

SUMMARY

ANALYSIS OF ECONOMIC IMPACT OF INEQUALITY AND DISCRIMINATION

BETWEEN SPANISH NATIONALS AND FOREIGNERS RESIDING IN SPAIN



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Presentation

It is my pleasure to present the report “Analysis of economic impact of inequality and discrimination between Spanish nationals and foreigners in Spain” prepared by Professors Ramón Mahía Casado and Eva Medina Moral of the Autonomous University of Madrid and co-financed by the European Union through the Asylum, Migration and Integration Fund (AMIF). The study, promoted by the Secretary of State for Migration and coordinated through the Spanish Observatory on Racism and Xenophobia (OBERAXE), responds to the need to assess the degree of discrimination against immigrants proposed in the “2023-2027 Strategic Framework for Citizenship and Inclusion, against Racism and Xenophobia”.

We know that discrimination undermines the basic principles on which today’s European societies are built, as it denies the fundamental rights and freedoms to which all people are entitled on equal terms. The fight against discrimination is therefore an imperative for public authorities and for society in general in order to fully ensure citizen’s rights.

Inequality and discrimination, in addition to being moral and ethical issues, have a negative effect on a country’s economy, wealth and income. It thus becomes necessary to understand their true extent in order to be able to fight them. This is the purposes for which the proposal for measuring the cost of discrimination presented here was born.

The aim is to determine the magnitude and extent of the discrimination suffered by foreigners in Spain caused simply because their status as foreigners. For this purpose, we have looked at the factors that give rise to inequality in employment and education between Spanish nationals and foreigners, trying to find the differences that cannot be explained by the characteristics of both groups and that are attributable to discrimination due to being foreign. This discrimination is then quantified and evaluated in economic terms by translating it into a numerical value.

Thus, this proposal for measuring the cost of discrimination takes the form of a summary report that attempts to synthesise the findings obtained and, at the same time, to present the technical explanations of the calculations made in an accessible way; and a full that describes the calculations in detail and a more nuanced and explained presentation of the results.

I would like to thank the authors for their commitment to making a complex issue such as discrimination accessible to a wide audience by means of an unprecedented approach: translating the extent of discrimination against foreigners in Spain into economic terms.

I hope that this paper will be useful to all those interested in understanding the extent of discrimination, and that it will help to understand what a serious obstacle it is to achieve an inclusive, diverse and just society.

Pilar Cancela Rodríguez
Secretariat of State for Migration



I. INTRODUCTION AND METHODOLOGY

The fight against discrimination is, first and foremost, an ethical and moral imperative, but at the same time it is also a smart decision from a strictly economic point of view. While the immediate damage of racism and xenophobia is undoubtedly suffered by its victims and their communities, discrimination has a great cost on the entire economy, reducing the wealth and incomes of millions of people, including those who are not usually considered victims.

This document summarizes a broader study¹, which attempted to carry out an approximate estimation of the aggregate economic valuation of discrimination against the foreign population with respect to Spanish nationals (as defined below) in two main areas: education and employment. For this purpose, first the extent of *discrimination* was determined and, in second place, the impact of this discrimination was assessed in economic terms.

Academic works and descriptive reports on the discrimination of the immigrant population in the Spanish labour market date back even to times when coming to work in Spain was only an emerging phenomenon in our country and was still far from reaching the magnitude it represents today².

When comparing the integration and achievements of foreigners³ and Spanish nationals in their educational journeys and in the labour market, significant differences can be observed: different rates of school enrolment, school success, activity, unemployment, salary ranges, etc. However, these differences cannot be considered to be entirely due to explicit, open and conscious discrimination against foreigners in their schools or workplaces. Part of the educational or employment differences observed between the two populations, as is the case with the differences among Spanish nationals and among foreigners, is due to the heterogeneity of the groups being compared.

In this study, we will define “discrimination” as those differences observed between foreigners and Spanish nationals that cannot be explained by the different characteristics of the two groups. Measuring *discrimination* therefore implies stopping to analyse the causes of these observable differences, trying to separate the relevance of an individual’s nationality from other characteristics associated with their origin or nationality.

1. Mahía, R. and Medina, E. (2024). *Análisis del impacto económico de la discriminación y la desigualdad entre la población autóctona y la extranjera residente en España*. Spanish Observatory on Racism and Xenophobia - OBERAXE.


2. A brief review of the most relevant literature can be found in the detailed report. Mahía, R. and Medina, E. (2024). *Análisis del impacto económico de la discriminación y la desigualdad entre la población autóctona y la extranjera residente en España*. Spanish Observatory on Racism and Xenophobia - OBERAXE.

3. For the purposes of this report, foreigners are considered to be those born abroad (regardless of their current nationality) as well as those born in Spain but with foreign dual citizenship. For more information, see Mahía, R. and Medina, E. (2024). *Análisis del impacto económico de la discriminación y la desigualdad entre la población autóctona y la extranjera residente en España*. Spanish Observatory on Racism and Xenophobia - OBERAXE.

