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Social mobility of individuals in the urban commune of Vatomandry, Atsinanana-Madagascar region

RANDRIANANTENAINA Narcisse[1], ARTHUR Florent[2], KASY Emile[3], RAVELONARIVO Haja Nantenaina Herizo[4]

[1] PhD in Economics – Faculty of Law, Economics and Management, University of Toamasina Madagascar
[2] PhD in Economics, Thematic Doctoral School "Sciences, Culture, Societies and Development", University of Toamasina Madagascar
[3] Professor of Economics, Thematic Doctoral School "Sciences, Culture, Societies and Development", University of Toamasina Madagascar,
[4] Master in Urban Planning Architecture and Civil Engineering, GIS-Cartography Consultant,

Abstract: The main aim of this study is to analyze the extent to which individuals' career paths are influenced by those of their parents. The study also examines the social and economic factors underlying this transmission. The study was carried out in the urban commune of Vatomandry, located in the Atsinanana region of Madagascar. Data were collected from 279 active individuals, using a questionnaire. The questionnaire focused on the respondents' socio-professional trajectories, compared with those of their parents. Variables of interest included occupation and level of education. The results show a strong intergenerational transmission of educational capital. This relationship was confirmed by Spearman's correlation test, which revealed a monotonic correlation between the educational level of children and that of their parents. Furthermore, the Chi-2 test showed that, at the 5% threshold, there was a statistically significant relationship between the occupation of the respondents and that of their parents. These results suggest intergenerational occupational reproduction, where the socio-professional trajectories of individuals are influenced by those of their parents. The study shows that the transmission of educational capital is a key factor in the reproduction of social and occupational inequalities from one generation to the next. The relationship between parents' and children's levels of education, as well as the similarity of occupations between generations, highlights the influence of socio-economic factors. These elements underline their importance in social and professional mobility.

Keywords: educational capital, social mobility, Vatomandry, intergenerational reproduction.

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1 Introduction

From an economic point of view, social mobility "refers to the ability of individuals to modify their economic situation, independently of their parents' income or origin" (Galiani, 2008). It is a crucial topic for sociologists and economists because of its implications for social equity, economic performance and the formulation of public policy.

Social equity is often analyzed by Bourdieu & Passeron (1970), who highlighted the mechanisms of social reproduction through the education system. Economic performance is also affected. Solow (1956) and Barro

(1991) have shown that inequality can slow economic growth by restricting talented people's access to opportunities. In Latin America, regions with greater intergenerational mobility show a positive correlation with economic growth and reduced inequality (Neidhöfer & al., 2023).

Social mobility is based on the analysis of the transition of individuals between different social strata, determined by a multitude of factors: education (Boudon, 1973; Duru-Bellat, 2002), economic conditions (Becker &Tomes, 1979) and societal structures (Esping-Andersen, 1990). Economists believe that social mobility is important for improving economies. The concept is often linked to the idea of equality of opportunity.

This literature highlights concepts and mechanisms that resonate with Madagascar's society and economy. In a comparative study with four African countries, Madagascar shows particularly high occupational reproduction (Bossuroy & Cogneau, 2013). On the big island, this social mobility manifests itself in parents' growing recognition of the importance of formal education, enabling children to progress. Despite challenges such as poverty and the quality of education, families strive to support their children's education, reflecting a shift towards valuing academic achievement (Lendzion, 2017).

In this study, we seek answers to the following question. How is the occupation of individuals related to that of their parents, and does this relationship reflect intergenerational occupational reproduction?
The main hypothesis of this study is as follows. There is a significant relationship between the occupation of individuals and that of their parents, suggesting intergenerational occupational reproduction.
The main objective of this article is to analyze the relationship between the occupation of individuals and that of their parents. The aim is to determine whether this relationship is manifest and whether it reflects a phenomenon of intergenerational professional reproduction. The study seeks to understand the extent to which individuals' career paths are influenced by those of their parents, by exploring the social and economic factors underlying this transmission.

To achieve this objective and answer the initial question, this study focuses on the urban commune of Vatomandry. This commune is located in the district of the Atsinanana region, Madagascar. A survey of 297 individuals engaged in at least one economic activity was conducted during October 2024. A questionnaire was administered via smartphone. The main information collected concerned the educational and professional trajectories of the individuals. These trajectories were compared with those of their parents.
This paper is divided into several sections. It begins with a concise literature review. Materials and methods are then presented. The results obtained are presented in the following section. These results are discussed in depth. Finally, the paper concludes with a general synthesis.

