

Access to Higher Education and Degree Stratification in Morocco: A Multilevel Analysis

Abdelhadi HOUSNI

Faculty of Legal, Economic and Social Sciences of Ain Sebâa, Hassan II University of Casablanca, Morocco

ALI Aoujil

Faculty of Legal, Economic and Social Sciences of Ain Sebâa, Hassan II University of Casablanca, Morocco

Abdelaaziz HOUSNI

Faculty of Legal, Economic and Social Sciences of Ain Sebâa, Hassan II University of Casablanca, Morocco

Correspondence address

Faculty of Legal, Economic and Social Science - Casablanca,
Morocco

Cite this article

Housni, A and al. (2026). Access to Higher Education and
Degree Stratification in Morocco: A Multilevel Analysis.
International Journal of Economics and Management Sciences,
Volume 5, Issue 3 (2026), pp. 40-65

Submitted: 06/05/2026

Accepted: 29/06/2026

Abstract:

This article investigates educational inequality in Morocco by examining both access to higher education and stratification within higher education. Using data from the 2014 General Population and Housing Census, it estimates multilevel models that account for individual, household and provincial-level factors. The results show that women, rural residents and individuals from less educated households are significantly less likely to access higher education. They also show that these inequalities persist within higher education itself, as disadvantaged groups are less likely to reach the highest degree levels. The interaction between gender and place of residence reveals a particularly strong disadvantage for rural women. Robustness analyses conducted on the subsample of sons and daughters of the household head confirm the importance of parental educational background. The article argues that educational inequality in Morocco is expressed both as unequal access to higher education and as unequal positioning within higher education.

Keywords: educational inequality; higher education; social reproduction; multilevel models; Morocco; population census.

1. Introduction

Higher education is often seen as a key driver of social mobility, human capital accumulation, and professional differentiation. Its expansion is therefore frequently interpreted as a sign of educational democratization. Yet this interpretation remains incomplete. Rising access to higher education does not necessarily mean that mechanisms of social selection disappear. In many cases, they are displaced and persist within higher education itself through unequal progression across degree levels and credentials.

This issue is particularly important in Morocco. Although schooling has expanded and the number of graduates has increased, educational trajectories remain shaped by persistent inequalities related to gender, territory, and family background. The key question is therefore not only who gains access to higher education, but also who reaches its highest levels and under what conditions.

This article examines educational inequality in Morocco through this dual perspective. It distinguishes between two stages of selection: first, access to higher education; second, position within the hierarchy of higher education degrees. This distinction makes it possible to move beyond a simple opposition between higher and non-higher education and to analyze the internal stratification of higher education itself.

The analysis draws on microdata from the 2014 General Population and Housing Census (RGPH 2014), which provides detailed information on individual characteristics, educational attainment, household background, and territorial location. Descriptive evidence already points to strong disparities. Among individuals aged 30 and over, 76% live in a household whose head has no diploma, whereas only 3.3% live in a household headed by someone with higher education. Among those who accessed higher education, 95% live in urban areas and 49% belong to households where the head has higher education. Within higher education, men account for 72% of those at the Master-and-above level, while 58% of individuals at that level live in a household whose head also holds a higher education diploma.

The multilevel models show that these disparities remain substantial once several dimensions are considered simultaneously. Women, rural residents, and especially rural women are significantly less likely to access higher education. The educational attainment of the household head is the strongest explanatory factor. The results also show that inequality does not stop at entry into higher education: women, rural residents, and individuals from households with lower educational capital are less likely to reach the highest degree levels. Robustness analyses restricted to sons and daughters of the household head reinforce this interpretation in terms of parental social origin.

The article therefore argues that educational inequality in Morocco takes the form of both unequal access and unequal position. Higher education appears not only as a space of expansion, but also as a space in which social hierarchies are reproduced and reconfigured.

The remainder of the article is organized as follows. Section 2 reviews the literature and presents the analytical framework. Section 3 describes the data and methods. Section 4 provides the descriptive analysis. Section 5 presents the econometric results. Section 6 discusses the main implications of the findings. The final section concludes.

2. Literature Review and Theoretical Framework

Research on educational inequality has long shown that schooling is not simply a mechanism for allocating skills and credentials; it is also a central site in the reproduction of social hierarchies. In their classic formulation, Bourdieu and Passeron (1977) emphasized the role of cultural capital in educational achievement, arguing that school institutions tend to reward dispositions, practices, and resources unevenly distributed across social groups. In a complementary perspective, Boudon (1974) highlighted the role of socially differentiated choices, costs, risks, and expected returns in educational decision-making. Taken together, these approaches established a key insight: educational trajectories cannot be reduced to individual merit, since they are shaped by unequally distributed resources and constraints before students reach higher education.

These perspectives were later extended by research on educational stratification, which showed that inequality emerges not only in final attainment but at successive educational transitions. Mare (1981), for example, conceptualized schooling as a sequence of socially selective transitions. This framework remains highly relevant for higher education, where inequality may appear both in the probability of entry and in the probability of reaching the highest levels once access has been secured.

Theories of educational expansion further challenged the assumption that massification necessarily produces equalization. Raftery and Hout (1993) argued that expansion reduces inequality only after advantaged groups have saturated newly available educational opportunities. Lucas (2001) later refined this view through the theory of effectively maintained inequality, arguing that when quantitative access widens, advantaged groups preserve their position through more qualitative forms of differentiation, including institutional hierarchies, fields of study, and degree levels. Comparative research also showed early on that rising levels of schooling do not automatically reduce inequality. Shavit and Blossfeld (1993), for instance, documented the persistence of social-origin disparities across a wide range of national contexts despite overall increases in educational attainment.

More recent scholarship broadly confirms these classical insights while giving greater attention to internal differentiation within higher education itself. A recent meta-review concludes that family resources, institutional arrangements, and contextual factors continue to shape educational trajectories in powerful ways (Symonds et al., 2025). In the specific field of higher education, Fitzgerald et al. (2025) show that inequality remains strongly associated with socioeconomic background, parental education, prior schooling, gender, and geographical location across diverse contexts. Haas and Hadjar (2024) further demonstrate that social origin shapes not only access, but also internal study trajectories once students have already entered higher education.

Another growing strand of research highlights the spatial dimension of higher education inequality. Zahl-Thanem et al. (2024) show that urban-rural disparities in higher educational attainment have become more pronounced across recent cohorts and that these differences are especially visible in the interaction between place and gender. Recent international reports point in the same direction. UNESCO IESALC (2025) emphasizes that the global expansion of higher education has not eliminated inequality in participation, progression, or advanced attainment,

while OECD (2024) shows that women now outnumber men in higher education overall in many contexts, yet continue to face disparities in advanced degrees, fields of study, and post-graduation outcomes.

2.1. Higher Education as a Two-Stage Selection Process

Building on this literature, higher education can be understood as a space of selection operating at two related stages. The first concerns access to higher education. Individuals do not face the same likelihood of crossing this threshold, and access depends both on resources accumulated during earlier stages of schooling and on resources available within the household. The second concerns position within higher education. Once access has been secured, students are not distributed evenly across degree levels, institutional tracks, or the most valued credentials. The issue is therefore not only whether one enters the system, but which position one comes to occupy within it. Fitzgerald et al. (2025), Haas and Hadjar (2024), and UNESCO IESALC (2025) all reinforce the relevance of this distinction by showing that inequality often persists within higher education rather than disappearing at the point of entry.

2.2. Gender, Territory, and the Differentiation of Educational Trajectories

Educational inequality cannot be reduced to social origin alone. Gender remains a major axis of differentiation, but its effects vary across institutional and territorial contexts. OECD (2024) shows that while women now represent a larger share of tertiary graduates in many systems, gender disparities remain significant at more advanced levels and across fields of study. Territory is equally important. Urban-rural differences in higher education reflect unequal access to educational infrastructure, institutional concentration, mobility costs, and local opportunity structures. Zahl-Thanem et al. (2024) show that spatial inequalities remain strong and interact with both gender and social background. Recent work on the MENA region points in the same direction. El-Deghaidy et al. (2025), in a scoping review of STEM gender disparities, show that despite progress in women's participation, inequalities remain visible in progression and specialization.

