8 and Table 9. They show a positive impact of entrepreneurship on both absolute and relative mobility. While the overall intra-generational absolute income persistence parameter obtained is 0.51, the parameter for entrepreneurs is much lower, 0.27. Similarly, while the overall intra-generational relative persistence parameter is 0.50, the relative persistence parameter for entrepreneurs is 0.34.

Table 8. Group Income Persistence, Pseudo Panel Regressions 1

Dependent variable: $Y_{(c,t)}$	Labor income per capita (in logs)		Labor income per capita / Median labor income per capita	
	(1)	(2)	(3)	(4)
$Y_{(c,t-1)}$	0.500** [0.032]	0.507** [0.041]	0.537** [0.037]	0.499** [0.064]
% entrepreneurs		45.570** [12.940]		14.140** [3.130]
$Y_{(c,t-1)}$ x % entrepreneurs		-6.672** [1.883]		-4.516** [1.079]
Constant	3.261** [0.204]	3.168** [0.245]	0.767** [0.066]	0.690** [0.077]
Observations	93	93	93	93
Adjusted R-squared	0.722	0.751	0.695	0.748

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.
 Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

These results are sustained when interactions of the share of entrepreneurs in the cohort and a dummy variable indicating whether it is a female cohort are included in estimation. In this case, the absolute persistence parameter for entrepreneurs is even lower, 0.23, and their relative persistence parameter is 0.36.

Table 9. Group Income Persistence, Pseudo Panel Regressions 2

Dependent variable: $Y_{(c,t)}$	Income per capita (in logs)	Income per capita / Median income per capita
	(1)	(2)
$Y_{(c,t-1)}$	0.550** [0.051]	0.661** [0.085]
% entrepreneurs $_{(c,t-1)}$	68.690** [15.570]	20.540** [3.717]
Dummy=1 if female	0.089 [0.466]	0.130 [0.152]
% entrepreneurs $_{(c,t-1)}$ x Dummy=1 if female	-51.330* [24.360]	-19.230** [6.422]
$Y_{(c,t-1)}$ x % entrepreneurs $_{(c,t-1)}$	-10.280** [2.274]	-8.881** [1.577]
$Y_{(c,t-1)}$ x Dummy=1 if female	-0.020 [0.080]	-0.142 [0.128]
$Y_{(c,t-1)}$ x % entrepreneurs $_{(c,t-1)}$ x Dummy=1 if female	7.095+ [3.570]	7.273** [2.076]
Constant	2.972** [0.295]	0.580** [0.103]
Observations	93	93
Adjusted R-squared	0.790	0.800

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.

Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

Table 10 presents the summary statistics for the pseudo panel database constructed using per capita income. Table 11 and Table 12 present the results for these pseudo panel regressions.¹¹ Recall that in this case the sample is restricted to include only working individuals who are their household's main income providers. The overall absolute income persistence parameter in this

¹¹ In this case, estimation is done over 89 cohort observations.

case is lower, 0.34, indicating higher mobility among this group of individuals. Once again, absolute mobility is found to be above average for entrepreneurs (persistence parameter of 0.24). Results about relative mobility, differ from the previous results, however. In this case, entrepreneurs do not appear to have higher relative mobility than other individuals. Also, the inclusion of interactions with the female dummy variable turns most results insignificant (except the overall absolute persistence parameter).

Table 10. Summary Statistics for Pseudo Panel Regressions 3 and 4

Variable	Mean	Std. Dev.	Min	Max
Labor income per capita of the cohort (in logs) θ_0	5.47	0.14	4.03	7.37
Relative labor income per capita of the cohort θ_0	1.01	0.09	0.21	6.07
Labor income per capita of the cohort (in logs) $\theta_{(1)}$	5.42	0.20	3.30	7.37
Relative labor income per capita of the cohort $\theta_{(1)}$	0.98	0.14	0.11	6.07
% entrepreneurs	0.05	0.03	0.00	1.00
Dummy=1 if female	0.21	0.41	0.00	1.00
% entrepreneurs x Dummy=1 if female	0.00	0.01	0.00	1.00
Labor income per capita of the cohort (in logs) $\theta_{(1)}$ x % entrepreneurs	0.30	0.19	0.00	7.37
Relative labor income per capita of the cohort $\theta_{(1)}$ x % entrepreneurs	0.11	0.09	0.00	6.07
Labor income per capita of the cohort (in logs) $\theta_{(1)}$ x % entrepreneurs x Dummy=1 if female	0.03	0.10	0.00	7.37
Relative labor income per capita of the cohort $\theta_{(1)}$ x % entrepreneurs x Dummy=1 if female	0.01	0.06	0.00	6.07

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.

Note: There are 89 observations for all variables.