To assess the degree of this *discrimination*, we will use statistical procedures based on data from secondary sources; **we will use the term *discrimination*, in italics, to refer to this essentially technical measurement and not to the broader, qualitative and multidimensional concept of discrimination itself.**

The financial assessments carried out by this study rely, in all cases, on the quantification of the value of wages lost due to *discrimination*. Thus, for example, higher foreign unemployment associated with *discrimination* is valued by the wage remuneration not received by unemployed persons who are discriminated against; lower rates of access to university studies are assessed from a financial point of view by the wage increases not received by foreigners who do not access higher education after high school; over-qualification is assessed from a financial point of view by the wage increases that over-qualified workers fail to receive. This simple approach is not without unchallenged, and here we will discuss its many nuances and limitations, but it is an innovative exercise which, for the first time, can be used to quantify, albeit still in a preliminary and tentative way, the economic value of the imperfect integration of foreigners in the Spanish educational and labour market.

It is our intention that this first exercise will promote more detailed studies that address the nuances beyond the scope of this informative report, thus opening up a line of academic research that will consolidate attention to the economic dimension of *discrimination* against the foreign population.



II. QUANTIFICATION AND ECONOMIC ASSESSMENT OF EMPLOYMENT DISCRIMINATION AGAINST FOREIGNERS: OUTCOME SUMMARY

II.1. Workforce participation rate

There is a general belief that the rate of foreigners in the workforce is, in general, higher than for Spanish nationals, which is justified by their higher overall presence in the workforce. It is true that the aggregate rate of presence in the workforce is much higher among the foreign population; the LFS (Labour Force Survey) sub-sample data for 2022 indicate a rate of 56% for Spanish nationals while the rate for foreigners is 71%, i.e. almost 15 points higher. Is there really a greater probability to be in the workforce among the foreign population after the heterogeneity of ages, as well as other characteristics that differentiate the two groups (gender, for example) are considered? Using the LFS Sub-Sample⁴ (hereafter SubLFS) corresponding to the fourth quarter of 2022, a regression analysis has been conducted to determine the higher or lower probability of “being in the workforce”. The regression on activity is estimated in the form of a Linear Probability Model (LPM) to approximate a direct estimate of the average difference in the probability of “being in the workforce” between the foreign and the Spanish national population. The variable “foreigner” is controlled by including gender, autonomous community of residence, age in 5-year intervals, level of education, age at which the highest level of education was achieved, marital status and whether the individual is currently in formal education.

This multivariate regression analysis indicates that the aggregate rates of inclusion in the workforce, after controlling for all differences between Spanish nationals and foreigners, are practically equal between the two groups: the gross difference of 14.4 points is reduced to only 1.1%, which proves that *discrimination*, if it exists, is very low.

4. The analysis of discrimination in the field of employment has been carried out using data from the LFS Sub-sample (by the Spanish National Statistics Institute, hereinafter INE, as per its Spanish acronym) for 2022 as well as the Wage by Deciles (INE) available for this sub-sample.

Moreover, if, in a second version of this regression analysis, the interaction between the “foreigner” variable and the gender variable is considered to differentiate the analysis between foreign men and women, this parameter of possible *discrimination* shows a negative difference in the rate of inclusion in the workforce of foreign women of 2.3 percentage points over the population of potentially active foreign women.

In terms of economic valuation of this *discrimination*, we can make a very simplified calculation to understand its magnitude. **This *discrimination* of 2.3% means about 83,000 fewer foreign women in the workforce, apparently “excluded” from the labour market because they are not even included “in the workforce”.** Assuming that these women access the workforce in the same average proportion as the foreign female workforce (78.9% employment rate over the Population Potentially in the Workforce), this would be equivalent to 65,500 foreign female workers who are currently excluded from activity in the labour market. **Considering the overall average wage of female foreign workers in 2022 as per the SubEPA Wage by Deciles, this would amount to about 1.2 billion euros less per year in wage compensation for foreign women excluded from the labour market, i.e. about 0.09% of GDP.**

II.2. Unemployment

A second regression analysis was carried out to determine the greater or lesser probability of unemployment of the foreign population with respect to Spanish nationals and its economic valuation.

The simple difference in the unemployment rate between foreigners and Spanish nationals was 6.6% at the end of 2022 (18.2% vs. 11.6%). As previously explained, this difference need not be considered *discrimination* as it may be due to differences in certain variables such as the autonomous community of residence, gender, level of education or age.