2.3. Emerging Economies, MENA Contexts, and the Moroccan Case

The question of higher education inequality is particularly important in emerging economies, where expansion often takes place under conditions of uneven territorial development, institutional differentiation, and persistent family-based inequality. Fitzgerald et al. (2025) suggest that, in such contexts, expansion may increase participation without eliminating socially structured differences in who reaches the most valued segments of higher education. In the MENA region, this issue is especially salient. International and regional reports continue to stress that educational expansion coexists with persistent inequalities associated with gender, territory, and household resources. In Morocco specifically, recent World Bank documents underline that higher education has become a central field of reform, while social and territorial disparities remain major structural challenges (World Bank, 2023). This makes the Moroccan case especially relevant for examining how expansion may coexist with persistent inequality.

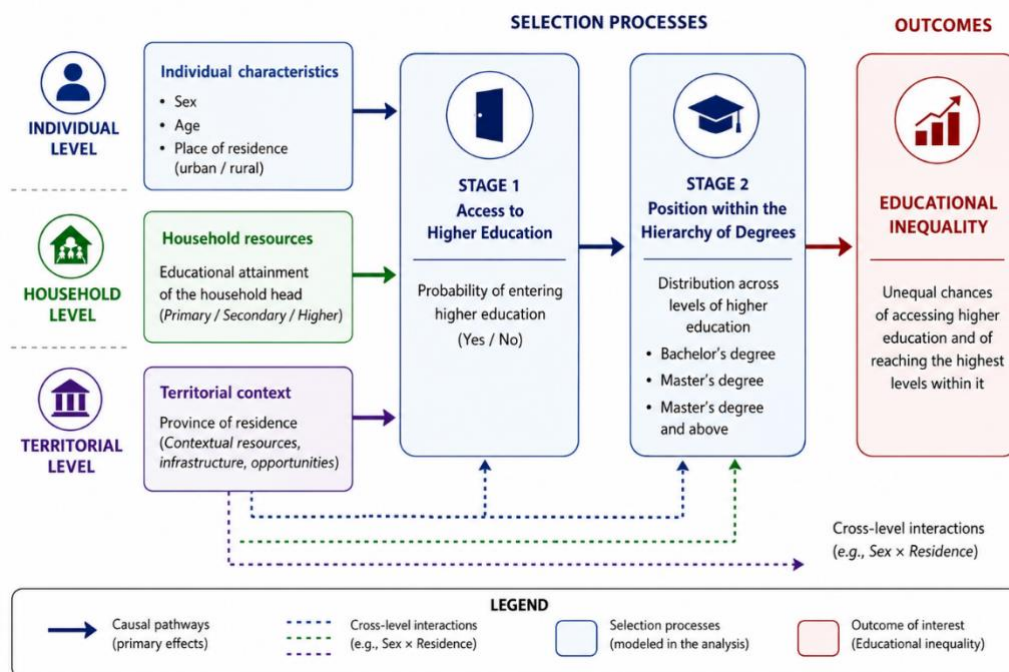
2.4. Analytical Framework

Against this background, the article adopts an analytical framework structured around three propositions. First, educational inequality operates through mechanisms of social reproduction, and household educational capital remains a central part of that process. Second, higher education is treated as a two-stage selection process: access to higher education on the one

hand, and progression within the hierarchy of higher education degrees on the other. Third, these mechanisms are understood as socially and territorially situated. Gender, place of residence, household educational resources, and territorial context do not simply add up mechanically; they interact. The central hypothesis of the article is therefore that educational inequality in Morocco is expressed both as unequal access to higher education and as unequal positioning within higher education, to the advantage of men, urban residents, and individuals from households endowed with greater educational capital.

Figure 1. Multilevel Conceptual Framework

From resources to unequal access and attainment within higher education



Note: The framework distinguishes two sequential stages-access to higher education and attainment within the hierarchy of degrees-

Source: Author's elaboration based on the study's analytical framework.

3. Data and Methods

This section presents the statistical source used, the study population, the construction of the main variables, and the econometric strategy adopted. It also clarifies the methodological choices justified by the hierarchical structure of the census data and by the nature of the educational outcomes under study.

3.1. Data Source and Study Population

The analyses rely on anonymized microdata from the 2014 General Population and Housing Census (RGPH 2014) conducted by Morocco's High Commission for Planning (HCP). This source is particularly well suited to the study of educational inequalities in Morocco because it combines detailed information on individual characteristics, educational attainment, household characteristics, and territorial location.

The use of the RGPH 2014 is especially justified by the availability of a detailed variable identifying the highest diploma attained, including distinctions within higher education itself.

This makes it possible to study not only access to higher education, but also the internal hierarchy of higher education degrees.

The analysis is restricted to individuals aged 30 years and over at the time of the census. This threshold is intended to approximate the final educational level attained and to reduce the inclusion of individuals whose educational trajectories may still have been incomplete at the time of observation. After matching the individual- and household-level files, cleaning the variables, and excluding observations with missing information on the variables required for estimation, several analytical subsamples were constructed according to the specifications retained.

A further point concerns the temporal scope of the data. The analysis relies on the 2014 General Population and Housing Census, which remains the most comprehensive nationally representative source available for examining educational inequality at this level of detail in Morocco. At the same time, the higher education system may have evolved since 2014 in terms of enrollment patterns, institutional expansion, policy reforms, and the broader organization of higher education opportunities. The findings should therefore be interpreted as evidence on the structure of inequality at the time of the census. Even so, the mechanisms identified here—especially those related to household educational resources, territorial disparities, and gendered inequalities—remain analytically relevant for understanding the broader dynamics of higher education stratification in Morocco.

3.2. Variable Construction

3.2.1. Dependent Variables

Three dependent variables are used.

The first, employed in Model 1, measures access to higher education. It is a binary variable coded 1 if the individual holds a diploma belonging to higher education and 0 otherwise.

The second, used in Model 2, captures the internal hierarchy of higher education degrees. It is constructed only for individuals who have already accessed higher education and distinguishes three ordered categories: short-cycle higher education, Bachelor's/Master's-level first cycle (Licence/Maîtrise), and Master and above.

The third variable, used in a robustness model, distinguishes individuals who have reached the Master and above level from the rest of higher education graduates.

3.2.2. Explanatory Variables

The explanatory variables are organized at three levels.

At the individual level, the analysis includes sex, place of residence (urban/rural), and age grouped into five-year categories.

At the household level, the main variable retained is the educational attainment of the household head, reconstructed from the individual file using the relationship-to-household-head variable. Once identified, the household head's educational level was assigned to all household members. This variable was recoded into four categories: no diploma, primary, secondary, and higher education. In addition, household size was included in standardized form.

At the territorial level, the province/prefecture of residence is used as the grouping level for the random intercept.

3.2.3. Interpretation of Household Head Characteristics

In the main models, the educational attainment of the household head is used as an indicator of the household educational context observed at the time of the census rather than as a perfect measure of parental social origin. This distinction is important. Although the educational level of the household head captures an important dimension of the educational resources available within the household, it does not fully reflect the broader complexity of family socioeconomic background. In particular, it cannot account directly for other relevant dimensions of social origin such as income, wealth, occupational position, housing conditions, or the broader distribution of economic and cultural capital within the family.

A second limitation concerns family relationships themselves. The household head identified at the time of the census cannot always be assumed to be a parent of the individual observed, especially in adult populations where co-residence may reflect a variety of household arrangements. For this reason, the variable should not be interpreted mechanically as a direct measure of parental education in the main sample. Rather, it is best understood as a proxy for the educational environment of the household in which the individual was living at the time of enumeration.

At the same time, this variable remains substantively meaningful. The educational attainment of the household head is likely to reflect part of the informational, normative, and academic resources available within the household, including familiarity with schooling, attitudes toward long educational trajectories, and the capacity to support progression into higher education. To address its limitations more directly, complementary robustness analyses were conducted on the subsample of sons and daughters of the household head. In that restricted sample, the household head's educational attainment can be interpreted more plausibly as a parental attribute, thereby offering a closer approximation to intergenerational educational transmission.

3.3. Econometric Models

The data have a hierarchical structure: individuals are nested within households that are themselves located within provinces or prefectures. In the models estimated here, unobserved territorial heterogeneity is captured through a province-level random intercept. This makes it possible to account for residual differences across provinces/prefectures without introducing a full set of provincial fixed effects.