Table 11. Group Income Persistence, Pseudo Panel Regressions 3

Dependent variable: $Y_{(c,t)}$	Labor income per capita (in logs)		Labor income per capita / Median labor income per capita	
	(1)	(2)	(3)	(4)
$Y_{(c,t-1)}$	0.336** [0.057]	0.361** [0.078]	0.503** [0.059]	0.433** [0.083]
% of entrepreneur		15.570+ [9.006]		5.871* [2.697]
$Y_{(c,t-1)}$ x % of entrepreneur		-2.391+ [1.415]		-1.172 [0.838]
Constant	4.079** [0.348]	3.892** [0.453]	0.983** [0.121]	0.959** [0.136]
Observations	89	89	89	89
Adjusted R-squared	0.275	0.284	0.444	0.463

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.
 Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

Table 12. Group Income Persistence, Pseudo Panel Regressions 4

Dependent variable: $Y_{(c,t)}$	Income per capita (in logs)	Income per capita / Median income per capita
	(1)	(2)
$Y_{(c,t-1)}$	0.345* [0.135]	0.295 [0.184]
% entrepreneurs $_{(c,t)}$	11.630 [14.870]	0.366 [4.529]
Dummy=1 if female	0.237 [1.109]	0.195 [0.369]
% entrepreneurs $_{(c,t)}$ x Dummy=1 if female	3.821 [26.420]	-0.830 [10.390]
$Y_{(c,t-1)}$ x % entrepreneurs $_{(c,t)}$	-1.715 [2.456]	2.120 [2.431]
$Y_{(c,t-1)}$ x Dummy=1 if female	-0.034 [0.191]	-0.006 [0.231]
$Y_{(c,t-1)}$ x % entrepreneurs $_{(c,t)}$ x Dummy=1 if female	-0.736 [3.924]	-2.571 [2.942]
Constant	3.975** [0.764]	1.140** [0.253]
Observations	89	89
Adjusted R-squared	0.253	0.473

Source: Authors' calculations based on Living Standards Surveys of 1997, 2003, 2008, and 2010.
 Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

6. Middle-Class Entrepreneurs Viewed through their Sectors of Choice

As in other Latin American countries, entrepreneurship is not very widespread in Colombia and tends to be more prevalent among the wealthier segments of the population. In 2010, there were 237,000 middle-class entrepreneurs, representing a very small share of middle-class workers (5.3 percent, as shown in Appendix Table 1). As Figure 3 indicates, 20 percent owned manufacturing businesses and only 7 percent owned businesses with more than 10 employees. So what we set out to do in this section is a bit of a stretch. We are, however, obtaining results that fit relatively well our hypothesis that the presence of middle-class entrepreneurs is higher in sectors that are more financially dependent, where activity is less concentrated, and where firms are on average smaller.

To explore to what degree it is true that middle-class entrepreneurs are excluded from participating in productive activities requiring large capital expenditures, we use the dataset of the Annual Manufacturing Survey (EAM, for its acronym in Spanish), a census of all manufacturing firms of 10 or more employees, also collected by DANE. For the purpose of this research, we use an ISIC 4-digit sector-level panel dataset constructed for the period 2003–05 from EAM’s firm-level databases, which allow us to follow sector characteristics and performance over time. It contains information on output, employment, labor costs, capital, and financial expenditures, and can be combined with the official customs records to obtain sector-level data on exports.

Because sectors of activity in the Living Standards Survey are coded only at the ISIC 2-digit sector level, we use DANE’s Households Surveys to produce the number of middle-class entrepreneurs by ISIC 4-digit sector, for 2003 to 2005.¹² We use these data in combination with EAM to estimate a regression of the form:

$$Y_{it} = \alpha + \beta_t + \lambda X + \varepsilon_{it} \quad (4)$$

where Y_{it} is number of middle-class entrepreneurs (in logs) in sector i at time t , B_t is a time dummy, and X is a set of sector-level characteristics.

¹² As before, we use the \$10–\$50 definition of the middle class.

Table 13. Summary Statistics for Regressions Explaining the Presence of Middle-Class Entrepreneurs

Variable	Mean	Std. Dev.	Min	Max
Number of middle class entrepreneurs (in logs)	3.44	3.76	0.00	11.32
Output (in logs)	19.02	2.01	13.37	23.60
% of firms that export	0.47	0.27	0.00	1.00
HHI	0.28	0.23	0.02	1.00
Dummy=1 if ISIC 2-digit sector is financially dependent	0.54	0.50	0.00	1.00
Dummy=1 if sector with low knowledge content	0.07	0.25	0.00	1.00
Dummy=1 if sector with high knowledge content	0.17	0.37	0.00	1.00

Source: Authors' calculations based on DANE's Households Surveys and EAM of 2003, 2004 and 2005.