After controlling for the effect of all these covariates, the additional probability of being unemployed decreases slightly among foreigners from 6.6% to 5.0% (95% confidence interval from 4.4% to 6%). **This difference amounts to around 248,000 unemployed persons** that could be explained by *discrimination* of the foreign population with respect to Spanish nationals of the same characteristics (at least those controlled by the covariates added in the analysis). In terms of economic valuation of this *discrimination*, we can make a very simplified calculation to understand its magnitude. Taking the average wage of foreigners (determined by the SubEPA in 2022), **the gross annual wage remuneration associated with these workers excluded from the labour market would amount to about 5.1 billion euros, or roughly 0.38% of GDP.**

II.3. Part time employment

Beyond the exclusion associated with unemployment, **discrimination can manifest itself in the lower quality of jobs held by foreigners.** One of the most relevant indicators in terms of quality of employment and with the greatest potential economic impact is the prevalence of part-time employment. The proportion of part-time contracts of the foreign population is 16%, 2.8 percentage points higher than that of Spanish nationals.

The regression analysis for part time employment contracts is again estimated in the form of a Linear Probability Model (LPM) including as covariates the same as those used for unemployment, and also adding other variables that could be relevant in this case. The regression indicates that, after controlling for the aforementioned covariates, there is no higher probability of having part time employment contracts due to being a foreigner; moreover, the corrected probability of having a part time employment is 3.1% lower for foreigners. **In this case, therefore, it is not possible to speak of *discrimination* against foreigners.**

II.4. Overqualification

Over-qualification is perhaps one of the indicators where the deficit in integration in the labour market for foreigners is most evident. Three indicators of over-qualification have been developed on the basis of LFS micro-data. The first one identifies *workers with Higher Education and moderate over qualification*, the second one identifies *workers with Higher Education and high overqualification* and the third one identifies *workers with Secondary Education and Moderate overqualification*.

We have estimated the differential probability of *moderate overqualification for workers with Higher Education* using also a Linear Probability Model (LPM). Once the control variables are added in the regression, the difference in over-qualification that remains unexplained and can therefore be associated with *discrimination* against foreign workers remains at very high values, namely 15%.

In terms of economic impact, considering that, out of all foreign workers, 1,186,867 have higher education, **this 15% difference implies that approximately 178,000 workers with higher education are overqualified** (according to the first indicator). By comparing the average gross wage of foreign tertiary graduates without over-qualification with that of foreign tertiary-educated over-qualified persons, we can estimate the wage loss due to employment that does not correspond to the qualification category. **The annual economic value of this *discrimination* would amount to about 2.8 billion euros, i.e. 0.21% of GDP in terms of wage loss due to moderate overqualification in the case of foreigners with higher education.**

We can complete this section by also analysing *moderate over-qualification of workers with secondary education* using the same approach. After running the regression to filter out the effect of other variables, and using a model identical to the one described for higher education, the part of the over-qualification not explained by the model and which can therefore be attributed to *discrimination* associated with origin or nationality remains at around 11%. Given that there are about 2.3 million employed foreigners with secondary education, **this 11% represents an unexplained over-qualification integration deficit affecting about 255,000 workers.** Comparing wage estimates for workers with secondary education who are not overqualified with those who are, **the calculations yield an economic valuation of the unexplained overqualification of about 900 million euros or 0.07% of GDP.**

II.5. Wages

Salaries are of the most frequently analysed variables when determining the integration of certain groups in the labour market.

The gross wage differential between foreigners and Spanish nationals amounts to 23 %, i.e. around €500 gross per month. The wage gap is also, as we already know, a gender issue both for Spanish female workers (15% decrease compared to Spanish male workers) and among foreign female workers (19% decrease compared to foreign male workers). This explains why the average wage gap of 23% is even higher (25%) when comparing female foreign workers with female Spanish workers.

In order to analyse how much of the wage differentials can be explained by the characteristics of employed wage earners, beyond their nationality or origin, first a regression analysis for wages is carried out including as explanatory variables all those allowed by the LFS sub-sample.

The regression manages to explain 83% of the wage differences observed by associating the origin/nationality of workers with a percentage difference of 2.2% in wages, which, when applied to the average wage of Spanish nationals, represents an average aggregate monetary difference of around €48 in favour of Spanish wage earners. This difference, although small at the individual level, is statistically significant and represents an important average aggregate economic value, while the employed foreign population at the end of 2022 attained 3.9 million. **The aggregate computation of annual salary *discrimination* for the entire employed foreign population amounts to 2.2 billion in loss of direct wages, which represents 0.17% of GDP.**

The same wage differential analysis has been carried out using a well-known technique called Oaxaca - Blinder. This methodology is based on decomposing the observed differences in average wages into two components, the first one that is "explained" by the observed differences in the variables by which productivity is measured (education, age, work experience, industry, etc.) and a residual part that cannot be explained by these differences in wage determinants. This "unexplained" part is used to measure *discrimination*.

The effects estimated with the Oaxaca - Blinder model are similar to those obtained using the standard regression procedure (-2.2% to the detriment of foreigners), so the results obtained in terms of economic impact assessment would also be similar.

A photograph of a classroom desk. In the foreground, there are three backpacks: a red one on the left, a blue one in the center, and a black one on the right. To the left of the backpacks are several pencil holders filled with colorful pencils and pens, a small globe, and a blue notebook. To the right, there is a stack of books and more school supplies. In the background, a chalkboard is visible with various school-related icons drawn on it. The scene is lit with soft, natural light, creating a clean and organized educational environment.