➤ Model 1: Access to Higher Education

Let Y_{ij} be a binary variable equal to 1 if individual i , living in province j , has accessed higher education, and 0 otherwise. The multilevel logit model is written as:

$$\text{logit}[P(Y_{ij} = 1)] = \beta_0 + \beta_1 \text{Female}_{ij} + \beta_2 \text{Rural}_{ij} + \sum_k \beta_k \text{AgeGroup}_{k,ij} + \beta_3 \text{HouseholdSize}_{ij} + \sum_m \beta_m \text{HeadEdu}_{m,ij} + u_j$$

with:

$$u_j \sim \mathcal{N}(0, \sigma_u^2)$$

where:

- β_0 is the overall intercept;
- Female_{ij} indicates the sex of the individual;
- Rural_{ij} indicates place of residence;

- $AgeGroup_{k,ij}$ denotes age-group dummies;
- $HouseholdSize_{ij}$ is standardized household size;
- $HeadEdu_{m,ij}$ denotes the educational categories of the household head;
- u_j is the random intercept specific to province j .

In the main specification, an interaction between sex and place of residence is added:

$$\begin{aligned} \text{logit}[P(Y_{ij} = 1)] = & \beta_0 + \beta_1 Female_{ij} + \beta_2 Rural_{ij} + \beta_3 (Female_{ij} \times Rural_{ij}) + \sum_k \beta_k AgeGroup_{k,ij} \\ & + \beta_4 HouseholdSize_{ij} + \sum_m \gamma_m HeadEdu_{m,ij} + u_j \end{aligned}$$

This specification allows us to test whether the effect of gender varies between urban and rural contexts.

➤ Model 2: Degree Stratification within Higher Education

The second model is estimated only on the subsample of individuals who have already accessed higher education.

Let Y_{ij} be an ordered variable taking three values:

$$Y_{ij} = \begin{cases} 1 & \text{if short-cycle higher education} \\ 2 & \text{if Licence/Maîtrise} \\ 3 & \text{if Master and above} \end{cases}$$

A multilevel cumulative logit model is then specified as follows:

$$\begin{aligned} \text{logit}[P(Y_{ij} \leq c)] = & \theta_c \\ & - \left(\beta_1 Female_{ij} + \beta_2 Rural_{ij} + \sum_k \beta_k AgeGroup_{k,ij} + \beta_3 HouseholdSize_{ij} + \sum_m \beta_m HeadEdu_{m,ij} \right. \\ & \left. + u_j \right) \end{aligned}$$

for $c = 1, 2$, with:

$$u_j \sim \mathcal{N}(0, \sigma_u^2)$$

where θ_c are the threshold parameters of the ordered outcome.

Under this formulation, a positive coefficient indicates a higher probability of reaching a higher category in the hierarchy of higher education degrees.

➤ Robustness Model: Access to “Master and Above”

To test the robustness of the ordinal specification, a third model is estimated as a binary multilevel logit. Let M_{ij} be equal to 1 if the individual has reached the Master and above level, and 0 otherwise among higher education graduates. The model is:

$$\begin{aligned} \text{logit}[P(M_{ij} = 1)] = & \beta_0 + \beta_1 Female_{ij} + \beta_2 Rural_{ij} + \sum_k \beta_k AgeGroup_{k,ij} + \beta_3 HouseholdSize_{ij} + \sum_m \beta_m HeadEdu_{m,ij} \\ & + u_j \end{aligned}$$

This model makes it possible to verify whether the determinants of degree stratification remain stable when the focus is placed specifically on the upper end of the higher education hierarchy. In all specifications, u_j captures province-level unobserved heterogeneity. The inclusion of a random intercept at the provincial level allows the models to account for territorial differences in educational opportunities and contexts without estimating a full set of provincial fixed effects.

4. Descriptive Analysis of the Data

Before turning to the multilevel models, it is useful to briefly examine the main descriptive patterns in the data. This preliminary step helps identify the broad social and territorial gradients that structure both access to higher education and differentiation within higher education.

4.1. General Structure of the Sample

The analytical sample includes 1,520,886 individuals aged 30 and over. The sex distribution is broadly balanced, with 49% men and 51% women, while 64% of the sample lives in urban areas and 36% in rural areas. The age distribution is concentrated in the younger adult groups, especially between 30 and 44 years.

Table 1. General Structure of the Sample

Characteristic	N = 1,520,886 ¹
Sex	
Male	746,548 (49%)
Female	774,338 (51%)
Place of residence	
Urban	967,106 (64%)
Rural	551,644 (36%)
Age group	
30–34	261,002 (17%)
35–39	233,680 (15%)
40–44	214,108 (14%)
45–49	181,571 (12%)
50–54	178,427 (12%)
55–59	136,935 (9.0%)
60–64	112,206 (7.4%)
65–69	62,913 (4.1%)
70–74	57,256 (3.8%)
75–79	82,788 (5.4%)
Educational attainment of the household head	
No diploma	942,814 (76%)
Primary	125,084 (10%)
Secondary	133,089 (11%)
Higher education	41,467 (3.3%)
Household size (standardized)	-0.14 (1.00)

¹ n (%); Mean (SD)

Source: RGPH 2014 microdata, HCP, processed by the author.

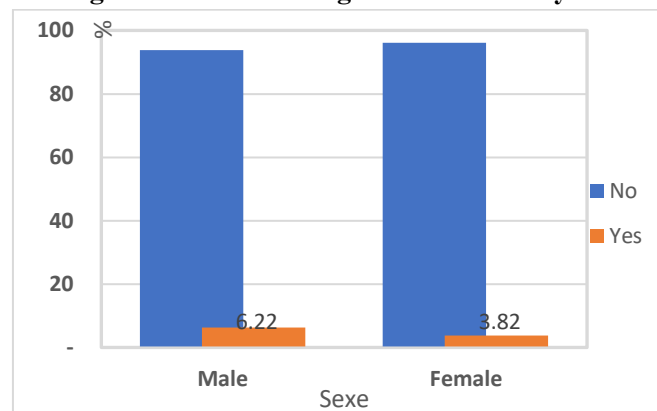
The most striking feature of the sample concerns the educational attainment of the household head. Fully 76% of individuals live in a household whose head has no diploma, while only 3.3% live in a household headed by someone with higher education. This distribution already points to the limited diffusion of educational capital across households in the population under study. Household size, introduced in standardized form, has a mean of -0.14 in the full sample. Although this variable does not have the same sociological significance as sex, place of residence, or the educational attainment of the household head, it provides information on domestic living conditions and may help explain part of the educational disparities observed.

4.2. Access to Higher Education

Access to higher education remains highly unequal. In the subsample used for the first model, 1,177,535 individuals had not accessed higher education, compared with only 62,940 who had.

Higher education therefore remains a minority outcome within the adult population considered here.

Figure 2. Access to Higher Education by Sex



Source: RGPH 2014 microdata, HCP, processed by the author.

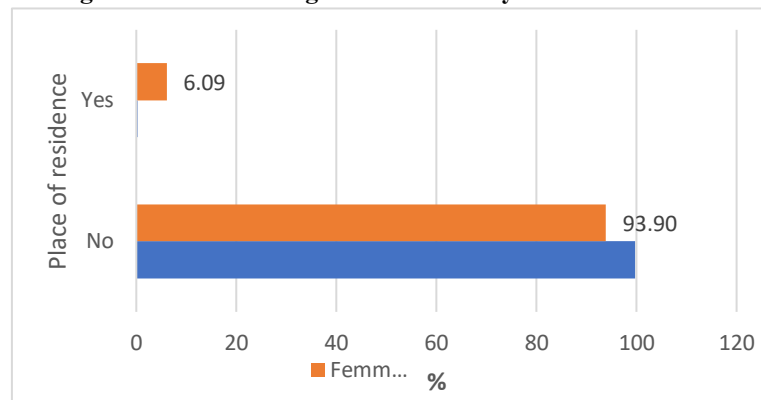
Gender disparities are already visible at this stage. Among individuals who had accessed higher education, men account for 40,254 cases, or 64%, compared with 22,686 women, or 36%. By contrast, among non-participants in higher education, men account for 52% and women for 48%. The underrepresentation of women among higher education graduates is therefore already clearly visible at the descriptive level.

Territorial contrasts are even more pronounced. Among individuals who had accessed higher education, 59,895 (95%) live in urban areas, compared with only 3,045 (4.8%) in rural areas. By contrast, rural residents represent 40% of those who had not accessed higher education. The urban-rural divide thus emerges as one of the main axes structuring unequal access to higher education.