2 Social mobility literature review

The relationship between individuals' occupations and those of their parents illustrates a significant pattern of intergenerational occupational reproduction. This phenomenon is influenced by a variety of factors, including cultural transmission, occupational sorting and regulatory environments. Research indicates a strong correlation between parents' and children's occupations, particularly in self-employment contexts, where working in the same profession as parents significantly increases the likelihood of children becoming self-employed (Gimenez-Nadal & al., 2022). Cultural capital plays a crucial role, as parents transmit values and preferences regarding career choices, shaping children's career paths (Sanduleasa, 2015).

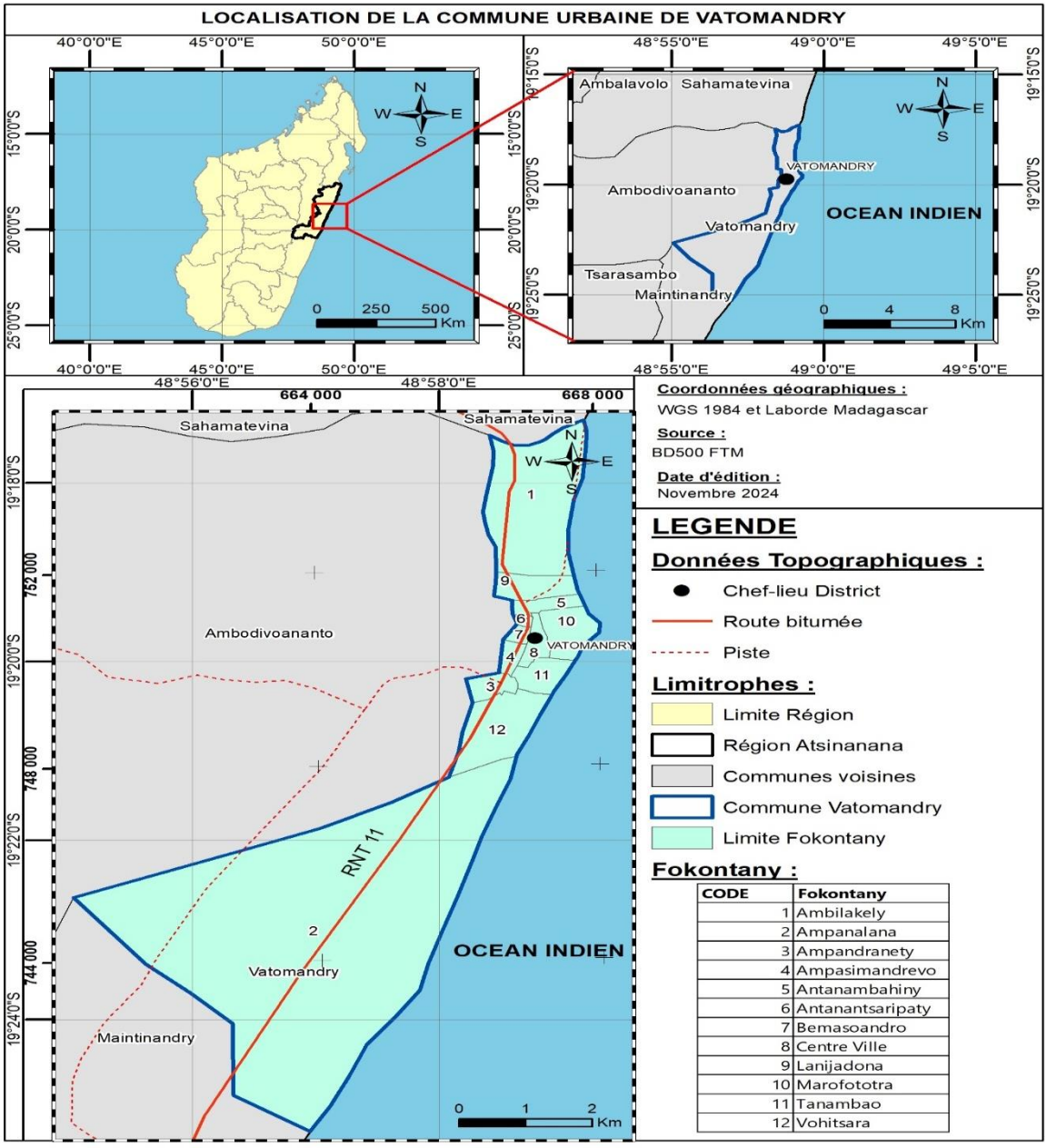
Changes in regulatory frameworks can alter children's propensity to follow in their parents' professional footsteps. For example, liberalization in Italy has led to a decrease in the likelihood of children entering the same professions as their parents, particularly in high-demand sectors (Mocetti et al., 2020).
Parental education has a significant impact on children's professional success, with mothers' education being particularly influential. This suggests that educational attainment is a key factor in the intergenerational transmission of occupational status (Lampard, 2007).