III. QUANTIFICATION AND ECONOMIC ASSESSMENT OF EDUCATIONAL DISCRIMINATION OF FOREIGNERS

We understand that discrimination within the education system occurs when the education system is not able to provide equal opportunities to its students. These opportunities are related, on the one hand, to access to quality education for all students and, on the other hand, to a system that allows academic results to depend on their capability and effort, and not on circumstances defined by the social, economic, national and/or cultural origin of students.

The existence of such discrimination in education systems means a **loss of opportunities for students who are discriminated against, which translates into decreased access to the labour market or, at best, access under worse conditions**. This cost, both social and economic, has repercussions not only at the micro level for the person concerned, but also at the macro level for society as a whole. In this sense, quantifying this cost provides useful data to guide public policies.

In this section, an economic quantification of *discrimination* against foreign students in the Spanish education system is carried out. In order to do so: 1) any difference in educational indicators between foreign and Spanish students that cannot be explained by observable differences between the subjects can be attributed to exclusion or marginalisation on the basis of origin and will represent a quantification of *discrimination*; 2) the economic cost of this *discrimination* will be estimated based on the value of lost wages as a result of foreigners' access to the labour market under worse conditions than Spanish students.

Different types of discrimination are distinguished according to the point in the educational process at which discrimination can occur⁵:

- **Discrimination in access:** the type of discrimination which occurs before entering the education system and is associated with lower enrolment rates among young foreigners;

5. Details of the various data sources used for each of the indicators used in this section can be found in the long report. Mahía, R. and Medina, E. (2024). *Análisis del impacto económico de la discriminación y la desigualdad entre la población autóctona y la extranjera residente en España*. Spanish Observatory on Racism and Xenophobia- OBERAXE.

- **Discrimination in the classroom: the type of discrimination which happens in the education centres**, which translates into poorer academic results and higher drop-out rates for foreign students;
- **Educational discrimination: the type of discrimination that can be observed at the end of the educational process** and which is reflected in a lower level of education attained by the foreign adult population.

Bearing in mind that discrimination at the end of the educational process is the result of discrimination exists before and during the educational process, the following should be true:

$$\text{EDUCATIONAL DISCRIMINATION} = \text{DISCRIMINATION IN ACCESS} + \text{DISCRIMINATION IN THE CLASSROOM}$$

III.1. Discrimination in access to education

The population's access to the education system is measured by the enrolment rate, which is defined as the proportion of the population enrolled in school in relation to the school-age population. **In the 2022-2023 school year, the gross enrolment rate is 17 percentage points higher among Spanish students (71%) than among foreign students (54%). This means that there are approximately 222,539⁶ foreign children and young persons who have not had equal access to the education system as Spanish national counterparts.**

However, the results are not homogeneous when disaggregated by educational level. Focusing the analysis on the non-compulsory stages, **the gap, calculated as the difference between the enrolment rate of students of national and foreign origin, is positive in *Bachillerato* (ages 16-18) (18%) and Higher Education (ages +18), both in Higher Vocational Training courses (4%) and university studies (17%), and negative in Basic Vocational Training courses (-6%) and Intermediate Vocational Training courses (-3%).** That is to say, once the compulsory educational stage (up to age 16) has been completed, foreign students enter Vocational Training courses to a greater extent than Spanish students (especially Basic Vocational Training, where the enrolment rate of foreign students doubles that of Spanish students). A more practical and more employability-oriented training in Vocational Training courses could explain these differences. In addition, this group does not tend to further their education with more advanced studies, again registering lower enrolment rates than those of Spanish nationals, around half, both in higher vocational training and in university education.

The calculated gaps may be biased by not taking into account certain characteristics of the foreign population in their calculation. Firstly, it should be noted that **the enrolment rate are different by gender, being higher for women, partly due to better academic results and lower early school drop-out rates.** Bearing in mind that there are differences in population structures by gender between the Spanish and foreign population (the weight of females in the population aged 16 and 17 is somewhat lower in the foreign population (46%) than in the Spanish population

6. This figure is obtained by multiplying the calculated gap (17 percentage points) by the foreign population aged 0-29.

(49%)), the gap in the school enrolment rate could be different from that calculated if we were to look at a breakdown by gender.

Moreover, the definition of foreigner used by the Ministry of Education and Vocational Training and the Ministry of Universities has certain limitations, such as considering as foreigner only students who do not hold Spanish citizenship⁷, or not having details of the foreigner's country of origin, when it is clear that discrimination does not affect foreign students of different origins in the same way.

Finally, it is important to bear in mind that the existence of school segregation could also be influencing school enrolment rates, to the extent that **excessive segregation in certain schools can be detrimental to educational performance, leading to higher student failure and drop-out rates as well as lower continuation rates**. Given that the data confirm that there is a higher presence of foreign students in public schools than in private schools, the public-private school distribution also becomes a relevant factor.