Note: There are 406 observations for all variables. * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

The results presented in Table 14 suggest a positive relationship between sector size, measured by output, and middle-class entrepreneurship. They also indicate that middle-class entrepreneurship is higher in sectors that are less concentrated (sectors with fewer entry barriers in the form of large-scale economies, resulting in smaller Herfindahl-Hirshman indexes, HHI) and lower in sectors that export more (measured by the share of firms that export). Similar results are obtained when we substitute the HHI concentration measure by the number of establishments (the higher the number of plants, the higher the number of middle-class entrepreneurs) or by the market share of the largest plant (the higher this market share, the lower the number of middle-class entrepreneurs). We also estimated versions of the model including the sector's median firm size by employment. While the coefficient on this variable was negative and significant, its inclusion affected the significance of the variable indicating the extent to which firms in the sector participate as exporters in the international markets. Since there seems to be a strong correlation between firm size and exporting activities, we are not showing the version of the model including both variables.¹³

¹³ These results are not included in Table 14 but are available upon request.

Table 14. Regressions to Explain the Presence of Middle-Class Entrepreneurs

Dependent variable: Number if middle class entrepreneurs (in logs)	(1)	(2)	(3)	(4)	(5)
Output (in logs)	0.445* [0.171]	0.604** [0.181]	0.413* [0.177]	0.411* [0.178]	0.399* [0.185]
% of firms that export		-2.557** [0.954]	-1.711+ [1.008]	-1.711+ [1.009]	-1.853+ [1.041]
HHI			-2.839* [1.395]	-2.837* [1.396]	-3.088* [1.471]
Dummy=1 if ISIC 2-digit sector is financially dependent				-0.882** [0.159]	-0.885** [0.160]
Dummy=1 if sector with low knowledge content					1.898** [0.330]
Dummy=1 if sector with high knowledge content					0.927 [1.016]
Constant	-5.262 [3.256]	-7.129* [3.269]	-3.100 [3.324]	-2.587 [3.399]	-2.494 [3.532]
Number of observations					
Adjusted R-squared					
Number of sectors	406	406	406	406	406
Year dummies	0.044	0.073	0.094	0.094	0.099
3 digit ISIC sector fixed effect	74	74	74	74	74

Source: Authors' calculations based on DANE's Households Surveys and EAM of 2003, 2004, and 2005.

Note: * Coefficient is statistically significant at the 10 percent level; ** at the 5 percent level; *** at the 1 percent level; no asterisk means the coefficient is not different from zero with statistical significance.

To capture the extent to which middle-class entrepreneurship is associated with sectors that are dependent on external finance, we used the Rajan-Zingales measure of financial dependence for ISIC 2-digit sectors.¹⁴ We defined financially dependent sectors as those whose Rajan-Zingales measure is above the median. The coefficient on this variable is negative and significant, indicating that middle-class entrepreneurs tend to be more concentrated in sectors requiring less external financing (perhaps because middle-class entrepreneurs have lower access to credit, on average). Finally, we used DANE's sector categories of knowledge content¹⁵ to

¹⁴ We are grateful to Luis Catão for sharing his recently updated version of Rajan-Zingales measures, computed as in Rajan and Zingales (1998).

¹⁵ DANE assigns ISIC 3-digit sectors to three categories according to their knowledge content. Sectors considered to be high in knowledge content are Industrial chemicals; Petroleum refineries; Electrical machinery apparatus,

explore the relationship between middle-class entrepreneurship and sector technological complexity. We use this classification to construct a dummy variable that equals 1 if the sector belongs in the higher knowledge content category and equals 0 otherwise, and another dummy variable that equals 1 if the sector belongs in the lower knowledge content category and equals 0 otherwise. The coefficient on the former is insignificant. The coefficient on the latter is positive and significant, however, indicating that middle-class entrepreneurs are more prevalent in sectors with lower technological complexity.

We were not able to capture a significant relationship between middle-class entrepreneurship and Total Factor Productivity. Our results above are robust to the inclusion of this variable in estimation.

7. Conclusions and Policy Recommendations

We explored middle-class entrepreneurship from several perspectives. We found that entrepreneurship is scarce among Colombian workers and is more frequent in the upper class. Middle-class entrepreneurs are better off than middle-class employees of similar characteristics, on average. They are very different from upper class entrepreneurs, however, in terms of their educational attainment and the size of the businesses they run. They are also very different from self-employed workers, who are on average less educated, younger, and more disadvantaged in terms of their outcomes.