3 Materials and methods

3.1 Study area and population

This study was carried out in October 2024 in the Commune Urbaine de Vatomandry, located in the Atsinanana region of eastern Madagascar, along the coast. Vatomandry lies some 210 kilometers east of the capital, Antananarivo, and is bordered by the Indian Ocean.

The commune is the administrative center of the Vatomandry district, which is part of the province of Toamasina (currently the Atsinanana region). It is accessible via the RN2 national road, which links Antananarivo to Madagascar's east coast (Figure 1).



CODE	Fokontany
1	Ambilakely
2	Ampanalana
3	Ampandranety
4	Ampasimandrevo
5	Antanambahiny
6	Antanantsaripaty
7	Bemasoandro
8	Centre Ville
9	Lanijadona
10	Marofototra
11	Tanambao
12	Vohitsara

Figure 1. Map showing the location of the urban commune of Vatomandry

A total of 279 individuals were surveyed. The inclusion criteria for this study were as follows: to be over 18 years of age and to have exercised an economic activity, either as an employee or self-employed, in the town of Vatomandry. Participants were selected to ensure a diverse representation of professions in this urban area.

Data were collected through direct interviews and questionnaires administered to participants. Questions focused on the level of occupation of the individuals surveyed, as well as that of their parents. Responses were coded as categorical variables, representing different levels of occupation, and provided a detailed profile of the participants and their families in terms of their career paths

3.2 Variables used

The different variables of interest in this study are presented in Table 1 below. Ordinal categorical variables have been coded to facilitate statistical processing using SPSS software.

Table 1. Different variables used

Variable	Type/Nature	Description	Modality
Education level	Qualitative ordinal	Refers to the highest level of education of an individual or one of their parents.	0: No diploma (No education) 1: Primary education 2: Secondary education 3 : Higher education
Profession	Qualitative nominal	Designates the profession of an individual or one of their relatives	- Farmer/Breeder - Worker/Employee -Intermediate profession (technician, teacher, etc.) - Executive/professional - Other
Professional status	Qualitative nominal	Expresses the professional status of an individual or one of their relatives	- Employee - Self-employed
Equal opportunity	Qualitative ordinal	Measures the individual's perception of whether there is an equal chance of success, regardless of social status, gender or ethnicity.	- Strongly disagree - Strongly agree

3.3 Statistical methods

The data collected was analyzed using descriptive statistical methods. This provided an overview of the socio-demographic and professional characteristics of the individuals surveyed.

Two main statistical tests were used to analyze relationships between variables.

The first non-parametric Spearman test was used to assess the strength and direction of the monotonic relationship between individuals' occupational level and that of their parents. This test is adapted for ordinal variables, allowing us to identify a general trend in the relationship between these two variables. This test determines whether there is a significant monotonic dependency between children's level of education and that of their parents. The purpose of this analysis is to assess whether children's level of education is significantly dependent on that of their parents.

The hypotheses of this Spearman test are as follows:

- H_0: There is no significant monotonic relationship between the two variables studied.
- H_1: There is a significant monotonic relationship between the two variables studied.

The second test is the Chi-square test (Chi-2). It was used to test independence between individuals' occupations and those of their parents. This test determines whether there is a statistically significant dependency between the two categorical variables. It compares observed and expected frequencies in a contingency table.

For the Chi-2 test, assumptions are made as follows.