In order for the enrolment rate to take into account these three impacts (gender, origin and school segregation), disaggregated information would be required by crossing these three variables with the two previous variables (origin and educational level). While the data from the Ministry of Education and Vocational Training and the Ministry of Universities allow cross-referencing of up to three of these variables, it is not possible to cross-reference all five variables at the same time. To overcome this limitation, a linear regression analysis has been carried out to allow these factors to be taken into account in the calculations of the gross enrolment ratio at each educational stage.

New calculations of **the gross enrolment ratio show results in line with a more unfavourable situation for foreign students. Specifically, the greatest impairment is registered in *Bachillerato* where the gap between Spanish and foreign students now stands at 24.9% (vs. 18%)**. At higher levels of education there has also been an impairment, although to a lesser extent, with a gap of 4.3% and 18.5% for higher vocational education and training and university studies respectively (vs. 4 and 17).

Multiplying the new gaps obtained for the foreign population in the age brackets of each educational stage, **it is estimated that 20,660 foreigners would not access educational stages higher than the obligatory secondary education (ESO as per its Spanish acronym) due to the barriers they encounter as foreigners. At the Higher Vocational Training and university levels, the new calculations imply that 227,231 young foreigners would not have access to these studies (43,229 and 184,002 respectively) as they would not have the same opportunities as their Spanish counterparts**.

In order to have an approximation of the economic value of this *discrimination*, the salary that persons with this profile will fail to receive when they enter the labour market, because they have not been able to reach a level of studies equivalent to what they would have achieved with equal opportunities as Spanish students, is used as measurement unit. Thus, **the 20,660 young persons that do not access *Bachillerato* would have a monthly wage loss of 482 euros, while this loss would amount to 1,193 and 1,204 euros in the case of students who do not access a higher level of vocational training or university studies respectively. The aggregate annual value of these wage losses amounts to 3,398 million euros foregone in wage compensation, i.e. about 0.25% of GDP**.

7. According to this definition, students holding Spanish nationality, and/or with dual nationality, but of foreign origin or with foreign parents are not considered foreigners.

III.2. Discrimination in the classroom

Those foreign students who do manage to access to the education system are still, in many cases, not on an equal footing with their Spanish counterparts. In this section we carry out an exercise to quantify *discrimination* in the classroom by first checking the existence of such *discrimination* and then trying to approximate its monetary value.

Is there discrimination in the classroom towards foreign students?

A number of studies have analysed the causes of poorer school performance among foreign students⁸, including a family environment characterised by lower economic and socio-cultural resources. However, it seems that even when this differential factor is taken into account, academic performance is still lower, which could be associated with the existence of *discrimination* in the classroom.

In order to analyse the existence of such *discrimination*, the differences in the academic performance of foreigners and Spanish nationals are analysed using two indicators: *the score obtained in the competencies measured in the PISA survey* and *the degree of grade repetition*. In order to control, in the calculation of these differences, the impact that other variables may have on academic performance, a linear regression analysis is carried out using the student's origin as the explanatory variable of interest, whose parameter will quantify *discrimination* in the classroom, and all other variables that may also have an impact on academic performance as control variables.

The results allow us to conclude that **there is discrimination in the classroom, with foreign students obtaining lower scores and higher repetition rates than Spanish students**, even when controlling for the socio-economic and cultural background of the family, the gender of the student and the level of bullying to which the student is exposed. **However, this discrimination only exists for foreign students born outside Spain, but not for Spanish-born students with foreign parents**, in which case the level of rooting of the person acts as a protective factor.

It is also important to note that, while the socio-economic and cultural level of the household is the most influential variable in determining students' acquisition of competences, **in relation to the degree of grade repetition, the level of bullying to which students are exposed is the most relevant variable, and its negative influence on the learning process is even greater than the impact of the socio-economic environment of the household.**

Due to the important role that exposure to bullying plays in the learning process, it may also be interesting to analyse whether foreign students are exposed to bullying to a greater extent than Spanish nationals. For this purpose, we have carried out a linear regression in which two alternative endogenous variables are used to analyse whether foreign students develop their activity in a worse school climate than Spanish students: *situations of bullying to which the student is exposed*; and the *feeling of belonging and degree of acceptance in the school*. The explanatory variable of interest is the student's origin and the control variables are those used in the previous regression analysis.

8. The PISA data allows to distinguish two categories of foreigners: foreign students born outside Spain and students born in Spain but of foreign parents

The results obtained show that **foreign students are exposed to a higher level of bullying and a lower degree of acceptance at school than Spanish students**, even when controlling for socio-economic and cultural level of the household to which they belong, the student's gender and academic performance. **This effect is identified in both Spanish-born students with foreign parents and foreign-born students, although it is more intense in the latter group.** Furthermore, it is important to mention that the student's origin is the most relevant factor, together with *the assessment of competences*, to explain the *feeling of belonging and level of acceptance in the school*.