While middle-class entrepreneurs succeed at making a living from their businesses, we are not able to provide empirical evidence supporting the hypothesis that their entrepreneurial activity is an engine for economic growth. On the contrary, our findings are suggestive that the types of businesses they run are low-productivity businesses. For instance, 62 percent of middle-class entrepreneurs' businesses are very small (1 to 3 workers), and the number of middle-class entrepreneurs is lower in more export-intensive sectors. Also, the fact that middle-class entrepreneurs participate more in sectors that are less concentrated and less dependent on external financing suggests that they face problems of access to financing, preventing them from assuming large capital expenditures. We are unable to establish a causal relationship using the available data; that is, we cannot say whether middle-class entrepreneurs are drawn toward

appliances and supplies; and Transport equipment. Sectors in the middle category are Food manufacturing, Beverages, Tobacco, Paper and paper products; and Plastic products. Sectors in the lower category are Metal Ore Mining; Wood and wood and cork products, except furniture; and Furniture and fixtures, except primarily of metal.

sectors of activity with particular characteristics, or rather if those characteristics are a result of these sectors being run by middle-class entrepreneurs. Our data do present a set of correlations, however, that cannot be ignored.

We find that entrepreneurship is associated with higher intergenerational income mobility (that is, persistence parameters are lower). Entrepreneurs' outcomes are less positively correlated over time than those of the average worker. We are not able to separate middle-class entrepreneurs from other entrepreneurs in this exercise, however, and we suspect this result is most likely driven by the income dynamics of upper-class entrepreneurs. Also, because we do not observe individuals before they became entrepreneurs, we are unable to establish whether the higher mobility we observe can be specifically attributed to entrepreneurship itself, or whether mobility is even higher, with individuals climbing up in the social ladder as a result of entrepreneurship.

Our findings suggest that designing policies to promote middle-class entrepreneurship would be misguided. Instead, policy efforts should be directed toward facilitating social mobility more generally. More educated individuals will lead more productive businesses and have a higher impact on economic growth. So efforts should be directed toward ensuring that (lower- and) middle-class individuals are able to achieve higher education levels. A policy reform resulting in higher education coverage and quality will be an engine for entrepreneurship in the medium and long run.

With regard to middle-class individuals who already are entrepreneurs, government interventions should focus on helping them overcome the more salient market failures facing them. The most pressing is perhaps poor access to financing due to information asymmetries, which prevent the banking sector from appropriately assessing their riskiness. Micro entrepreneurs are often denied access to credit through formal channels and end up paying much higher costs for credit. Middle-class entrepreneurs, who are unlikely to have collateral to offer as a debt guarantee, probably fall in this group. Microcredit programs have received poor evaluations in terms of their impact on entrepreneurship (or at least their evaluation is mixed), so they are not necessarily the answer. Alternative mechanisms should be explored to lift the liquidity constraints that apparently are limiting the growth opportunities of small businesses that have good potential but present high risks in their early stages.

The fact that middle-class entrepreneurship is concentrated in very small businesses suggests there may also be coordination problems preventing their growth. Government intervention in this case could take the form of building public-private partnerships with larger businesses in particular sectors of activity, to help organize the market for the smaller firms. An example would be promoting clusters of input producers.

Middle-class entrepreneurs would probably also benefit from good training in skills specific to their business activities. This policy recommendation implies a thorough revision of the current training policy to reach individuals running small businesses with good potential for growth. Here we also see a role for alliances with larger firms intermediated by the government, where middle-class entrepreneurs and their employees could receive practical training.

In closing, we want to insist that there is nothing in particular about middle-class entrepreneurs observed in this paper that suggests that policies to promote entrepreneurship in this segment of the population should be a priority. As stated, policies more generally aimed at increasing social mobility seem more promising in terms of their potential for promoting higher productivity and welfare.

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Appendix Table 1. Working Population by Type and Class Group

Worker type	Class group	Number	Percentage of total workers	Percentage over worker type	Percentage of class group
Total workers	Lower class	9,759,451		66.5	100.0
	Middle class	4,466,028		30.4	100.0
	Upper class	460,203		3.1	100.0
	Total workers	14,685,682	100.0		
Entrepreneurs	Lower class	175,694		34.4	1.8
	Middle class	236,857		46.3	5.3
	Upper class	98,575		19.3	21.4
	Total entrepreneurs	511,126	3.5		
Employees	Lower class	4,750,020		62.0	48.7
	Middle class	2,648,532		34.6	59.3
	Upper class	261,238		3.4	56.8
	Total employees	7,659,790	52.2		
Self-employed workers	Lower class	4,833,737		74.2	49.5
	Middle class	1,580,639		24.3	35.4
	Upper class	100,390		1.5	21.8
	Total self-employed workers	6,514,766	44.4		

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

**Appendix Table 2. Entrepreneurs versus Employed Workers, Individuals' Characteristics
Middle Class Definition: Polarization Index**