The most striking contrast, however, appears when considering the educational attainment of the household head. Among individuals who had accessed higher education, 31,011 (49%) belong to a household whose head also holds a higher education diploma, whereas this category includes only 10,407 individuals (0.9%) among those who had not accessed higher education. Conversely, individuals living in a household whose head has no diploma account for 929,225 cases (79%) among non-participants, but only 11,869 (19%) among those who did access higher education. These very large differences already suggest a strong intergenerational transmission of educational resources within the household.

Household size also distinguishes the two groups, although less dramatically. Its standardized mean is -0.02 among those who had not accessed higher education, compared with -0.47 among those who had. Individuals who reached higher education therefore belong, on average, to smaller households than those who did not.

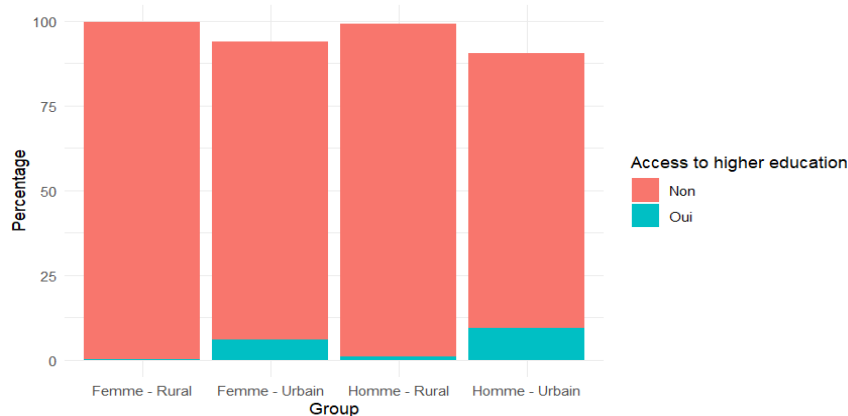
Figure 3. Access to Higher Education by Place of Residence



Source: RGPH 2014 microdata, HCP, processed by the author.

The figure combining sex and place of residence is especially informative. It suggests that gender inequalities are not distributed uniformly across social and territorial space. Rural women appear as the most disadvantaged group, whereas urban men occupy the most favorable position. This configuration already points to the importance of the interaction term between sex and place of residence in the econometric estimates.

Figure 4. Access to Higher Education by Sex and Place of Residence



Source: RGPH 2014 microdata, HCP, processed by the author.

Table 2. Access to Higher Education by Main Characteristics

Characteristic	No \nN = 1,177,535 ¹	Yes \nN = 62,940 ¹
Sex		
Male	606,876 (52%)	40,254 (64%)
Female	570,659 (48%)	22,686 (36%)
Place of residence		
Urban	701,652 (60%)	59,895 (95%)
Rural	475,883 (40%)	3,045 (4.8%)
Age group		
30–34	199,362 (17%)	13,283 (21%)
35–39	182,690 (16%)	11,079 (18%)
40–44	167,871 (14%)	10,602 (17%)
45–49	142,125 (12%)	9,565 (15%)
50–54	140,517 (12%)	8,068 (13%)
55–59	108,014 (9.19%)	4,959 (7.9%)
60–64	87,795 (7.5%)	3,046 (4.8%)
65–69	48,154 (4.1%)	1,352 (2.1%)
70–74	42,088 (3.6%)	629 (1.0%)
75–79	58,919 (5.0%)	357 (0.6%)
Educational attainment of the household head		
No diploma	929,225 (79%)	11,869 (19%)
Primary	119,716 (10%)	5,265 (8.4%)
Secondary	118,187 (10%)	14,795 (24%)
Higher education	10,407 (0.9%)	31,011 (49%)
Household size (standardized)	-0.02 (0.96)	-0.47 (0.69)

¹ n (%); Mean (SD)

Source: RGPH 2014 microdata, HCP, processed by the author

4.3. Degree Stratification within Higher Education

Inequality does not disappear once higher education has been reached. Among the 62,940 higher education graduates in the relevant subsample, 6,238 belong to short-cycle higher education, 36,031 to Licence/Maîtrise, and 20,671 to Master and above. Higher education is therefore internally differentiated, with a clear hierarchy of degree levels.

Gender disparities remain visible within this hierarchy. Men account for 60% of short-cycle graduates, 60% of Licence/Maîtrise graduates, and 72% of those who reached the Master-and-above level.

Figure 5. Degree Stratification within Higher Education by Sex

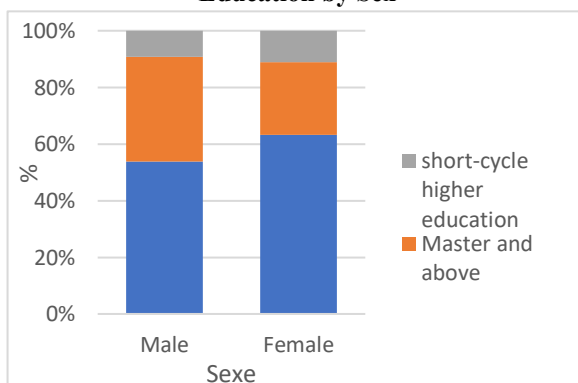
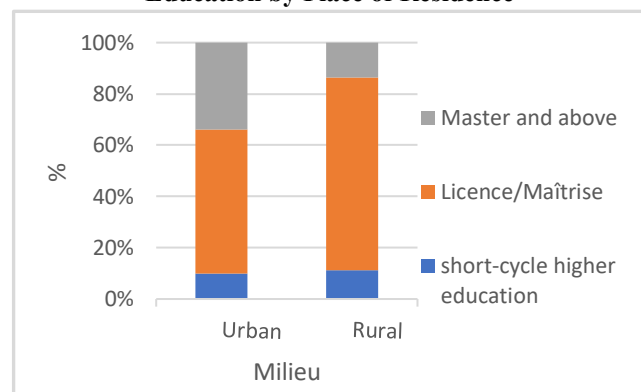


Figure 6. Degree Stratification within Higher Education by Place of Residence



Source: RGPH 2014 microdata, HCP, processed by the author.

Place of residence also remains strongly differentiating. Rural residents represent 5.5% of short-cycle graduates, 6.4% of Licence/Maîtrise graduates, but only 2% of Master-and-above graduates. The highest higher education degrees therefore remain overwhelmingly concentrated in urban areas.

The educational attainment of the household head continues to structure positions within the hierarchy of higher education strongly. Among individuals who have reached the Master and above level, 11,943 (58%) live in a household whose head holds a higher education diploma, compared with 2,110 (10%) in a household whose head has no diploma. Conversely, households whose heads have no diploma account for 19% of short-cycle graduates and 24% of Licence/Maîtrise graduates, but only 10% of Master-and-above graduates. This gradient suggests that household educational capital influences not only entry into higher education, but also the probability of reaching the highest positions within it.

Household size has a standardized mean of -0.46 in short-cycle higher education, -0.42 in Licence/Maîtrise, and -0.58 in Master and above. Smaller households thus appear to be more strongly associated with trajectories leading to the highest higher education degrees.

Characteristic	short-cycle higher education N = 6,238 ¹	Licence/Maîtrise N = 36,031 ¹	Master and above N = 20,671 ¹
Sexe			
Male	3,727 (60%)	21,707 (60%)	14,820 (72%)
Female	2,511 (40%)	14,324 (40%)	5,851 (28%)
Place of residence			
Urban	5,895 (95%)	33,743 (94%)	20,257 (98%)
Rural	343 (5.5%)	2,288 (6.4%)	414 (2.0%)
Age group			
30 34	1,357 (22%)	7,638 (21%)	4,288 (21%)
35 39	1,150 (18%)	6,586 (18%)	3,343 (16%)
40 44	1,115 (18%)	6,521 (18%)	2,966 (14%)
45 49	972 (16%)	5,860 (16%)	2,733 (13%)
50 54	836 (13%)	4,537 (13%)	2,695 (13%)
55 59	433 (6.9%)	2,410 (6.7%)	2,116 (10%)
60 64	199 (3.2%)	1,432 (4.0%)	1,415 (6.8%)
65 69	113 (1.8%)	598 (1.7%)	641 (3.1%)
70 74	43 (0.7%)	284 (0.8%)	302 (1.5%)
75 79	20 (0.3%)	165 (0.5%)	172 (0.8%)
Educational attainment of the household head			
No diploma	1,195 (19%)	8,564 (24%)	2,110 (10%)
Primary	603 (9.69%)	3,324 (9.19%)	1,338 (6.5%)
Secondary	1,483 (24%)	8,032 (22%)	5,280 (26%)
Higher education	2,957 (47%)	16,111 (45%)	11,943 (58%)
Household size (standardized)	-0.46 (0.67)	-0.42 (0.73)	-0.58 (0.60)

¹n (%); Mean (SD)

Table 3. Degree Stratification within Higher Education by Individual and Household Characteristics

Source: RGPH 2014 microdata, HCP, processed by the author.