- H_0: There is no statistically significant relationship between the two categorical variables studied.
- H_1: There is a statistically significant relationship between the two categorical variables studied.

For both tests, the decision threshold (α) is set at 0.05. If the p-value is less than or equal to the α significance level (usually 0.05), H_0 is rejected and we conclude that there is a significant monotonic relationship between the two variables.

Analyses were performed using SPSS statistical software, with a significance level set at 0.05. The results made it possible to explore the possibility of intergenerational occupational reproduction in the population of the Commune Urbaine de Vatomandry.

4 Results

4.1 Transmission of educational capital

Table 2 below shows the distribution of individuals' education levels according to their parents' education.

Table 2. Table of respondents' educational mobility

Respondent's level of education	One parent's level of education				Total
	ND	PS	SS	HE	
No diploma [ND]	16,67%	0,00%	0,72%	0,00%	2,54%
Primary school [PS]	27,78%	21,43%	5,04%	0,00%	12,68%
Secondary school [SS]	44,44%	48,81%	41,01%	23,53%	42,75%
Higher education [HE]	11,11%	29,76%	53,24%	76,47%	42,03%
Total	100,00%	100,00%	100,00%	100,00%	100,00%

Source: Our own surveys, 2024

Children whose parents have no qualifications (ND) are mostly represented in the “Primary school” (27.78%) and “Secondary school” (44.44%) categories. A minority have higher education (11.11%). Among parents who have completed elementary school (SS), a significant proportion are in the “Secondary School” category (48.81%). A not insignificant proportion also reached higher education (29.76%). Children of parents with secondary education (ES) show a strong progression towards higher education (53.24%). This indicates a positive effect of the parents' level of education on the children's educational ascent.

Parents with higher education (HE) pass on significant educational capital to their children, with 76.47% of them also achieving higher education.

4.2 Transmission of educational capital

The breakdown of respondents shows a wide range of professions.

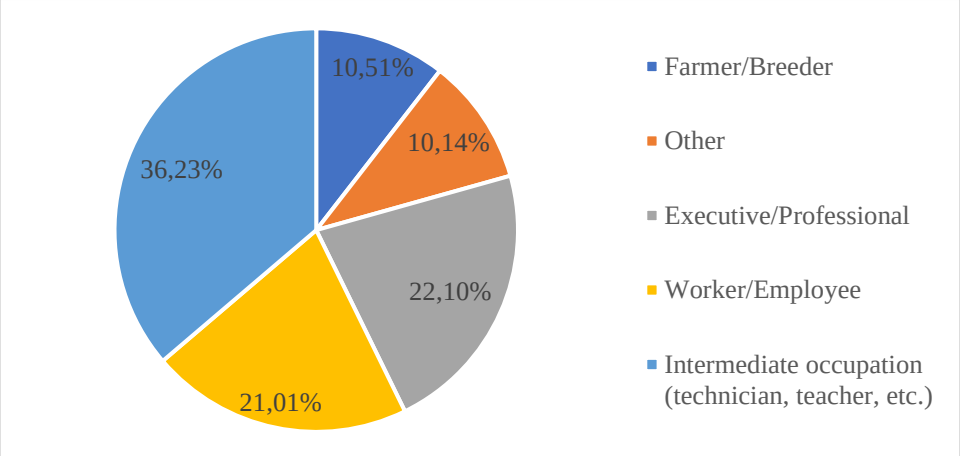


Figure 2. Distribution of respondents by profession

Almost 36.23% of respondents work in intermediate occupations, such as technicians or teachers. On the other hand, 22.10% of respondents were managers or professionals. However, 21.01% of respondents are blue-collar or white-collar workers. In addition, 10.51% of respondents are farmers or stockbreeders. The “Other” category covers 10.14% of respondents. It includes informal workers, who often face precarious conditions.

The cross-tabulation below shows the distribution of respondents' occupations according to their parents' occupations.