Estimating the economic value of discrimination in the classroom through drop-out risk

The results obtained in the previous section highlight the difficulties faced by foreign students in the classroom. Thus, the existence of *discrimination* in the classroom, which leads to poorer academic results, together with greater exposure of foreign students to bullying and a lower sense of belonging to their schools and lower levels of acceptance by their peers and teachers, results in higher drop-out rates among this group. Under this premise, **calculating the differences between the drop-out rates of foreign and Spanish students could be used to measure *discrimination* in the classroom.**

The PISA data include several questions on the expectation of completion of different educational stages from which we can construct a 'drop-out' index with which to assess differences in the risk of foreign and Spanish students dropping out of school. To quantify how being a foreigner **influences** each of these drop-out rates, a linear regression is performed using the *origin* of the students as an explanatory variable, whose parameter, which quantifies *discrimination* in the classroom, measures how many percentage points the probability of dropping out varies as a result of being a foreign student instead of a Spanish student.

In all cases it is found that having foreign parents influences the likelihood of continuing studies, although not always in the same direction. Specifically, **in Vocational Training courses (both Basic and Intermediate and Higher Level), foreign students have a higher probability of continuing their studies than Spanish national students (almost 10 percentage points in the case of national students with foreign parents and around 15 percentage points in the case of foreign students).**

Given that the modelled variable measures an expectation (the student's belief as to whether or not they will complete their studies), the result could be explained by a better academic performance of foreign students compared to Spanish students in Vocational Training, which could indicate a presence of foreign students in Vocational Training courses who could also have successfully completed other types of studies.

In all other educational levels, the risk of dropping out is higher among students with foreign parents, although differences are detected depending on whether they were born in Spain or not. Thus, that foreigners are more likely than Spanish nationals to drop out of compulsory secondary education is only true for foreign-born students and not for Spanish-born students with foreign parents. The opposite is true at university, with a higher probability of dropping out compared to Spanish students only in the case of Spanish-born students with foreign parents, and not in the case of foreign students. Finally, in *Bachillerato*, the probability of dropping out is higher than that of Spanish students in both groups (Spanish-born students with foreign parents and foreign-born students) and the amount of the difference is similar (around 4 percentage points in each case).

The product of the percentage points that the probability of dropping out as a foreign student increase by the number of foreign students will result in how many will drop out. Thus, **out of the 240,156 foreign students enrolled in compulsory secondary education, there will be 4.150 who will not complete their studies because of their origin. Similarly, 3,596 of the foreign students enrolled in *Bachillerato* and 5,163 of the university students will not finish their studies due to discrimination in the classroom.** In order to quantify the economic cost of the higher early drop-out rates to which foreign students are exposed as a result of discrimination in the classroom, the number of foreign students who drop out at different stages of their studies is multiplied by the loss of wages that these young people will lose when they enter the labour market. **The result is an economic value of discrimination in the classroom of 102 million euros, or 0.01% of GDP.**

III.3. Educational discrimination

All other things being equal, the educational attainment levels of foreign and Spanish national adults should be similar. However, the data show that this is not the case and that, after passing through the education system, the foreign population is at a disadvantage when it comes to accessing the labour market. In this section we try to measure educational *discrimination* from this perspective, using data from the Labour Force Survey Subsample (2022).

For this purpose, several linear regressions are performed using the *maximum educational level achieved by the respondent* as the variable to be modelled and the *respondent's origin* as the explanatory variable. The estimated parameter for the *origin* variable will quantify the difference between the percentage of the Spanish national and foreign adult population that has reached a certain educational level, so that a positive sign will indicate a higher relative presence of foreigners at that educational level, while the opposite would be a negative sign. Control variables are included to incorporate factors other than origin in the calculation. Furthermore, given that the age distribution of the Spanish national population is different from that of the foreign population, the analysis is broken down by age bracket.

The results confirm the existence of educational *discrimination* in practically all age brackets and educational levels, with a lower relative presence of foreign students at the highest educational levels and a higher presence at the lowest levels, except in Basic Vocational Training and Intermediate Vocational Training. Since the data refer to the maximum level of education achieved and not to the maximum level of enrolment, this result could be due to the fact that the educational goal of foreign students, in the vocational orientation branch, is at a higher level than that of Spanish students entering this same branch.

Although the statistical significance obtained in the parameter estimates allows us to confirm the existence of educational *discrimination* towards the foreign population, the quantification of this discrimination does not allow to use the data to transform its value into a monetary amount. To do this, we would need to know both the actual wage associated with the level of education achieved and the wage that could have been attained if the studies had been continued. However, since the modelled variable compares the population that has attained an educational level with the rest of the population, regardless of the level attained, there is no information on the potential educational goal. To solve this problem, four new variables have been constructed to compare each level of education with the one immediately following it.

Modelling these variables, using the *respondent's origin* as the explanatory variable of interest and including the control variables discussed above, allows us to estimate new parameters for the

person's origin from which to obtain a new measure of educational *discrimination*. In this case, the estimated parameter measures the difference between the percentage of the foreign and national population that reached the lowest educational level in each of the comparison pairs, so that a positive sign in the estimated parameter, together with its statistical significance, will indicate the existence of *discrimination* towards the foreign population.