Taken together, the descriptive analysis highlights a double reality. Educational inequalities first concern access to higher education itself, and then extend within higher education, in the

form of a socially differentiated hierarchy of degrees.

5. Econometric Results

5.1. Access to Higher Education: The Effects of Gender, Place of Residence, and Household Educational Capital

Table 4 reports the results of the multilevel model of access to higher education. This specification includes an interaction between sex and place of residence. It is preferred to the model without interaction because it improves overall fit: the AIC decreases from 293,395.5 to 293,246.6, indicating that the joint consideration of gender and territorial context meaningfully improves the explanation of access to higher education.

The first striking result concerns the effect of gender. The coefficient associated with the *Female* category is negative and highly significant, with an odds ratio of 0.419. In other words, all else being equal, women have approximately 58% lower odds of accessing higher education than men.

Place of residence appears to be equally structuring. The odds ratio associated with rural residence is 0.279, which means that individuals living in rural areas have about 72% lower odds of accessing higher education than urban residents, other things being equal. This result extends the descriptive patterns already highlighted in Table 2, where higher education access is overwhelmingly concentrated in urban areas.

Table 4. Multilevel Model of Access to Higher Education

Variable	Estimate	Odds Ratio	95% CI	Std. Error	z value	p-value
Intercept	-3.210	0.040	0.038–0.043	0.035	-90.834	<0.001
Female	-0.871	0.419	0.409–0.428	0.012	-74.221	<0.001
Rural	-1.278	0.279	0.266–0.292	0.024	-52.677	<0.001
Age 35–39	-0.272	0.762	0.737–0.787	0.017	-16.091	<0.001
Age 40–44	-0.309	0.734	0.710–0.760	0.017	-17.869	<0.001
Age 45–49	-0.296	0.744	0.718–0.771	0.018	-16.492	<0.001
Age 50–54	-0.395	0.673	0.649–0.699	0.019	-21.121	<0.001
Age 55–59	-0.580	0.560	0.536–0.584	0.022	-26.726	<0.001
Age 60–64	-0.665	0.514	0.489–0.541	0.025	-26.215	<0.001
Age 65–69	-0.732	0.481	0.449–0.515	0.035	-21.002	<0.001
Age 70–74	-1.221	0.295	0.269–0.324	0.048	-25.664	<0.001
Age 75–79	-2.148	0.117	0.104–0.131	0.060	-36.084	<0.001
Household size (standardized)	-0.007	0.993	0.978–1.008	0.008	-0.916	0.360
Household head: Primary education	0.794	2.213	2.138–2.290	0.017	45.403	<0.001
Household head: Secondary education	1.777	5.912	5.751–6.076	0.014	126.813	<0.001
Household head: Higher education	5.070	159.151	154.065–164.405	0.017	305.939	<0.001
Female × Rural	-0.570	0.565	0.514–0.622	0.048	-11.759	<0.001

Source: Authors' calculations based on RGPH 2014 microdata, HCP, using R.

The central result of the model, however, lies in the interaction between sex and place of residence. The interaction term *Female × Rural* is negative, significant, and has an odds ratio of 0.565. This indicates that female disadvantage is even more pronounced in rural settings.

Gender inequalities and territorial inequalities do not simply add up; they reinforce one another. This pattern is particularly clear in Figure 6, which displays the predicted probabilities of access to higher education for four ideal-type profiles. Urban men have the highest predicted probability, at around 3.9%, followed by urban women (1.6%) and rural men (1.1%). Rural women occupy the most disadvantaged position, with a predicted probability close to 0.3%. The 95% confidence intervals confirm the clarity of these differences. The figure therefore makes immediately visible the cumulative nature of the disadvantage faced by rural women.

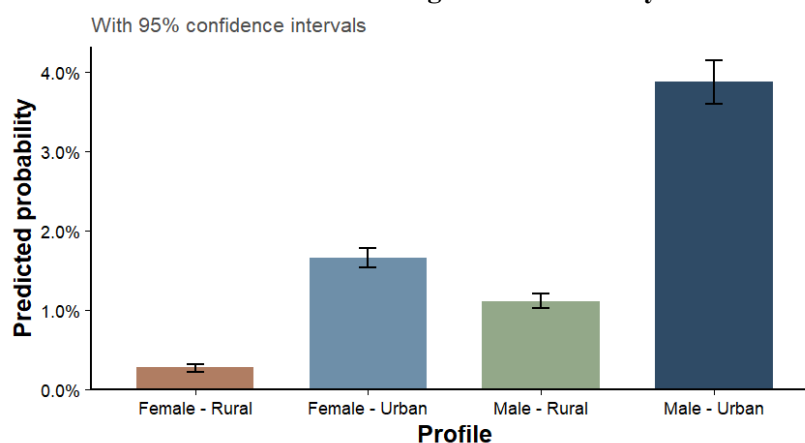
Age also exerts an important effect. Compared with the reference age group (30–34 years), all other age groups have odds ratios below 1. For example, the odds ratio is 0.762 for those aged 35–39, 0.673 for those aged 50–54, and 0.117 for those aged 75–79. This pattern most likely reflects a cohort effect: younger generations within the 30-and-over population have had greater access to higher education than older generations.

The educational attainment of the household head is by far the strongest social determinant in the model. Compared with individuals living in households whose head has no diploma, those living in households whose head has primary education have an odds ratio of 2.213, those whose head has secondary education have an odds ratio of 5.912, and those whose head has higher education have an odds ratio of 159.151. This gradient is exceptionally strong. It indicates that access to higher education remains deeply structured by the educational capital available within the household.

By contrast, household size does not appear significant in this specification. Its odds ratio is very close to 1 (0.993), suggesting that once sex, place of residence, age, and the educational attainment of the household head are controlled for, this variable does not add substantial explanatory power.

Finally, the provincial random effect remains non-zero, with a variance of 0.0715 and a standard deviation of 0.267, indicating that part of the inequality in access to higher education remains associated with contextual differences across provinces.

Figure 7. Predicted Probabilities of Access to Higher Education by Sex and Place of Residence



Source: Authors' calculations based on RGPH 2014 microdata, HCP, using R.

5.2. The Hierarchy of Higher Education Degrees: Persistent Stratification within Higher Education

Table 5 presents the results of the multilevel ordinal model estimated on individuals who had already accessed higher education. The aim here is no longer to explain entry into higher

education, but rather the probability of reaching a higher category within the hierarchy of higher education degrees.

Gender continues to play a major role. The odds ratio associated with the *Female* category is 0.460, meaning that, all else being equal, women are less likely to reach the highest levels of higher education. This result directly extends the descriptive patterns reported in Table 3, where women account for only 28% of those who reached the Master and above level.

Rural residence also remains significantly disadvantageous, with an odds ratio of 0.753. Even after gaining access to higher education, individuals from rural areas remain disadvantaged in progressing toward the most advanced degrees. Territorial inequality therefore does not end at the threshold of entry into higher education; it persists within higher education itself.

The results for age are more nuanced. The age groups 35–39, 40–44, 45–49, and 50–54 all have odds ratios below 1, namely 0.820, 0.702, 0.700, and 0.778, respectively. From 60–64 onward, odds ratios become greater than 1. This may reflect a particular selection process among older individuals who reached the highest levels of higher education. These effects should nevertheless be interpreted with caution, since they may combine cohort effects and selection effects.

The educational attainment of the household head again plays a central role, although in a more selective way than in the access model. The primary education category is not significant (OR=1.045), whereas secondary education (OR = 1.390) and especially higher education (OR = 2.276) significantly increase the probability of reaching a higher position in the degree hierarchy. This indicates that household educational capital matters not only for access to higher education, but also for progression toward the most prestigious degree levels once access has been achieved.

Household size remains non-significant in this model (OR = 1.006), which confirms its secondary role in comparison with gender, territory, and household educational capital.

