



POST-DIPLOMA CHOICES OF STUDENTS IN SOUTHERN ITALY

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ABSTRACT

An important choice in personal experience, for those attending the last year of high school, is undoubtedly the one that concerns the decision whether to undertake university studies or enter the working world. The present paper is aimed at evaluating the choice and the propensity of students, attending the last year of high school, towards university enrolment; therefore, we want to study the tendency that they have expressed, through the completion of a questionnaire, to continue their studies or to enter in the working context; in this way we obtained a comprehensive view of the progress of an important social weight phenomenon. An "ad hoc" survey, realized on a sample of students in Messina, a town in the Southern Italy, has allowed the collection of statistical information on a total of 837 units. In our analysis we performed comparisons between students, based on appropriate grouping variables, within two strata (those who intend to continue their studies and who intend to enter immediately in the employment context). From a methodological point of view, we used the NPC test based on permutation solution. It was chosen for its several optimal properties, that make it very flexible and widely applicable in several fields; in particular, it allows stratified analyses and represents an effective solution for problems concerning the testing of multidimensional hypotheses, that are difficult to face in a parametric context.

KEYWORDS: Post-diploma choices, University enrollment, NPC test.

1. Introduction

The choice of the immediate future stands as the first major obstacle to be overcome for the teenagers, at the end of high school; in fact, they must take an important decision: to continue the school career with university studies or to enter in the employment context. In both cases, these choices are extremely delicate, in fact they depend not only on the school career of each student, but also by expectations for the future. The risks of a wrong choice are several: a high dropout rate and university failure, a high probability of changing faculty, a large number of unemployed students after graduation and so on. In this moment of choice it is necessary to clearly present the different possibilities that are offered to young people, promoting a convinced and conscious choice, without raise false expectations for their university and working future. In this context this paper is aimed at evaluating the choice and the propensity of students, attending the last year of high school, towards university enrolment or entering in the working context. It want to contribute to the reflection, carried out by statistical and social research, on the way in which teenagers face the immediate future planning in an area with high levels of unemployment, such as Southern Italy.

2. Materials and Methods

The "ad hoc" survey, addressed to students of a sample of high schools in Messina, has allowed the detection of statistical information on a total of 837 students. The survey was performed in the period January-May 2014. The project, despite its complexity, has been welcomed by schools and positively evaluated by students and teachers, who directly took part. The data are collected from responses to a questionnaire, ad hoc designed and anonymous, structured into six sections

1. an introductory registry section to obtain basic information on gender, attended school and evaluation of the school education;
2. a section related to post-diploma choices and indications about those who support the students in the choice (school, parents, media, friends etc);
3. a section on knowledge of the employment practice in the territory and personal evaluations on the possibility of entering the working world;
4. a section reserved for those who wish to enroll at the university, where the preferred area of university study and the side (Messina University or others) were indicated. The areas are foresee from MIUR:
 - Economical, legal, political and social Area;
 - Scientific and technological Area;
 - Engineering and architecture Area;
 - Humanistic Area;
 - Health Area;
5. a section dedicated to students who do not intend to continue their studies and would like to enter the working world; the identified reasons are the following: economic difficulties of the family, desire to economic autonomy,

lack of aptitude for study, possibility to work in eventual family business;

6. a section related to the importance given by the student to the university degree and other factors (good looking, recommendation etc), which can facilitate job placement; finally, students had to indicate whether they are willing to transfer (in Italy or abroad) for a job and the expectations (positive or negative) about their future.

With reference to sampling design, we decided to use the two-stage sampling plan that, as is known, consists of the extraction of a first sample of complex units from the population (schools) and the extraction of a sample, from each group, selected in the first stage (classes) [1]. The primary sampling units was carried out without repetition and with constant probability; at the second stage, instead, the extractions from each group, i.e. each school (the size of which is variable) were realized with variable probability, in fact we extracted a number of classes proportional to the number of sections in the school (if the probabilities of inclusion of second stage units were constant, the composition of the sample would depend on the size of selected schools and, consequently, the variability due to the first stage would be very high).

Examining the answers given by the 837 interviewed students (41.7% males and 58.3% females), the 83.5% expressed the intention to continue their studies with a university career and only the remaining 16.5% manifests the intention of start working immediately after diploma. In Figure 1 we showed the percentages of interviewed students, according to the quality of school education, perceived by each student; in Figure 2 the percentages of orientation figures or tools, that guided the students for their future choices, are shown; Figure 3 illustrates the university areas in which students are interested.