The results confirm that, **when comparing the population that reached compulsory secondary education with the population that finished *Bachillerato*, there is educational *discrimination* towards the foreign population only in the 16–24 age group**, where a positive (12%) and statistically significant difference was obtained. **In the comparison between the population with studies up to compulsory secondary education and those who have achieved a Basic or Intermediate Vocational Training course at most, *discrimination* occurs in all age groups and is greater in the older age groups.** The same is true when comparing the population with a high school education and those who managed to complete higher education. In this case, *discrimination* in the 16–24 age group (8%) is three times lower than that estimated for the 35–44 age group. However, the opposite is true **when comparing those who obtained at most a Basic or Intermediate Vocational Training course with those who completed higher education.** In this case, **in the higher age groups, 35 years and older, no *discrimination* was recorded. However, among the youngest (16–24-year-olds), estimated *discrimination* is more than double that of the next age group (12% vs. 5%).**

Finally, applying the same methodology as in the previous sections, in order to transform the value of the estimated *discrimination* into a monetary amount, the number of foreign students who could have reached a higher level of education on equal terms with Spanish students is calculated. Multiplying this value by the difference between the average wage associated with the level reached and that corresponding to the next educational stage, we obtain an estimate of the monetary cost of educational *discrimination* at each educational stage and in each age bracket.

The total annual cost of educational *discrimination* obtained amounts to 4,838 million euros (or 0.36% of GDP). In terms of educational levels, **80% of the total cost is due to the difference in the transition from *Bachillerato* to higher education**, where the percentage of the foreign population that does not further their education is significantly higher than that of the Spanish national population. **The weight of *discrimination* in the transition from compulsory secondary education to Basic and Intermediate Vocational Training is 17%**, being around 1.5% in each of the other two cases analysed (ESO versus *Bachillerato*; and Basic and Intermediate Vocational Training versus higher education).

By age bracket, the weight of *discrimination* tends to increase with age, accounting for 43% in the 45–64 age group, 39% in the 35–44 age group, 14% in the 25–34 age group and 4% in the youngest age group, **which is positive as it indicates a downward trend in the evolution of educational *discrimination*.**

Finally, it is interesting to remember that: 1) educational *discrimination* (estimated at 4,838 million euros) can be calculated by adding together *discrimination* in access (estimated at 3,398 million euros) and *discrimination* in the classroom (estimated at 102 million euros); 2) the estimate of *discrimination* in the classroom is based on the calculation of drop-out rates constructed on the basis of the expectations of 15-year-olds, which could imply a downward bias in the calculated value insofar as it is foreseeable that these expectations tend to be optimistic. Taking both aspects into account, by differentiating between *discrimination* in education and *discrimination* in access, a more realistic value classroom of *discrimination* could be approximated at around 1,440 million euros. With this new figure, the weight of classroom *discrimination* would rise to 30%, with *discrimination* in access accounting for the remaining 70% of all educational *discrimination*.

IV. SUMMARY OF THE ECONOMIC ASSESSMENT OF DISCRIMINATION

Having detailed the results in each of the sections, a final exercise of recapitulation that summarises the global amount of the economic estimation of educational and employment *discrimination* affecting the foreign population can be carried out. Although in each of the sections different results are shown considering different technical nuances, the main figures are shown in table I and aggregated into a single final value. Employment *discrimination* towards the foreign population in the four dimensions analysed (activity, unemployment, over-qualification and wages) would amount to just over 12 billion euros, close to 1% of current GDP in 2022, while educational *discrimination* would total almost 5 billion euros, 0.4% of GDP. **Overall, the *discrimination* analysed would therefore amount to some 17 billion euros, or 1.3% of GDP.** We are talking about a gross detriment of resources of enormous magnitude, equivalent, for example, to a large part of the total personnel expenses of the general state budget in 2022 or to approximately more than half of the revenue from corporate tax in the same year (32 million euros).

Table I. Summary of the Estimation of the Economic Value of Discrimination in Employment and Educational Discrimination against the foreign population. Selection of Results		
Origin of Discrimination	Economic Value	% GDP
Reduced access to the Workforce	1,205,045,907 €	0.090%
Higher unemployment rates	5,124,385,776 €	0.381%
Higher levels of overqualification for the job (higher education)	2,848,943,678 €	0.212%
Higher levels of overqualification for the job (secondary education)	909,653,016 €	0.068%
Wage discrimination	2,240,796,476 €	0.166%
Total EMPLOYMENT Discrimination	12,328,824,853 €	0.916%
Lower Access to Secondary General Education	57,208,717 €	0.004%
Lower Access to Secondary Vocational Education	814,817,086 €	0.061%
Lower Access to Higher Education from compulsory Secondary General Education	3,888,785,906 €	0.289%
Lower Access to Higher Education from compulsory Secondary Vocational Education	77,198,830 €	0.006%
Total EDUCATIONAL Discrimination	4,838,010,539 €	0.359%
TOTAL DISCRIMINATION IN EMPLOYMENT AND EDUCATION	17,166,835,392 €	1.275%



V. CONCLUSIONS

1 **There is a high level of employment *discrimination* with a strong gender dimension:** We observe a notable gap between foreigners and Spanish nationals with regard to their integration in the workforce, with specially marked *discrimination* against women, reflecting significant inequalities in access to and permanence in the labour market, as well as in over-qualification and wage differences with respect to Spanish nationals.