Individual characteristics	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day
Number of individuals	85,011	188,825	237,290	2,747,075	3,370,930	1,541,786
Female (percent)	24.8%	29.6%	28.4%	39.6%	45.8%	49.9%
Mean work income	584.63 \$	1,073.00 \$	2,539.59 \$	398.41 \$	665.18 \$	1,667.63 \$
Median work income	443.16 \$	738.60 \$	1,846.50 \$	384.07 \$	505.20 \$	1,149.75 \$
Min work income	29.54 \$	51.70 \$	147.72 \$	3.08 \$	3.69 \$	0.30 \$
Max income	2,658.96 \$	20,680.77 \$	16,987.78 \$	9,635.64 \$	9,527.93 \$	18,464.97 \$
Mean age	44	43	48	35	36	38
Median age	43	42	48	33	34	37
Min age	22	21	23	15	15	17
Max age	85	80	82	76	76	86
Maximum level of education attained: (percent)						
None	5.1%	2.1%	0.3%	4.1%	0.4%	0.2%
Primary	39.7%	17.4%	6.9%	27.2%	11.6%	4.5%
Secondary	44.8%	57.4%	25.6%	50.0%	46.2%	19.7%
Technical education	9.8%	11.4%	25.5%	8.0%	17.0%	16.3%
College or higher	0.6%	7.5%	37.9%	2.7%	12.3%	43.4%
No answer	0.0%	4.2%	3.8%	8.1%	12.5%	15.9%
Percentage of Informality by health coverage	65.8%	39.0%	9.5%	48.7%	20.4%	4.2%
Parent's education (highest of mother or father): (percent)						
Doesn't know	18.0%	12.7%	10.3%	27.5%	18.7%	11.3%
None	51.5%	43.1%	32.2%	40.3%	29.6%	24.2%
Primary	21.6%	35.4%	32.9%	24.6%	35.1%	30.8%
Secondary	8.8%	6.2%	18.3%	6.5%	13.3%	22.7%
Technical education, College or higher	0.0%	2.5%	6.3%	1.2%	3.2%	10.9%
Place of birth						
Urban (percent)	74.0%	75.0%	80.6%	68.3%	80.5%	87.5%
By municipality size: (percent)						
< 50,000 inhabitants	65.9%	53.3%	45.8%	52.9%	39.6%	31.6%
50,000-100,000 inhabitants	7.3%	15.2%	4.0%	9.5%	7.3%	9.7%
100,000-500,000 inhabitants	21.1%	17.5%	16.0%	19.6%	18.4%	18.4%
> 500,000 inhabitants	5.8%	14.1%	34.2%	17.9%	34.7%	40.3%

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

**Appendix Table 3. Entrepreneurs versus Employed Workers, Average Labor Incomes
Middle Class Definition: Polarization Index**

	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day
All individuals	\$585	\$1,073	\$2,539	\$398	\$665	\$1,667
Individual is/has:						
Female	\$439	\$618	\$2,350	\$344	\$615	\$1,457
Illiterate	\$706	\$804	\$192	\$248	\$380	\$407
No education	\$706	\$2,539	\$192	\$253	\$407	\$408
Completed elementary	\$500	\$891	\$2,017	\$316	\$430	\$425
Completed secondary education	\$496	\$932	\$1,955	\$357	\$464	\$612
Completed technical education	\$643	\$852	\$2,673	\$431	\$594	\$901
Completed college education or higher	\$934	\$1,483	\$1,779	\$560	\$740	\$1,187
No answer	-	\$1,691	\$1,794	\$325	\$614	\$1,259
Younger than 25	\$240	\$826	\$1,418	\$303	\$443	\$919
25-45	\$630	\$1,213	\$2,306	\$426	\$677	\$1,564
45-55	\$595	\$817	\$2,162	\$448	\$762	\$2,084
Older than 55	\$479	\$1,049	\$3,109	\$365	\$836	\$2,199
In agriculture or mining	\$305	\$786	\$2,903	\$314	\$671	\$2,814
In manufacturing	\$901	\$1,040	\$1,953	\$430	\$557	\$1,622
In retail	\$580	\$1,001	\$2,306	\$355	\$496	\$1,146
In services	\$679	\$1,431	\$3,376	\$510	\$781	\$1,784
In business of 1-3 workers	\$521	\$899	\$1,689	\$241	\$369	\$498
In business of 4-10 workers	\$840	\$1,554	\$2,680	\$361	\$471	\$1,049
In business of 11-50 workers	-	\$732	\$3,628	\$451	\$643	\$1,383
In business of more than 51 workers	-	-	\$2,877	\$553	\$838	\$1,974

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

**Appendix Table 4. Entrepreneurs versus Employed Workers, Business Characteristics
Middle Class Definition: Polarization Index**