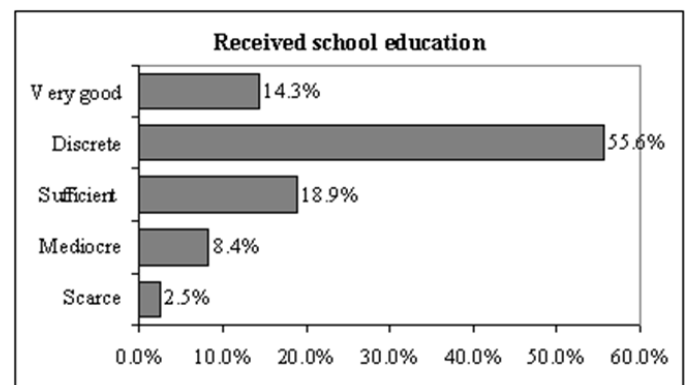


Figure 1: Percentages of students according to the perceived quality of school education

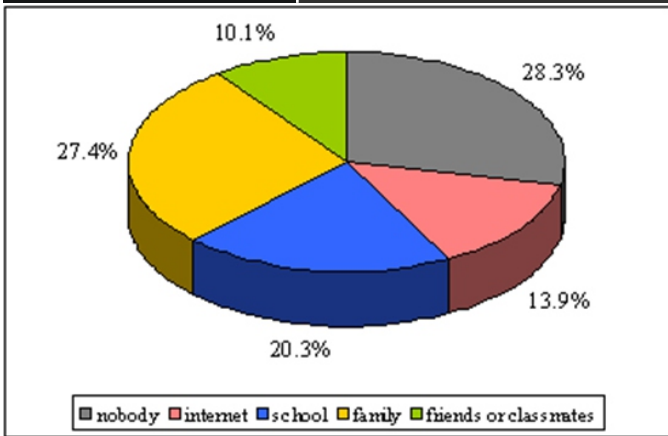


Figure 2: Percentage of orientation figures or tools

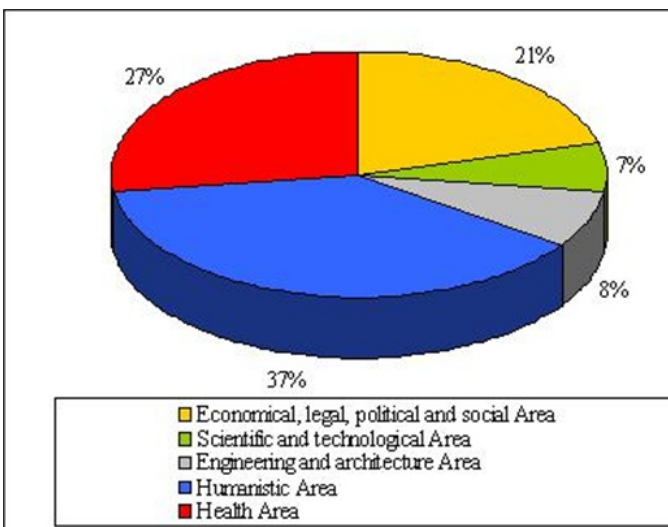


Figure 3: Percentages of students according to the university areas in which they are interested

From the methodological point of view, we used the Non Parametric Combination (NPC) test, based on permutation test [2]; [3],[4], chosen for the several optimal properties of which it is characterized. Permutation tests represent an effective solution for problems concerning the testing of multidimensional hypotheses, that are difficult to face in a parametric context. In comparison to the classical approach, NPC test is characterized by several advantages: it does not request normality and homoschedasticity assumption, it draws any type of variable [5], [6], it assumes a good behavior also in presence of missing data, it is powerful in presence of low sampling size [7], it resolves multivariate problems without the necessity to specify the structure of dependence among variables, it allows stratified analyses and resolves problems in which observations number is smaller than variables number [8], [9]. All these properties make NPC test very flexible and widely applicable in several fields; in particular we cite applications in sociological context [10], [11], [12], in medical context [13], [14], [15], [16], [17], [18] [19]; [20] and in genetics [21], [22]. By means of mentioned procedure it is preliminarily possible to define a set of k one-dimensional permutation test, denominated partial test, through which the marginal contribution of every answer-variable can be examined in the comparison among groups. The partial tests are non-parametrically combined through CMC (Conditional Monte Carlo) procedure in combined tests, using an opportune combination function (generally Fisher, Tippett or Liptak); these tests globally verify the existence of differences among the multivariate distributions of the groups. The hypotheses systems are verified by the determination of partial tests (first order) that allow to evaluate the existence of statistically significant differences. The partial tests are combined, in a non parametric way using a combined function as Fisher, Liptak or Tippett, in a second order test that globally verifies the existence of differences among the multivariate distributions. A procedure of conditioned resampling Conditional Monte Carlo [3] allows to estimate the p-values, associated both to partial tests and to second order tests.