2 ***Discrimination* against foreign women in access to the labour force is evident.** The aggregate levels of integration in the workforce between the national and foreign population are similar, with a negative differential in the foreign female activity rate of 2.3 percentage points with respect to Spanish women, which suggests *discrimination* in access to the workforce. This would amount to about 1.2 billion euros per year less in salary payments, i.e. about 0.09% of GDP.

3 **The *discrimination* is quantitatively very important.** There is a simple difference in the unemployment rate between foreigners and Spanish nationals of 6.6%. Adjusting for the relevant covariates, the *discrimination* attributable to the increase in the probability of being unemployed among foreigners remains at 5.0%. In terms of economic valuation this *discrimination* would amount to around 5.1 billion euros, approximately 0.38% of GDP.

4 **The *discrimination* in the form of lack of employment is more marked among women.** Although women represent 47% of foreign employed persons, they contribute to 62% of the overall effect of unemployment *discrimination*, both in terms of the number of persons employed and in economic value, which is explained by a larger *discrimination* gap for women than for men.

5 **It can be estimated that there is a significant deficit in terms of labour integration and *discrimination* in terms of over-qualification.** The analysis reveals that the moderate over-skill gap for foreign workers with tertiary education that may eventually be due to *discrimination* is 15%. The annual economic value of this *discrimination* would amount to around 2.8 billion euros, or 0.21% of GDP. The same analysis replicated for foreign workers with secondary education reveals that the difference in overqualification attributable to *discrimination* is around 11%, which translates into an economic valuation of around 900 million euros. This amounts to 0.07% of GDP.

6 Once again, there is a significant gender difference in terms of *discrimination* due to over-qualification. The aggregate effect of over-qualification *discrimination* stems to a greater extent from discrimination against women (443 million compared to 267 million for men).

7 Wage gaps are very significant and wage *discrimination* seems evident and very significant. The gross wage differential between foreign and Spanish national populations is 23%, rising to 25% for foreign women compared to Spanish women. Wage *discrimination* between the Spanish national and foreign population results in a percentage difference of 2.2% in the average wage against the foreign population, leading to an aggregate annual loss of some 2.2 billion euros, equivalent to 0.17% of GDP.

8 There is a marked inequality in educational access and drop-out rates. The foreign population faces a lower school enrolment rate and a higher probability of dropping out of school due to their origin, which is attributed to *discrimination*.

9 *Discrimination in educational access is evidenced.* There is a gross enrolment rate 17 percentage points higher in the Spanish national population than in the foreign population, which translates into economic *discrimination* valued at up to 3,398 million euros, or 0.25% of GDP.

10 After access, the *discrimination* continues in the classroom. The stress processes associated with migration processes and being exposed to a higher level of bullying and a lower degree of acceptance at school result in higher drop-out rates among foreign pupils. *Discrimination* associated with the origin of school drop-out is identified, with an economic valuation of 102 million euros.

11 Vocational Training courses are an exception, as the drop-out rate of foreign students is lower in them, although, given that the drop-out rate is calculated on the basis of expectations, the result could be explained by a better academic result compared to Spanish students doing the same studies, which could indicate an over-presence of foreign students in Vocational Training courses who could also have successfully completed other types of studies.

12 Educational *discrimination* is also observed when comparing the highest levels of education attained by Spanish and foreign students. A higher relative presence of foreign students at lower levels of education and a lower presence in higher education indicates the existence of educational *discrimination*, which amounts to just over 4.8 billion euros (0.36% of GDP).

13 The greatest cost of school *discrimination* occurs at the point of access to the education system (which accounts for 70% of the total cost), with less *discrimination* occurring in the classroom (which accounts for 30% of the total cost).

14 In terms of educational levels, the greatest cost of this discrimination is the *discrimination* registered in the transition from *Bachillerato* to higher education (80% of the total cost).

Also significant is the change from lower secondary to upper secondary education with vocational orientation (17%).

15 By age bracket, the weight of school *discrimination* tends to increase with age. It amounts to 43% in the 45-64 age group, 39% in the 35-44 age group, 14% in the 25-34 age group and 4% in the youngest age group, which is positive in the sense that it **indicates a trend towards a decrease in educational *discrimination*.**

16 The economic valuation of employment and educational *discrimination* combined amount to 17 billion, representing 1.3% of GDP, indicating a significant loss in terms of wages lost by the discriminated foreign population.