The provincial random effect remains non-zero, with a variance of 0.0757 and a standard deviation of 0.275. This suggests that provinces continue to differentiate university trajectories even among those who have already entered higher education.

Table 5. Multilevel Ordinal Model of the Hierarchy of Higher Education Degrees

Effects of individual and household characteristics on the probability of reaching a higher category within the hierarchy of higher education degrees

Variable	Estimate	Odds Ratio	95% CI	Std. Error	z value	p value
Female	-0.776	0.460	0.443–0.478	0.020	-39.259	<0.001
Rural	-0.284	0.753	0.695–0.815	0.040	-7.028	<0.001
Age 35–39	-0.198	0.820	0.780–0.863	0.026	-7.634	<0.001
Age 40–44	-0.354	0.702	0.666–0.739	0.027	-13.359	<0.001
Age 45–49	-0.357	0.700	0.663–0.738	0.027	-13.003	<0.001
Age 50–54	-0.251	0.778	0.735–0.824	0.029	-8.617	<0.001
Age 55–59	0.015	1.015	0.949–1.086	0.034	0.446	0.655
Age 60–64	0.148	1.159	1.069–1.257	0.041	3.571	<0.001
Age 65–69	0.179	1.196	1.066–1.341	0.059	3.054	0.002
Age 70–74	0.245	1.278	1.087–1.503	0.083	2.963	0.003
Age 75–79	0.263	1.301	1.052–1.609	0.108	2.430	0.015

Household size (standardized)	0.006	1.006	0.980–1.032	0.013	0.429	0.668
Household head: Primary education	0.044	1.045	0.977–1.118	0.034	1.291	0.197
Household head: Secondary education	0.329	1.390	1.317–1.466	0.027	12.060	<0.001
Household head: Higher education	0.822	2.276	2.164–2.394	0.026	31.849	<0.001

Source: Authors' calculations based on RGPB 2014 microdata, HCP, using R.

5.3. Robustness Test: Access to the “Master and Above” Level

Table 6 presents the binary multilevel model estimated by contrasting individuals who reached the Master and above level with the rest of higher education graduates. This specification is an important robustness test because it makes it possible to verify whether the results of the ordinal model hold when attention is focused specifically on the upper end of the higher education hierarchy.

The results largely confirm the previous conclusions. The odds ratio associated with the *Female* category is 0.387, indicating that women are substantially less likely to reach the Master and above level. Rural residence also remains strongly disadvantageous, with an odds ratio of 0.575. Together, these two results show that gender and territorial inequalities persist up to the very top of the educational hierarchy.

The educational attainment of the household head again has a strong and increasing effect: the odds ratio is 1.303 for primary education, 1.855 for secondary education, and 3.240 for higher education. Even among higher education graduates, household educational resources continue to shape access to the highest positions.

Age continues to have a differentiated effect. The 35–39, 40–44, 45–49, and 50–54 groups all display odds ratios below 1, whereas the older groups are not always statistically significant. Here again, cohort and selection effects should be borne in mind.

Household size is not significant in this specification either (OR = 0.990), confirming its limited explanatory role in the main models.

Table 6. Multilevel Binary Model of Access to “Master and Above”

Effects of individual and household characteristics on the probability of reaching the “Master and above” level

<i>Variable</i>	<i>Estimate</i>	<i>Odds Ratio</i>	<i>95% CI</i>	<i>Std. Error</i>	<i>z value</i>	<i>p value</i>
<i>Intercept</i>	-1.307	0.271	0.242–0.303	0.058	-22.694	<0.001
<i>Female</i>	-0.950	0.387	0.370–0.404	0.022	-42.367	<0.001
<i>Rural</i>	-0.553	0.575	0.513–0.645	0.059	-9.442	<0.001
<i>Age 35–39</i>	-0.261	0.771	0.727–0.816	0.030	-8.826	<0.001
<i>Age 40–44</i>	-0.466	0.628	0.591–0.666	0.030	-15.279	<0.001
<i>Age 45–49</i>	-0.477	0.620	0.583–0.660	0.031	-15.188	<0.001
<i>Age 50–54</i>	-0.304	0.738	0.693–0.786	0.032	-9.409	<0.001
<i>Age 55–59</i>	-0.026	0.974	0.906–1.047	0.037	-0.719	0.472
<i>Age 60–64</i>	0.070	1.072	0.984–1.168	0.044	1.595	0.111
<i>Age 65–69</i>	0.158	1.171	1.039–1.320	0.061	2.581	0.010
<i>Age 70–74</i>	0.201	1.222	1.032–1.448	0.087	2.318	0.020
<i>Age 75–79</i>	0.195	1.216	0.973–1.519	0.114	1.722	0.085
<i>Household size (standardized)</i>	-0.010	0.990	0.959–1.021	0.016	-0.648	0.517
<i>Household head: Primary education</i>	0.264	1.303	1.200–1.414	0.042	6.313	<0.001
<i>Household head: Secondary education</i>	0.618	1.855	1.740–1.979	0.033	18.812	<0.001
<i>Household head: Higher education</i>	1.176	3.240	3.044–3.450	0.032	36.804	<0.001

Source: Authors' calculations based on RGPH 2014 microdata, HCP, using R.

5.4. Complementary Robustness Analysis: A Closer Approximation to Parental Social Origin

The main models treat the household head's characteristics as indicators of the household environment observed at the time of the census. This is analytically useful, but it does not always allow the household head to be interpreted as a parent. To move closer to parental social origin, additional models were estimated on the subsample of sons and daughters of the household head aged 30 to 64.

These robustness models confirm the central role of household educational capital in both access to higher education and progression toward the Master-and-above level. They also confirm the strong penalty associated with rural residence. At the same time, the restricted sample reveals a more nuanced gender pattern: daughters appear relatively more advantaged than sons in urban settings, but this advantage is sharply reversed in rural areas by a strong negative female-by-rural interaction.

Household size also becomes more clearly negative in this subsample, suggesting that when the analysis is brought closer to the family unit, resource dilution across children becomes more visible. Full robustness results are reported in Appendix A.

Taken together, the results presented in Tables 4, 5, and 6 point to a strong conclusion: educational inequalities in Morocco do not stop at access to higher education; they also extend within higher education itself. Gender, place of residence, and above all household educational capital play a structuring role at each of these stages.

Access to higher education remains substantially lower for women, for rural residents, and especially for rural women. Within higher education, the same social gradient persists: women, rural residents, and individuals from less educated households are less likely to reach the most advanced degree levels. Educational democratization therefore does not eliminate stratification; rather, it displaces and reconfigures it within the higher education system.

6. Discussion

The results highlight a central point: educational inequalities in Morocco cannot be reduced to the simple opposition between access and non-access to higher education. Rather, they unfold at two distinct but closely related levels. The first concerns the probability of entering higher education itself; the second concerns the position occupied within higher education, between short-cycle higher education, Licence/Maîtrise, and the Master-and-above level. Both the descriptive analyses and the multilevel models therefore point to a process of double social selection: selection into higher education, followed by selection within higher education.

6.1. Access to Higher Education Remains Strongly Structured by Social Background

The first major finding of the study is the persistence of a strong effect of household educational capital. In the main access model, the educational attainment of the household head emerges as the most powerful determinant: all else being equal, living in a household whose head has a higher education diploma multiplies the odds of accessing higher education dramatically compared with living in a household whose head has no diploma. The odds ratio associated with this category reaches 159.151, compared with 5.912 for a household head with secondary education and 2.213 for one with primary education.

This result suggests that higher education remains deeply tied to the unequal distribution of

educational resources across households. Even though the census does not make it possible to measure all dimensions of social origin directly, the educational attainment of the household head provides a particularly powerful proxy for the cultural and educational capital available in the family environment. It is therefore difficult to support the idea of fully open or purely meritocratic access to higher education. On the contrary, educational trajectories appear closely linked to resources previously accumulated within the household.

The analysis restricted to sons and daughters of the household head aged 30 to 64 reinforces this interpretation. In this subsample, the coefficients associated with the educational attainment of the household head remain very large, both for access to higher education and for access to the Master and above level. The stability of these results suggests that what is being observed is not merely an effect of household context at the time of the census, but rather a deeper mechanism of family transmission of educational resources.

