SCHOOL AND ACADEMIC PERFORMANCE: SOME EVIDENCE FROM ITALY

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ABSTRACT

Our aim is to investigate and compare the performance of Italian public High Schools in order to provide citizen more complete information about different types of high school and give parents a tool to support their children in the school choice. We consider three outputs provided by average students' school and academic performance, and school characteristics. Our sample includes 263 high schools (HS) in all Italian Regions, grouped into 6 different types of schools and 3 geographic areas. Our results show that: there are significant differences between HSs according to school and academic performance both within and between geographic areas; the ranking does not vary but the intensity of preferences may be different according to the macro-area and/or the output considered. In this paper, we use the Analytic Hierarchy Process (AHP) to derive a final ranking among different types of schools, by assigning specific weights to outputs, and then we perform a sensitivity analysis to understand the differences among geographic areas. Considering their preferences, parents could attribute personal weights to each indicator in order to derive a ranking of schools.

Keywords: school choice, school performance, academic performance, AHP.

1.Introduction

In most parts of the world, parents' decision on their children's education is rather straightforward. Some studies highlighted that well-qualified teachers, students' school achievements and their academic performance, parents' socioeconomic backgrounds, educational facilities affect the school choice. With regard to Italian school system, some recent empirical studies analyzed the relationship between school features and students' achievements (Giambona & Porcu, 2018; Masci et al., 2018). In a pilot study focused on a small Italian geographic area, Mancini & Marcarelli (2019) simultaneously considered students' school and academic performance and school characteristics to derive a ranking of high schools (HSs). In this paper, we investigate and compare the performance of Italian public HSs in order to provide citizen more complete information about different types of high school.

2.Literature Review

The international literature about school choice is vast. Some scholars showed that parents' choices are influenced by the academic performance of the school but recognized the great importance of socio-economic factors and proximity to home too (Burgess et al., 2014; Tooley, et al., 2011). In Italy, some studies dealt with the impact of some factors on students' achievements (Giambona & Porcu, 2018; Masci et al., 2018), but, as far as we know, apart Mancini and Marcarelli (2019), no scholars analyzed the problem of high school choice by simultaneously considering school and academic performance. Our research aims at extending the above study at national level and providing the ranking of different types of school by remarking the geographic differences too. As most of students attend a public high school in Italy, the socio-economic factor is negligible in our analysis.

3.Hypotheses/Objectives

Annually, *Eduscopio* (Giovanni Agnelli Foundation) provides parents with a tool to identify the best school within their area of residence based only on students' academic performance. Actually, the school quality may be affected by students' achievements (such as INVALSI test score and HS leaving score), their school career, and school characteristics (such as teachers' qualification, class size, etc). For this reason, in order to classify Italian HSs and to provide more complete information to interested citizens, we conduct the analysis considering at the same time the academic performance, the school performance and the school characteristics associated with different types of HS. Our results may be useful to support parents and their children in the selection of a high school.

4.Research Design/Methodology

In the first step of our study, in order to understand the characteristics of the decision problem, we analyze the performance of different types of HS (Scientific Lyceums, Classic Lyceums, Linguistic Lyceums, Human Sciences Lyceums, Commercial Technical HS, Technological Technical HS) providing a detailed description of the problem. In the second step, we assign the weights to outputs and derive a ranking among the schools, applying the AHP. As the entries of pairwise comparison matrices are obtained as ratios between pairs of indicators values, that is, they are not subjective judgments, matrices are obviously consistent. Finally, we perform a sensitivity analysis to give information about the change of the ranking on varying the set of weights.

5.Data/Model Analysis

Eduscopio provides data on students' school and academic achievements; *ScuolaInChiaro* (Ministry of Education) deals with data on the characteristics of the school[1]. The descriptive analysis shows that, as concerns students' achievements, CL and SL have the best performance, Technical HS the worst ones whereas the performance of LL and HSL is not clearly defined and varies depending on the macro-area. To evaluate the performance of a certain type of school (i.e. Scientific Lyceum), we calculate a weighted arithmetic mean of the performance of every schools of this type, where the weights are derived by the number of enrolled students. It is interesting to note that the best school careers occur in the South whereas the best academic careers occur in the North. Since the problem involves several criteria and sub-criteria, we apply an AHP model (Fig. 1) for deriving the ranking of HS. Our results show 3 groups of schools nationwide: CL and SL have the best performance, LL occupies the intermediate level, HSL and Technical HS have the worst performance. Considering macro-areas, we observe two separate groups in the North (LL is closer to CL and SL) and 3 clusters in the Center and in the South (LL and HSL are in the intermediate level). The gap between the performance of the

[1]We collect data referred to a stratified sample (by macro-areas and type of school) of 263 public HSs: 60 scientific lyceums (SL), 40 classic lyceums (CL), 41 linguistic lyceums (LL), 27 human sciences lyceums (HSL), 44 Commercial Technical high school (CTHS), 51 Technological Technical high school (TTHS). For each school, we collect data on the students' performance during the secondary school (high school leaving score - HSLS, percentage of academic enrolled students %AES, graduates without failures GwF, the INVALSI test score - InvalsiTS), their academic performance (percentage of students passing the first year - %SpFY, percentage of academic credits at the end of first year - %ACFY, exams' average score - EAS) and the characteristics of the school (the number of students per class - StxClass - and per teacher - StxTeach, the percentage of teachers with more than 5 years of service - %Teach5+in the school, the percentages of teachers with fixed-term contracts - %TeachFT).

identified groups increases by moving from global to partial priorities associated with school and academic performance; with regard to the characteristics of the school, there are no specific behaviors.

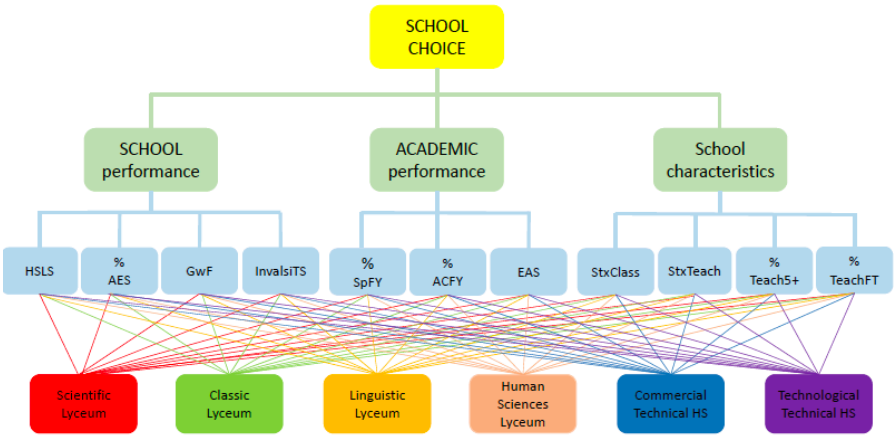

Figure 1 - The hierarchy of a school choice problem

6.Limitations

Due to the specificity of the Italian school system (mainly based on public HS), our analysis cannot be extended to international contexts in which private schools are more widespread.

7.Conclusions

In this paper, we investigate and compare the performance of Italian public HS in order to provide citizen more complete information about different types of HS and give parents a tool to support their children in the school choice. The results show that the ranking does not vary but the intensity of preferences may be different according to the macro-area and/or the criterion considered. The sensitivity analysis highlights that the ranking of preferences between CL and SL largely depends on the importance assigned to each criterion considered in the choice problem.

8.Key References

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