Table 3. Distribution of respondents' occupations according to their parents' occupations

	Profession parent					
	[1]	[2]	[3]	[4]	[5]	Total
Farmer/Breeder [1]	18,69%	5,36%	1,75%	3,45%	14,81%	10,51%
Worker/Employee [2]	24,30%	21,43%	19,30%	13,79%	18,52%	21,01%
Intermediate occupation [3]	26,17%	37,50%	50,88%	34,48%	44,44%	36,23%
Executive/Professional [4]	17,76%	26,79%	22,81%	44,83%	3,70%	22,10%
Other [5]	13,08%	8,93%	5,26%	3,45%	18,52%	10,14%
Total	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%

The results show that children of farmers/breeders have a high proportion (18.69%) continuing in the same profession, although a significant proportion (14.81%) move on to other professions. Children of blue-collar/manual parents show a tendency to remain in the same occupational category, with 24.30% remaining in this category. A significant proportion, however, move into intermediate professions (21.43%) or management/professions (19.30%).

Children of parents in intermediate professions, such as technicians or teachers, show a marked tendency to pursue similar careers (26.17%). However, a significant majority (50.88%) go on to become managers or professionals. On the other hand, children of managerial or professional parents show a less marked tendency to reproduce these professions, with only 17.76% following this path. A significant proportion (44.83%) chose different careers, notably in agriculture or animal husbandry.

Finally, children of parents with a variety of professions (others) show a wide range of career choices. A significant proportion chose agricultural (18.52%) or blue-collar (8.93%) professions. These results reveal a diversity of career paths, while highlighting a tendency towards reproduction in the intermediate professions and blue-collar/manual categories.

Figure 3 shows the distribution of individuals by professional status.

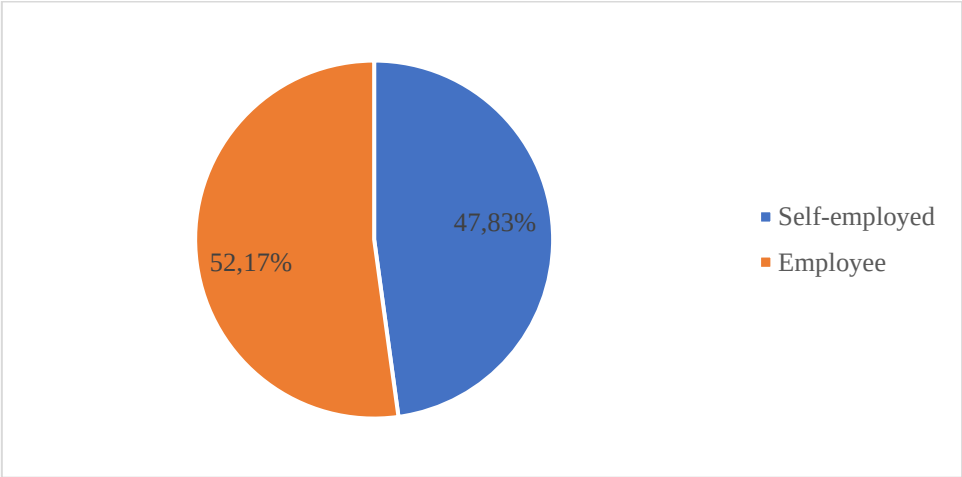


Figure 3. Distribution of individuals by professional status

The breakdown shows that 52.17% of respondents are salaried employees, while 47.83% are self-employed, reflecting a slight predominance of salaried employment in professional activities.

4.3 Obstacles to social mobility

Individuals were asked what the main difficulties are that may be preventing the social mobility of Malagasy people at present. The question asked was of the closed multiple type, with the individual able to give a maximum of two answers. Figure 3 below shows the distribution of individuals in terms of numbers. To show the weight of each factor, a Pareto diagram is also presented.