Business characteristics	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day
Number of businesses	85,011	188,825	237,290	2,747,075	3,370,930	1,541,786
Business size: (percent)						
1-3 workers	80.0%	71.0%	37.4%	28.9%	15.1%	6.3%
4-10 workers	20.0%	27.0%	36.2%	23.4%	17.0%	9.6%
11-50 workers	0.0%	1.9%	23.7%	19.1%	20.4%	21.1%
More than 51 workers	0.0%	0.0%	2.8%	28.6%	47.5%	63.0%
Sector of activity: (percent)						
Agriculture or mining	12.6%	5.2%	4.4%	12.5%	3.0%	2.7%
Manufacturing	8.5%	20.2%	25.1%	16.0%	16.6%	11.0%
Electricity, gas and water	0.0%	0.0%	0.9%	0.6%	1.3%	1.8%
Construction	15.0%	2.5%	3.9%	5.4%	2.6%	2.1%
Wholesale and retail trade, hotels and restaurants	51.4%	53.5%	41.9%	24.3%	23.2%	14.2%
Transport, storage and communication	5.9%	6.3%	4.8%	7.5%	8.3%	6.6%
Finance, insurance, real estate and business services	2.3%	3.8%	9.5%	4.0%	7.4%	12.5%
Community, social and personal services	1.4%	4.8%	6.8%	18.9%	29.6%	40.4%
Other	0.0%	0.0%	0.0%	8.0%	3.2%	1.0%
Unknown	3.1%	3.7%	2.8%	2.9%	4.8%	7.7%
Business location: (percent)						
Bogota	4.6%	13.1%	40.7%	12.3%	31.8%	38.6%
Antioquia	3.8%	3.9%	7.0%	16.1%	13.5%	15.0%
Valle del Cauca	13.5%	9.6%	10.3%	13.7%	9.7%	9.1%
Atlántica	26.6%	14.9%	14.4%	21.0%	13.2%	10.2%
Oriental	23.5%	30.5%	9.8%	17.1%	16.3%	15.0%
Central	10.4%	18.1%	11.7%	11.6%	11.1%	7.8%
Pacífica	14.0%	6.3%	4.4%	5.9%	3.0%	2.4%
Orinoquia and Amazonia	3.5%	3.5%	1.5%	2.2%	1.3%	1.6%
San Andrés	0.0%	0.1%	0.2%	0.1%	0.2%	0.2%

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

**Appendix Table 5. Entrepreneurs versus Employed Workers, Household Characteristics
Middle Class Definition: Polarization Index**

Household Characteristics	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day	<\$5.83 a day	\$5.83-\$18.53 a day	>\$16.32 a day
Number of households	59,824	142,991	157,171	1,407,831	1,811,714	956,561
Mean per capita expenditure	118.43 \$	323.92 \$	1,518.00 \$	108.78 \$	292.67 \$	1,136.11 \$
Median per capita expenditure	128.89 \$	320.27 \$	1,120.33 \$	112.14 \$	275.12 \$	813.51 \$
Min per capita expenditure	1.38 \$	175.98 \$	494.16 \$	4.94 \$	175.03 \$	490.35 \$
Max per capita expenditure	174.39 \$	487.33 \$	7,306.50 \$	174.92 \$	489.72 \$	8,756.07 \$
Mean household size	4.7	3.6	2.6	4.5	3.4	2.5
Median household size	5.0	4.0	2.0	4.0	3.0	2.0
Min household size	1.0	1.0	1.0	1.0	1.0	1.0
Max household size	11.0	7.0	7.0	12.0	10.0	7.0
Elders in family group (percent)	15.8%	14.0%	19.9%	14.9%	9.8%	8.8%
Children in family group (percent)	75.2%	64.7%	32.4%	78.7%	57.5%	35.8%
Children in family attending school (percent)	61.5%	53.3%	25.8%	59.0%	43.5%	26.7%
Ownership of (percent)						
Car	13.1%	35.0%	73.7%	2.3%	8.4%	41.6%
Color TV	96.3%	99.9%	98.1%	93.3%	97.1%	98.4%
Computer	19.2%	49.6%	76.8%	16.9%	44.7%	72.7%
Internet Connection	14.7%	28.6%	67.7%	8.2%	31.8%	60.7%
Type of housing tenancy (percent)						
that own	58.9%	49.2%	60.9%	43.8%	37.6%	44.7%
that rent	29.2%	46.5%	37.8%	34.9%	52.5%	47.8%
other	11.9%	4.3%	1.3%	21.3%	10.0%	7.4%

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

Appendix Table 6. Entrepreneurs versus Employed Workers, Individuals' Characteristics
Middle Class Definition: 50% to 150% of the Median