3. Results

The analysis was performed considering two strata, distinguishing between those who intend (Stratum 1) and do not intend (Stratum 2) to continue their studies. Below we report the results of the NPC test, applied to comparison between:

1. male and female (Table 1);
2. those who declare to have an adequate school education (sufficient, discrete

or good) and who claim to have an inadequate preparation (scarce or mediocre) (Table 2);

3. those who received useful information for future choice and those who did not receive (Table 3);
4. who gives weight to the degree for insertion into working world and those who do not think it is necessary (Table 4);
5. who has a positive expectation and who has a negative expectation about their future work (Table 5).

All combined p-values are obtained using Fisher's combining function. Tables 1-5 report the results of NPC test; showing the partial and combined p-values for all examined variables and the directionality (D) only in correspondence of significant numerical and dichotomous variables.

Table 1: NPC test results – Grouping variable: "Gender" (Male vs Female)

VARIABLES	Stratum 1 * p-value	D	Stratum 2 # p-value	Within variable.
Perceived quality of school education	0.021	>	0.818	0.090
Orientation figure or tools	0.547		0.360	0.707
Useful information for the future choice	0.580		0.042	<
Guarantees from local econ. system	0.345		0.633	0.322
Preferred area of university study	0.001		nr	nr
Possible university side	0.297		nr	nr
Importance given to university degree	0.112		0.957	0.301
Relevance attributed to other factors	0.038	<	0.595	0.211
Willingness to transfer	0.003	>	0.921	0.009
Future expectations (positive or negative)	0.855		0.591	0.632
	↓		↓	↓
Within-strata	0.001		0.515	0.022
Between-strata	0.029			

* Stratum 1: students who wish to continue their studies.
Stratum 2: students who do not wish to continue their studies.

Examining the partial and combined p-values, we may notice that, in general, significant differences exist between the two strata, i.e. between the profile of the students who wish to continue their studies and those who want to immediately enter into work. In particular, in Stratum 1 males showed an awareness of a higher education than women and a greater willingness to transfer (in Italy or abroad); on the other hand women, most of the men, attribute importance in finding a job to factors such as good looks, recommendation etc; in Stratum 2 boys, more than girls, say that they do not have sufficient guarantees from the local economic system.

Table 2: NPC test results – Grouping variable: "Perceived quality of school education" (Adequate vs not adequate school education)

VARIABLES	Stratum 1 * p-value	D	Stratum 2 # p-value	Within variable
Gender	0.444		0.969	0.649
Orientation figure or tools	0.021		0.007	0.019
Useful information for the future choice	0.041	>	0.282	0.034
Guarantees from local econ. system	0.373		0.958	0.641
Preferred area of university study	0.468		nr	nr
Possible university side	0.032		nr	nr
Importance given to university degree	0.239		0.267	0.206
Relevance attributed to other factors	0.870		0.730	0.846
Willingness to transfer	0.264		0.691	0.206
Future expectations (positive or negative)	0.007	>	0.265	0.009
	↓		↓	↓
Within-strata	0.003		0.122	0.023
Between-strata	0.030			

* Stratum 1: students who wish to continue their studies.
Stratum 2: students who do not wish to continue their studies.

Analyzing the perception of the adequacy of school education (Table 2) we note that in the Stratum 1 students who feel more prepared state that they were more supported in their choices by figures of orientation and have obtained more information; moreover they are also more optimistic, expressing positive future expectations.