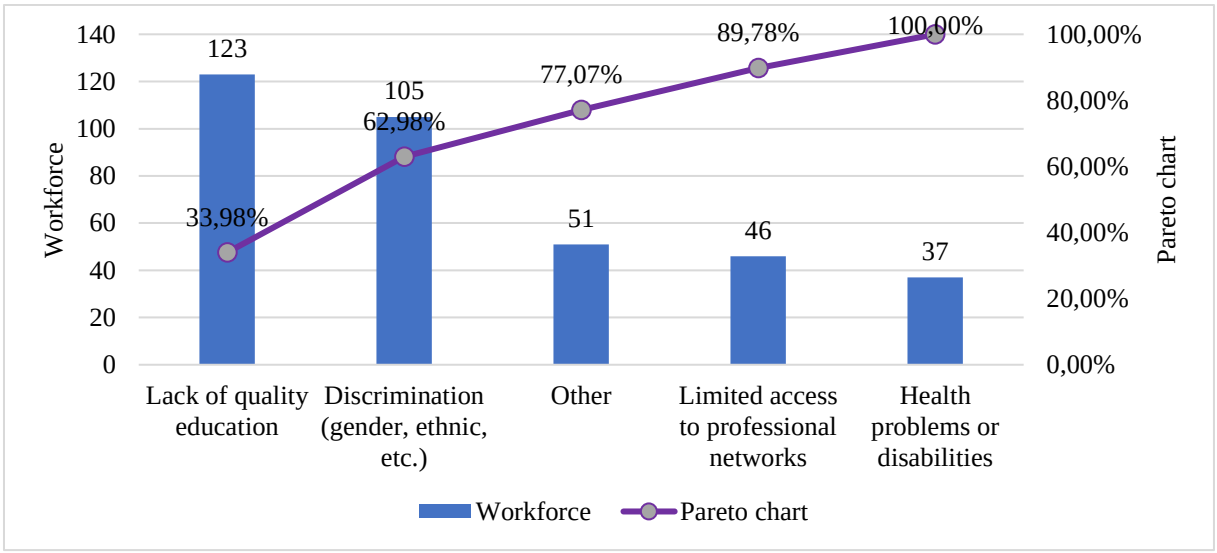


Figure 4. Perceptions of the main obstacles to social mobility

Out of 279 individuals surveyed, 123 said that the lack of quality education in Madagascar hinders people's social mobility. Secondly, the existence of discrimination (gender, ethnic, social...) is also an obstacle to social mobility. In addition, limited access to professional networks, health or disability problems and other factors are also factors. On the Pareto chart, the lack of quality education accounts for 33.98%. Lack of education and discrimination account for 62.98%. Other factors account for 37.02% of the total.

4.4 Perception of equal opportunity

Individuals were asked about their perception of equality of opportunity in Madagascar. The question asked was: "*Do you think everyone has the same chances to succeed in life, regardless of their social background?*" This question aims to assess how people perceive equality of opportunity in Madagascar, highlighting their views on the impact of social origin on opportunities for success.

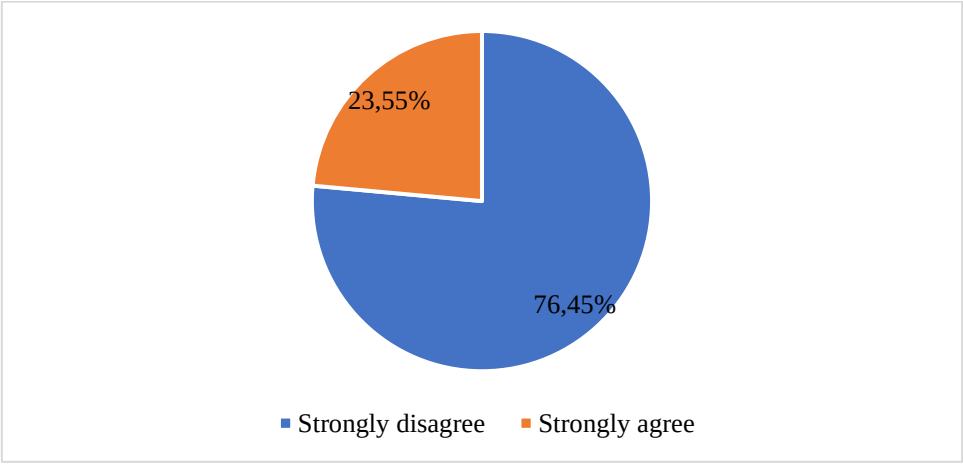


Figure 5: Distribution of individuals' perception of equal opportunity to succeed in life

The figure above shows that 76.45% of respondents have a negative view of equal opportunity. They have a negative affirmation of the fact that, regardless of social status, everyone has the same equal opportunity to succeed in the city. For the remaining 23.55%, the perception is positive.

5 Discussion of results

5.1 Intergenerational educational mobility

The result suggests an intergenerational dependency of educational levels. Indeed, children of parents with a high level of education are more likely to reach a similar or higher level. The present result of Spearman's correlation test shows a positive correlation coefficient of 0.422. This indicates a moderate and direct relationship between children's educational level and that of their parents.