Individual characteristics	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<50% of median expenditure	50%-150% of median expenditure	>150% of median expenditure	<50% of median expenditure	50%-150% of median expenditure	>150% of median expenditure
	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day
Number of individuals	22,715	142,359	346,053	999,444	3,468,398	3,191,949
Female (percent)	26.8%	24.2%	30.1%	37.2%	41.7%	49.6%
Mean work income	458.37 \$	687.70 \$	2,157.53 \$	324.14 \$	509.03 \$	1,196.26 \$
Median work income	398.84 \$	590.88 \$	1,477.20 \$	295.44 \$	443.16 \$	774.79 \$
Min work income	29.54 \$	36.93 \$	73.86 \$	3.69 \$	3.08 \$	0.30 \$
Max income	1,477.20 \$	7,385.99 \$	20,680.77 \$	3,840.72 \$	9,635.64 \$	18,464.97 \$
Mean age	49.1	43.3	46.6	34.2	35.3	37.2
Median age	50.0	42.0	46.0	33.0	34.0	36.0
Min age	22.0	23.0	21.0	15.0	15.0	15.0
Max age	79.0	85.0	82.0	76.0	76.0	86.0
Maximum level of education attained: (percent)						
None	19.0%	2.6%	0.3%	8.3%	1.1%	0.2%
Primary	39.4%	33.4%	7.6%	33.8%	18.9%	6.7%
Secondary	38.8%	52.9%	35.5%	45.5%	52.0%	30.6%
Technical education	1.1%	9.7%	22.1%	3.9%	12.6%	17.8%
College or higher	1.8%	1.0%	29.7%	2.2%	5.1%	30.1%
No answer	0.0%	0.4%	4.7%	6.3%	10.4%	14.7%
Percentage of Informal by social security	83.6%	57.2%	14.9%	65.6%	32.1%	10.1%
Parent's education (highest of mother or father): (percent)						
Doesn't know	14.4%	16.9%	10.5%	29.8%	23.5%	14.0%
None	54.3%	48.6%	34.7%	46.3%	34.2%	26.0%
Primary	29.5%	27.2%	34.1%	17.4%	31.2%	33.8%
Secondary	1.7%	5.6%	15.7%	6.0%	9.0%	19.0%
Technical education, College or higher	0.0%	1.7%	5.0%	0.5%	2.1%	7.2%
Place of birth (percent)						
Urban	74.9%	72.5%	79.6%	62.6%	75.4%	84.6%
By municipality size: (percent)						
< 50,000 inhabitants	65.6%	59.0%	48.1%	62.5%	43.8%	35.5%
50,000-100,000 inhabitants	8.8%	11.3%	7.6%	11.4%	7.9%	8.4%
100,000-500,000 inhabitants	25.7%	18.9%	16.3%	13.9%	21.5%	17.5%
> 500,000 inhabitants	0.0%	10.9%	28.1%	12.3%	26.8%	38.5%

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

**Appendix Table 7. Entrepreneurs versus Employed Workers, Average Labor Income
Middle Class Definition: 50% to 150% of the Median**

	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<50% of median expenditure	50%-150% of median expenditure	>150% of median expenditure	<50% of median expenditure	50%-150% of median expenditure	>150% of median expenditure
	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day
All individuals	\$458	\$688	\$2,157	\$324	\$509	\$1,196
Individual is/has:						
Female	\$290	\$452	\$1,780	\$249	\$453	\$1,070
Illiterate	\$706	\$739	\$512	\$253	\$289	\$338
No education	\$706	\$2,604	\$512	\$257	\$284	\$429
Completed elementary	\$398	\$604	\$1,850	\$275	\$371	\$472
Completed secondary education	\$426	\$522	\$1,756	\$296	\$416	\$532
Completed technical education	\$373	\$840	\$1,804	\$377	\$501	\$735
Completed college education or higher	\$369	\$774	\$1,792	\$471	\$650	\$960
No answer	-	\$295	\$1,797	\$204	\$466	\$984
Younger than 25	\$111	\$422	\$1,184	\$255	\$368	\$641
25-45	\$354	\$639	\$2,082	\$350	\$534	\$1,157
45-55	\$400	\$673	\$1,750	\$364	\$562	\$1,479
Older than 55	\$624	\$874	\$2,671	\$313	\$504	\$1,701
In agriculture or mining	\$285	\$448	\$2,276	\$286	\$417	\$1,889
In manufacturing	\$517	\$890	\$1,770	\$367	\$484	\$1,043
In retail	\$530	\$570	\$1,928	\$300	\$417	\$773
In services	\$440	\$744	\$2,849	\$437	\$618	\$1,348
In business of 1-3 workers	\$470	\$568	\$1,416	\$202	\$310	\$419
In business of 4-10 workers	\$285	\$998	\$2,515	\$310	\$420	\$697
In business of 11-50 workers	-	\$534	\$3,523	\$414	\$516	\$1,057
In business of more than 51 workers	-	-	\$2,877	\$492	\$662	\$1,481

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

Appendix Table 8. Entrepreneurs versus Employed Workers, Business Characteristics
Middle Class Definition: 50% to 150% of the Median