6.2. Gender Inequalities Persist, but They Vary Across Territories

The second major finding concerns gender. In the main models, being female significantly reduces the probability of accessing higher education and, subsequently, the probability of reaching the highest levels within higher education. In the access model, the odds ratio associated with the *Female* category is 0.419; in the ordinal model, it is 0.460; and in the binary model for access to Master and above, it is 0.387. These results indicate that female disadvantage operates both before entry into higher education and within higher education itself.

The key contribution of the access model, however, is to show that the effect of gender is not homogeneous: it depends on place of residence. The interaction term between *Female* and *Rural* is strongly negative, and the predicted-probability figure clearly shows that rural women constitute the most disadvantaged group. All else being equal, their predicted probability of accessing higher education is the lowest among the four profiles considered. By contrast, urban men occupy the most favorable position. Urban women appear more advantaged than rural men, which shows that gender inequality and territorial inequality do not overlap perfectly but instead produce differentiated configurations.

The robustness analysis on children of the household head allows this argument to be refined further. In this subsample, the coefficient associated with the *Female* category becomes positive in the access model, but the interaction with rural residence remains strongly negative. This suggests that girls may enjoy a relative advantage in urban settings, while that advantage is reversed in rural areas. This finding is especially interesting because it invites us to move beyond a uniform understanding of female disadvantage. Rather than a single gender inequality, there appear to be differentiated forms of gender inequality depending on territorial context.

6.3. Territory Does Not Matter Only for Access; It Also Structures the Internal Hierarchy of Higher Education

The third important finding is the persistence of a clear territorial effect. The descriptive analysis had already shown the strong underrepresentation of rural residents both among those who accessed higher education and among those who attained the highest degrees. The multilevel models confirm this diagnosis. In the main access model, rural residence strongly reduces the probability of entering higher education. In both the ordinal model and the binary model for Master and above, rural residence continues to have a significant negative effect.

In other words, territory does not act merely as a filter at the point of entry into higher education. It also shapes the ability to progress within higher education itself. Individuals from rural areas are not only less likely to access higher education; among those who do, they are also less likely to attain the highest degree levels. This conclusion is important because it shows that territorial inequalities are not exhausted by disparities in pre-university schooling; they extend into higher education itself.

This interpretation is reinforced by the fact that the provincial random effect remains non-zero across all models. Even after controlling for sex, place of residence, age, household size, and the educational attainment of the household head, there remains heterogeneity across provinces. This means that educational trajectories are also shaped by broader territorial contexts, such as local educational provision, proximity to institutions, local opportunity structures, social norms, and uneven institutional resources.

6.4. Higher Education as a Stratified Space Rather than a Homogeneous Category

One important contribution of the article is to show that higher education should not be treated as a homogeneous category. Both the descriptive analysis and the models reveal a clear hierarchy between short-cycle higher education, Licence/Maîtrise, and Master and above, and that this hierarchy is itself socially structured. Men, urban residents, and individuals from households with greater educational capital are more frequently found at the highest levels.

This observation has important theoretical implications. It suggests that the expansion of higher education should not be interpreted as automatic equalization of opportunities. The quantitative opening of higher education may go hand in hand with a recomposition of inequalities within higher education itself. The issue is then no longer simply whether one enters the system, but also who occupies the most valued segments within it. From this perspective, the hierarchy of higher education degrees itself becomes a space of distinction and reproduction.

The binary model for access to Master and above strengthens this interpretation. Even when the analysis focuses specifically on the top of the educational hierarchy, the effects of gender, rural residence, and the educational attainment of the household head remain very clear. This stability suggests that inequality does not disappear as educational attainment rises; rather, it shifts toward the upper segments of the educational hierarchy.

6.5. Contributions and Limitations of the Approach

One of the main contributions of this study is to examine educational inequality in Morocco through a dual lens: access to higher education and stratification within higher education itself. This perspective makes it possible to show that mechanisms of inequality do not stop at the threshold of entry. They continue within higher education, where progression toward the most advanced degree levels remains socially differentiated. The article also contributes methodologically by combining individual, household, and territorial dimensions within a multilevel framework, thereby offering a more integrated account of how educational inequality is structured.

At the same time, several limitations should be acknowledged clearly. First, the analysis is based on cross-sectional census data. This means that the study cannot reconstruct full educational trajectories over time, nor can it establish strict causal relationships between social background and educational outcomes. The results should therefore be interpreted as evidence on the social patterning of inequality rather than as proof of causal mechanisms in a strong

sense.

Second, the educational attainment of the household head, although highly informative, cannot be treated as a complete measure of family socioeconomic origin. It captures an important part of the household educational environment, but it does not fully reflect other relevant dimensions of social background, such as income, wealth, occupational position, or the broader distribution of economic and cultural resources within the family. In addition, the household head identified at the time of the census cannot always be assumed to be a parent, especially in an adult sample. For this reason, the variable is best interpreted in the main models as an indicator of the household context observed at the time of the census rather than as a perfect measure of parental social origin. The robustness analyses restricted to sons and daughters of the household head were intended precisely to address this limitation more directly.

A third limitation concerns the temporal scope of the data. The analysis relies on the 2014 General Population and Housing Census, which remains the most comprehensive nationally representative source available for studying educational inequality at this level of detail in Morocco. Nevertheless, the Moroccan higher education system may have evolved since 2014 in terms of enrollment patterns, institutional expansion, and policy reform. The findings should therefore be read as evidence on the structure of inequality at the time of the census. Even so, the mechanisms identified here—especially those related to household educational capital, territorial disparities, and gendered inequalities—remain analytically relevant for understanding the broader dynamics of higher education stratification in Morocco.

Finally, some important dimensions of educational inequality could not be measured with the desired precision. These include income, detailed parental occupation, school quality, field-of-study trajectories, and earlier transitions within the school system. The absence of such variables does not invalidate the results, but it does mean that the present analysis captures only part of the processes through which educational inequalities are produced and reproduced. Future research could use complementary data sources to investigate these mechanisms more directly and at finer levels of detail.

6.6. Overall Implications of the Findings

Taken together, the findings suggest that higher education in Morocco remains shaped by a durable combination of social reproduction, territorial inequality, and gendered differentiation. These mechanisms do not operate only at the point of entry into higher education. They continue within higher education itself, where access to the most advanced degree levels remains unequally distributed. The central implication is therefore clear: educational expansion should not be assessed solely in terms of rising participation. It must also be evaluated in terms of who gains access, under what conditions, and how far students progress once they have entered the system.

This perspective has important implications for the interpretation of higher education change in Morocco. The results suggest that massification does not necessarily imply democratization in a substantive sense. A larger higher education system may still reproduce strong inequalities if entry remains socially selective and if progression toward more advanced and more valued credentials is itself unequally distributed. In this respect, the Moroccan case illustrates a broader pattern identified in the literature on expanding higher education systems: inequalities may be displaced upward rather than eliminated.

The findings also point to several policy implications. First, reducing inequality requires more than increasing overall enrollment. It also requires reducing the territorial concentration of higher education opportunities through stronger investment in underserved areas, improved student mobility, and more balanced regional access to institutions and advanced programs. Second, students from households with limited educational resources may require more targeted support in the form of financial aid, academic guidance, and transition support between secondary and higher education. Third, the results indicate the need for interventions specifically aimed at reducing the cumulative disadvantage faced by rural women, whose educational trajectories appear particularly constrained at the point of access. Finally, policy attention should not stop at entry into higher education, since inequalities clearly persist in progression toward advanced degrees.

More broadly, the study invites a shift in perspective. If higher education is treated only as a binary threshold, an important part of educational inequality remains hidden. The results instead suggest that higher education should be understood as an internally differentiated space in which social advantage continues to shape both access and attainment. Examining internal stratification is therefore essential for any serious assessment of equality of opportunity in the Moroccan context.

7. Conclusion

This article set out to examine educational inequality in Morocco through a dual perspective: access to higher education and the internal hierarchy of higher education degrees. Drawing on microdata from the 2014 General Population and Housing Census (RGPH 2014) and using a multilevel modeling strategy, the analysis shows that educational inequalities do not stop at the threshold of higher education. They operate at two successive stages: first, in the probability of entering higher education; second, in the probability of reaching the highest degree levels once access has been achieved.

The first major finding concerns the persistent and powerful effect of household educational capital. In the main access model, the educational attainment of the household head emerges as the strongest determinant, with a very pronounced gradient between primary, secondary, and higher education. The models focusing on the internal hierarchy of higher education further confirm that household educational resources continue to shape the probability of reaching the highest degree levels. Educational reproduction therefore does not simply take the form of unequal entry into higher education; it extends into higher education itself.