Table 4. Spearman's correlation test between children's educational level and that of their parents

			EDUCATION	PARENT_EDUCATION
Rho de Spearman	EDUCATION	Correlation coefficient	1,000	,422**
		Sig. (bilatérale)	.	,000
		N	276	276
	PARENT_EDUCATION	Correlation coefficien	,422**	1,000
		Sig. (bilatérale)	,000	.
		N	276	276

**. The correlation is significant at the 0.01 level (two-tailed).

The value p=0.000 indicates that we reject the null hypothesis (H0). There is a significant monotonic relationship between children's level of education and that of their parents. These results highlight a certain intergenerational transmission of education, which may justify the persistence of educational inequalities, as children of less-educated parents may have less chance of attaining a high level of education, thus reproducing socio-economic gaps and limiting social mobility.

5.2 Intergenerational professional reproduction

Table 5 below shows the result of the Chi-2 test between the occupation of the individuals and that of one of their parents.

Table 5: Results of the Chi-2 test on the relationship between the occupation of individuals and that of their parents

	Valeur	ddl	Asymptotic significance (two-sided)
Pearson Chi-square	40,468[a]	16	,001
Likelihood ratio	43,128	16	,000
Number of valid observations	276		

a. 4 cellules (16,0%) ont un effectif théorique inférieur à 5. L'effectif théorique minimum est de 2,74.

The p-value of 0.001 is well below the usual threshold of 0.05. This means that we reject the null hypothesis (which states that there is no relationship between the occupations of respondents and their parents). In other words, the respondent's occupation and that of his or her parent are significantly related. This shows that there is a statistically significant relationship between the respondent's occupation and that of his or her parent. This suggests a certain degree of intergenerational occupational reproduction, i.e. children tend to work in occupations similar to those of their parents, although this tendency may vary according to occupational category.

Table 1 illustrates the strong intergenerational transmission of education: the higher the parents' level of education, the greater the probability that their children will reach a similar or higher level. Upward mobility is low for children of parents with no qualifications (only 11.11% reach higher education), but increases for children of parents with secondary or higher education.

Children from families with no qualifications or with a low level of education (elementary school) remain predominantly concentrated in the lower levels of education (primary or secondary), which could reflect persistent inequalities in access to educational opportunities. Conversely, children of parents with higher education qualifications are clearly over-represented in this same category (76.47%), reflecting social reproduction in access to higher education. The result of Spearman's test confirms the existence of this monotonic correlation between the parents' level of education and their children. This result corroborates numerous studies. According to Boudon (1973), education plays a central role in social reproduction, where parents' educational advantages directly influence their children's educational chances. This observation is in line with the intergenerational transmission of inequalities. Similarly, Becker & Tomes (1979) demonstrated that parents' educational investments, both financial and in terms of support, significantly affect their children's academic and professional performance.

6 Conclusion

The aim of this study was to analyze the influence of parents' professional trajectories on those of their children, highlighting the mechanisms of social and professional reproduction. Statistical analyses, notably the Spearman test, revealed a monotonic correlation between parents' and children's educational levels. In addition, the Chi-2 test demonstrated a statistically significant relationship between the occupation of individuals and that of one of their parents. This highlights a strong intergenerational reproduction of professions, particularly in the intermediate and blue-collar categories.

These results highlight the persistence of social and professional inequalities across generations, where opportunities for social mobility remain limited. The transmission of educational and professional capital plays a central role in this process, confirming the importance of socio-economic factors in individual trajectories. This result raises questions about the structural mechanisms that perpetuate inequalities, particularly through educational and professional capital. It suggests that systemic barriers, such as unequal access to quality education or professional opportunities, limit social mobility. Scientifically, it invites further analysis of underlying factors, such as the role of cultural norms, institutional discrimination and the transmission of privilege.

Politically speaking, this reproduction of professions highlights dysfunctions in the implementation of equal opportunities. It calls into question the effectiveness of public policies on education and employment, which are supposed to reduce the gaps between different social classes. In terms of equity, this phenomenon can exacerbate socio-economic inequalities, reinforce social polarization and limit social cohesion. These findings call for targeted policy reforms to improve access to opportunities and promote genuine intergenerational mobility.

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