Business characteristics	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<50% of median expenditure	50% -150% of median expenditure	>150% of median expenditure	<50% of median expenditure	50% -150% of median expenditure	>150% of median expenditure
	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day
Number of businesses	22,715	142,359	346,053	999,444	3,468,398	3,191,949
Business size: (percent)						
1-3 workers	93.6%	71.1%	48.7%	36.4%	21.4%	9.2%
4-10 workers	6.4%	27.9%	32.6%	26.2%	20.0%	12.7%
11-50 workers	0.0%	1.0%	16.9%	19.2%	19.9%	20.5%
More than 51 workers	0.0%	0.0%	1.9%	18.3%	38.6%	57.5%
Sector of activity: (percent)						
Agriculture or mining	15.9%	8.4%	4.4%	21.4%	5.5%	2.5%
Manufacturing	2.1%	18.0%	22.7%	11.0%	18.9%	12.6%
Electricity, gas and water	0.0%	0.0%	0.6%	0.5%	0.9%	1.7%
Construction	22.3%	7.8%	3.0%	7.2%	3.6%	2.3%
Wholesale and retail trade, hotels and restaurants	43.5%	52.3%	46.2%	21.8%	25.1%	18.1%
Transport, storage and communication	11.8%	4.3%	5.6%	6.6%	8.5%	7.2%
Finance, insurance, real estate and business services	0.0%	1.4%	8.6%	2.5%	5.3%	10.8%
Community, social and personal services	1.1%	2.0%	6.7%	14.4%	24.0%	36.4%
Other	0.0%	0.0%	0.0%	11.5%	5.1%	1.6%
Unknown	3.2%	5.8%	2.1%	3.1%	3.3%	6.8%
Business location: (percent)						
Bogotá	0.0%	10.8%	31.8%	6.2%	23.1%	35.9%
Antioquia	2.9%	2.9%	6.5%	16.3%	15.4%	13.5%
Valle del Cauca	11.2%	9.4%	11.0%	12.7%	12.2%	9.1%
Atlántica	30.6%	16.6%	15.6%	25.7%	15.5%	11.9%
Oriental	16.9%	28.3%	16.4%	17.6%	16.1%	16.1%
Central	11.5%	19.6%	11.6%	10.6%	12.2%	8.9%
Pacífica	19.3%	9.4%	4.8%	7.8%	3.9%	2.7%
Orinoquia and Amazonia	7.5%	3.0%	2.1%	2.9%	1.5%	1.6%
San Andrés	0.0%	0.0%	0.2%	0.0%	0.1%	0.2%

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.

**Appendix Table 9. Entrepreneurs versus Employed Workers, Household Characteristics
Middle Class Definition: 50% to 150% of the Median**

Household Characteristics	Lower class entrepreneurs	Middle class entrepreneurs	Upper class entrepreneurs	Lower class employees	Middle class employees	Upper class employees
	<50% of median expenditure	50% -150% of median expenditure	>150% of median expenditure	<50% of median expenditure	50% -150% of median expenditure	>150% of median expenditure
	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day	<\$ 3.08 a day	\$3.08-\$9.24 a day	>\$9.24 a day
Number of households	16,355	103,841	239,790	486,000	1,847,052	1,843,054
Mean per capita expenditure	62.49 \$	188.62 \$	1,131.74 \$	61.45 \$	178.89 \$	764.96 \$
Median per capita expenditure	65.57 \$	184.10 \$	669.01 \$	62.63 \$	175.03 \$	509.82 \$
Min per capita expenditure	1.38 \$	92.48 \$	278.74 \$	4.94 \$	92.40 \$	277.56 \$
Max per capita expenditure	91.51 \$	276.08 \$	7,306.50 \$	92.20 \$	277.10 \$	8,756.07 \$
Mean household size	5.6	4.1	2.8	5.0	3.9	2.8
Median household size	6.0	4.0	3.0	5.0	4.0	3.0
Min household size	1.0	1.0	1.0	1.0	1.0	1.0
Max household size	11.0	8.0	7.0	12.0	11.0	9.0
Elders in family group (percent)	24.5%	12.3%	18.3%	16.6%	12.3%	8.9%
Children in family group (percent)	82.5%	72.2%	41.7%	86.0%	69.6%	42.8%
Children in family attending school (percent)	65.2%	64.2%	31.8%	66.7%	51.7%	32.3%
Ownership of (percent)						
Car	17.5%	15.2%	64.6%	0.8%	4.5%	26.9%
Color TV	92.6%	99.1%	98.7%	88.9%	96.5%	97.7%
Computer	2.4%	33.0%	70.3%	7.6%	30.9%	61.6%
Internet Connection	0.0%	19.3%	56.7%	1.9%	18.8%	49.7%
Type of housing tenancy (percent)						
that own	71.3%	47.3%	58.6%	42.7%	40.2%	42.0%
that rent	16.5%	43.0%	40.1%	24.3%	46.2%	50.3%
other	12.2%	9.7%	1.3%	33.0%	13.5%	7.7%

Source: Authors' calculations based on Living Standards Survey 2010.

Note: Computed over population 15 years old or older reporting work income.