In the Stratum 2 the only significant difference existing between students with different quality of school education is related to the presence of orientation figures or tools. Probably, the lack of guidance figures led the boys to a working career choice rather than university choice

Table 3: NPC test results – Grouping variable: “Useful information for the future choice” (Yes vs No)”

VARIABLES	Stratum 1 * p-value	Stratum 2 # p-value	Within variable
Gender	0.581	0.647	0.145
Perceived quality of school education	0.066	0.772	0.078
Orientation figure or tools			
Guarantees from local econ. system	0.212	0.714	0.616
Preferred area of university study	0.004	nr	nr
Possible university side	0.566	nr	nr
Importance given to university degree	0.224	0.902	0.231
Relevance attributed to other factors	0.816	0.566	0.654
Willingness to transfer	0.594	0.887	0.762
Future expectations (positive or negative)	0.002 >	0.890	0.005
	↓	↓	↓
Within-strata	0.004	0.612	0.005
Between-strata	0.009		

* Stratum 1: students who wish to continue their studies.
Stratum 2: students who do not wish to continue their studies.

Focusing our attention on the variables “useful information for the future choice” (Table 3) we can see that the only differences were found in the Stratum 1 with reference to preferred area of university study and future expectations. In particular, those who have obtained useful information for the future is more determined in the choice of the university scientific area, in which they want to continue their studies. Furthermore, they show an optimistic view about their future, probably because they are hopeful in the possibility of finding an appropriate job, at the end of their university career

Table 4: NPC test results – Grouping variable: “Importance given to university degree” (Yes vs No)

VARIABLES	Stratum 1 * p-value	Stratum 2# p-value	Within variable
Gender	0.111	0.905	0.205
Perceived quality of school education	0.290	0.472	0.402
Orientation figure or tools	0.161	0.865	0.298
Useful information for the future choice	0.234	0.557	0.230
Guarantees from local econ. system	0.215	0.590	0.277
Preferred area of university study	0.211	nr	nr
Possible university side	0.268	nr	nr
Relevance attributed to other factors	0.530	0.442	0.281
Willingness to transfer	0.002 >	0.089	0.004
Future expectations (positive or negative)	0.004 >	0.889	0.013
	↓	↓	↓
Within-strata	0.001	0.658	0.009
Between-strata	0.004		

* Stratum 1: students who wish to continue their studies.
Stratum 2: students who do not wish to continue their studies.

Comparing the students that give importance to the university degree with those who attribute low importance (Table 4), the only significant p-values are found in the Stratum 1 for the availability to transfer (in Italy or abroad) and for future expectations. Presumably, those who wish to continue their studies want to get involved and believe that the attainment of the degree gives greater chance of finding a rewarding job; so they have more positive expectations about their future and they are also willing to leave their city, so that their expectations become reality.

Table 5: NPC test results – Grouping variable: “Future expectations” (Positive vs negative)

Variables	Stratum 1 * p-value	Stratum 2 # p-value	Within variable
Gender	0.859	0.772	0.934
Perceived quality of school education	0.001 >	0.836	0.003
Orientation figure or tools	0.828	0.911	0.467
Useful information for the future choice	0.001 >	0.651	0.003
Guarantees from local economic system	0.002 >	0.779	0.006
Preferred area of university study	0.923	nr	nr
Possible university side	0.449	nr	nr
Importance given to university degree	0.003 >	0.616	0.012
Relevance attributed to other factors	0.435	0.718	0.453
Willingness to transfer	0.018 >	0.820	0.019
	↓	↓	↓
Within-strata	0.001	0.701	0.001
Between-strata	0.006		

* Stratum 1: students who wish to continue their studies.
Stratum 2: students who do not wish to continue their studies

Finally, comparing students who have positive future expectations with those that have negative expectations (Table 5), we can note that there are several significant differences in the Stratum 1: in particular those who have a positive view of their future have a better perception of the quality of their school education, have obtained more useful information for the future choices, expect more guarantees from the local economic system, recognize the importance of graduation into get a job and are more willing to transfer; no differences were found in Stratum 2.