The second major result concerns gender inequality. Women appear disadvantaged both in access to higher education and in access to the highest levels within higher education. However, this inequality is not uniform. The interaction between sex and place of residence shows that female disadvantage is especially pronounced in rural areas. The predicted-probability figure clearly identifies rural women as the most disadvantaged group, whereas urban men occupy the most favorable position. Gender inequalities must therefore be understood in articulation with territorial inequalities rather than in isolation.

The third major result concerns territory itself. Rural residence substantially reduces the odds of accessing higher education and continues to penalize trajectories within higher education. The observed disparities therefore cannot be reduced to simple differences in schooling before

university; they extend into the internal distribution of higher education degrees. Moreover, the presence of a non-zero provincial random effect across all models indicates that broader territorial contexts continue to shape educational trajectories even after individual- and household-level factors are taken into account.

One of the key contributions of this study is thus to show that higher education cannot be treated as a homogeneous category. The mere growth in the number of higher education graduates is not sufficient to conclude that educational democratization has been achieved. On the contrary, the findings suggest that the expansion of higher education may go hand in hand with a recomposition of inequalities within higher education itself, where the highest and most valued degrees remain more accessible to men, urban residents, and individuals from more educationally advantaged households.

The robustness analyses conducted on the subsample of sons and daughters of the household head aged 30 to 64 reinforce this interpretation. They show that the main mechanisms identified in the core models remain visible when one adopts a perspective closer to parental social origin. The educational attainment of the household head continues to exert a strong positive effect on both access to higher education and access to the Master and above level, while the combined effect of gender and territory appears even more sharply. These additional results therefore strengthen the interpretation of the findings in terms of intergenerational transmission of educational resources.

These conclusions invite a reconsideration of how educational democratization should be assessed. It is not enough to focus on rising overall participation in higher education; it is also necessary to examine who enters higher education, under what conditions, and how far individuals progress within the degree hierarchy. From this perspective, the results suggest that public policies aimed at reducing educational inequalities cannot be limited to broadening access alone. They must also address territorial disparities, gender inequalities in rural areas, and the intergenerational transmission of educational capital.

The study naturally has certain limitations. The census is a cross-sectional source and does not make it possible to reconstruct complete educational trajectories or identify strict causal relationships. Likewise, in the main models, the characteristics of the household head should be interpreted as indicators of the household context observed at the time of the census, rather than as a perfect measure of parental social origin. The complementary analyses on the children of the household head were intended precisely to address this limitation in part.

Overall, the article shows that educational inequalities in Morocco take the form of both inequalities of access and inequalities of position. Higher education thus appears as a space where educational expansion and social reproduction operate simultaneously. One promising avenue for future research would be to investigate territorial disparities at finer spatial scales, to incorporate additional dimensions of social origin when data permit, and to compare census-based findings with other sources in order to shed further light on the contemporary mechanisms of educational stratification in Morocco.

Appendix . Robustness Tables

For readability, the full robustness models are reported in this appendix. The main text summarizes their substantive implications.

Table A1. Robustness Model for Sons and Daughters of the Household Head: Access to Higher Education

Effects of individual and household characteristics on the probability of accessing higher education among sons and daughters of the household head aged 30 to 64.

Variable	Estimate	Odds Ratio	95% CI	Std. Error	z value	p value
Intercept	-2.438	0.086	0.079–0.096	0.0490	-49.532	<0.001
Female	0.327	1.387	1.321–1.456	0.025	13.255	<0.001
Rural	-1.090	0.336	0.309–0.365	0.043	-25.645	<0.001
Age 35–39	-0.071	0.932	0.883–0.983	0.027	-2.573	0.010
Age 40–44	-0.133	0.876	0.817–0.939	0.035	-3.748	<0.001
Age 45–49	-0.074	0.928	0.844–1.021	0.049	-1.527	0.127
Age 50–54	-0.282	0.755	0.649–0.877	0.077	-3.679	<0.001
Age 55–59	-0.631	0.532	0.394–0.719	0.153	-4.112	<0.001
Age 60–64	-1.597	0.203	0.081–0.507	0.468	-3.413	<0.001
Household size (standardized)	-0.238	0.788	0.768–0.808	0.013	-18.265	<0.001
Household head: Primary education	0.657	1.929	1.781–2.089	0.041	16.160	<0.001
Household head: Secondary education	1.429	4.174	3.847–4.528	0.042	34.358	<0.001
Household head: Higher education	3.121	22.675	17.862–28.786	0.122	25.640	<0.001
Female × Rural	-1.252	0.286	0.241–0.340	0.088	-14.252	<0.001

Source: Authors' calculations based on RGPH 2014 microdata, HCP, using R.

Table A2. Robustness Model for Sons and Daughters of the Household Head: Access to “Master and Above”

Effects of individual and household characteristics on the probability of reaching the “Master and above” level among sons and daughters of the household head aged 30 to 64.

Variable	Estimate	Odds Ratio	95% CI	Std. Error	z value	p value
Intercept	-1.214	0.297	0.261–0.338	0.067	-18.208	<0.001
Female	-0.559	0.572	0.514–0.637	0.055	-10.215	<0.001
Rural	-0.755	0.470	0.372–0.594	0.119	-6.331	<0.001
Age 35–39	-0.263	0.769	0.678–0.872	0.064	-4.109	<0.001
Age 40–44	-0.390	0.677	0.572–0.802	0.086	-4.510	<0.001
Age 45–49	-0.523	0.592	0.463–0.757	0.125	-4.177	<0.001
Age 50–54	-0.541	0.582	0.391–0.866	0.202	-2.672	0.008
Age 55–59	0.307	1.360	0.706–2.619	0.334	0.920	0.358
Age 60–64	0.547	1.727	0.282–10.592	0.925	0.591	0.555
Household size (standardized)	-0.103	0.902	0.847–0.960	0.032	-3.220	0.001
Household head: Primary education	0.660	1.935	1.647–2.273	0.082	8.034	<0.001
Household head: Secondary education	1.330	3.780	3.265–4.376	0.075	17.801	<0.001
Household head: Higher education	1.768	5.862	4.476–7.676	0.138	12.855	<0.001

Source: Authors' calculations based on RGPH 2014 microdata, HCP, using R.

References

- Boudon, R. (1974). *Education, opportunity, and social inequality: Changing prospects in Western society*. New York: Wiley.
- Bourdieu, P., & Passeron, J.-C. (1977). *Reproduction in education, society and culture*. London: Sage.
- El-Deghaidy, H., et al. (2025). Mapping STEM gender disparities: A scoping review of the MENA region. *Discover Education*, 4, Article 149.
- Fitzgerald, A., et al. (2025). Exploring the factors informing educational inequality in higher education: A systematic literature review. *International Journal of Inclusive Education*.
- Haas, C., & Hadjar, A. (2024). Social inequalities in study trajectories: A comparison of the United States and Germany. *Sociology*.
- Lucas, S. R. (2001). Effectively maintained inequality: Education transitions, track mobility, and social background effects. *American Journal of Sociology*, 106(6), 1642–1690.
- Mare, R. D. (1981). Change and stability in educational stratification. *American Sociological Review*, 46(1), 72–87.
- OECD. (2024). *Education at a glance 2024*. Paris: OECD Publishing.
- Raftery, A. E., & Hout, M. (1993). Maximally maintained inequality: Expansion, reform, and opportunity in Irish education, 1921–1975. *Sociology of Education*, 66(1), 41–62.
- Shavit, Y., & Blossfeld, H.-P. (Eds.). (1993). *Persistent inequality: Changing educational attainment in thirteen countries*. Boulder, CO: Westview Press.
- Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling* (2nd ed.). London: Sage.
- Symonds, J. E., et al. (2025). A meta-review of research on educational inequality and socioeconomic disadvantage. *Education Sciences*, 15(6), 740.
- UNESCO IESALC. (2025). *Higher education global trends report: Towards inclusive, equitable and quality higher education*. Paris: UNESCO IESALC.
- World Bank. (2023). *Morocco accelerating the transformation of higher education and scientific research operation*. Washington, DC: World Bank.
- Zahl-Thanem, A., et al. (2024). Spatial inequality in higher education: A growing urban-rural educational gap. *European Sociological Review*, 40(6), 1067–1085.