4. Discussion

The school is a kind of ecosystem, in which various social figures (teachers and parents) have a particular role; these figures should raise awareness and support the guys on sensitive issues such as school-family relationships, school performance and, of course, the choice of the future. Adolescence is certainly one of the most critical moments of the life of each individual and can be seen as an organizing or disorganizing process. It involves adults significantly present in the social network, so as to encourage adolescents to reflect and to understand their own capabilities and, of consequence, to consciously make their choice [23]. The task of guiding the students to appropriate choices, after diploma from secondary school, becomes a real necessity for the Country. It is necessary that an advanced Country use, in the best way, the human resources that it possesses, especially the youth who are the future: they constitute a precious asset, especially in a zero growth Country, like Italy. Therefore the attention and careful evaluation, by adults, about orientation criteria of young people assumes a primary importance. For the teenagers it is time to manage their own life choices; nevertheless the increase of opportunity does not produce an increase in freedom, for which the adolescent is at the center of a growing series of educational and informative offers; but he does not necessarily possess the planning key to optimize the opportunities [24]. This key should be provided by an adequate guidance support [25], [26]. Fundamental importance assumes the role of schools and teachers, especially at the end of high school, because they are able to “catch”, in an extremely sensitive way, those signs of change and, consequently, of orientation manifested by young. The school, most of the family, serves as a great collector of the social situation that the teenager lives; in fact it supports his necessary transformations and his future choices. A synergy between school and family would be the ideal condition since both represent the two founding institutions of the social system. In this context, there is a growing need for scientific works and targeted surveys, that implement these reflections [27]. From a sociological point of view, this paper aims to analyze how much and how this “modern subject, interpretable as a builder of life” has really a project. Moreover, it aims to study the ability of the young to choose appropriately and, especially, if that choice is supported by coherent social “actors” [28].

5. Conclusions

A moment of important choice in personal experience, for who is completing the studies in high school, is undoubtedly the decision whether to continue studies with a university career or enter the working world. In both cases, these choices are extremely delicate, being the result of both the school curriculum from which each student comes and the expectations for their future. On the bases of our survey, students who compose the examined sample have declared more frequently to be oriented towards a university course instead of a career. The application of the methodology NPC allowed to identify the most important factors that differentiate students oriented to continue their education, compared to those oriented to take a job at the end of high school education. With reference to gender differences, in the subpopulation of students planning to continue their studies,

males showed an awareness of a higher education than women and a greater willingness to transfer (in Italy or abroad); on the other hand women, most of the men, attribute importance in finding a job to factors such as good looks, recommendation, etc; among those who are oriented towards a career choice, boys more than girls say that they do not have sufficient guarantees from the local economic system. Basic education, provided by the school, was found to be a discriminatory factor between those who are willing to continue their studies and those who want to immediately start a career: high school, in fact, assumes the role of first selection mechanism for the university as well as the guarantor of a basic preparation. Important role assumes orientation, coming from both the school and the family and / or the media; if it does not focus the attention and efforts on a good orientation, the risks can be multiple: from a higher rate of abandonment and failure university, with a higher probability of changing faculty, to finish with a high number of unemployed students after graduation. The survey provided to highlight the importance given by students at graduation, as key to enter the working world. Graduates are many, many more than those currently that the world of work can absorb, and their entry into the working environment is increasingly slow, laborious and difficult, despite the high academic qualifications and prestigious specializations. Undoubtedly, however, it is important to get a degree to address, in the best way, the professional world. Thanks to new technologies (internet and social network) and to traditional informative channels (television programs, newspapers) and relational channels (family, school and friends), young people have a thorough knowledge of the economic local system; they recognize the more spendable professions in our Country and they are able to identify and choose, with sufficient autonomy, the most appropriate course of university study, within the wide didactic offer, provided by the Italian university. Another factor we focused our attention is represented by the expectations. For a long time, social research investigates the expectations of young people towards the "job placement", current topic in the light of changes in the production system, which shows increasing interest to qualified resources. Certainly the employment status is highly variable in the Italian territory: it deserves to be highlighted the ease with which young people find jobs in the North (where the waiting time of the first job is really limited) and the difficulty in lending to the South, where unemployment and unemployment reached the highest rates in Italy. In this sample examined in Messina, which is a town in southern Italy, only a small percentage (less than 20%) expressed the intention to seek immediately a job, at the end of the studies; this situation is due to the awareness of the difficulty of finding a job, in the unpleasant working conditions in South Italy. The expectations of young people are, therefore, stronger and more positive if they complete a longer cycle of education, earning a degree: it seems accepted that the degree permits, most likely, the entry into the world of work, because the university trains students by providing the skills and preparing them for the future evolution of the job market. In conclusion, it is necessary that the actors act synergistically to avoid the waste of valuable resources: the school, the family, the university as a primary receptor of these hopes, last but not least, the working world, macroscopically involved. It is assumed that this paper will contribute to better promote the meaningful collaboration between school and university, trying to interpret the needs of the students of high school on the choices of their immediate future, when this is university. If, however, the choice is oriented towards a working activity, the scientific analysis of the obtained information can be used to convey and deepen analysis on professional choices and on the ideal and real expectations, related to the working world.

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