

# The top candidate is an intermediate one: An analysis of online posts of Veneto industries

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## 1. Introduction

In this work<sup>2</sup>, we examine the results of an experiment carried out in year 2018 by sending a number of fictitious CVs in response to a sample of job vacancies posted by Veneto industries. The experiment aimed at highlighting which applicant characteristics influence the recruiters' call back rate and speed (Brocco et al., 2021).

Common sense dictates that the best candidate for a job is the person who, among those who showed up, possesses the most qualifying characteristics to fill the vacancy. So, "best" is relative to the vacancy. For this reason, a company's recruiter tends to match the expected with the exhibited characteristics and ignores the candidates whose skills are at all irrelevant to the vacancy even if their human and social characteristics stand out.

We hypothesise that another factor affects the initial stage of the recruitment process: the applicant's expectations in terms of benefits and career as perceived by the recruiters. Our hypothesis is that recruiters match the applicants' expectations, as perceivable from their CVs, with the benefits the company is prepared to offer to the future employee and, for this reason, they discard both the worst applicants and the ones who are too good, thus favouring the intermediate ones.

The rest of this paper is organised as follows: Section 2 briefly describes the available data and the survey methodology, Section 3 presents the main results on reverse discrimination and Section 4 interprets the outcomes, refers to the mainstream literature and offers a conclusion.

## 2. Data and methods

The experimental survey was carried out by sending a number of fictitious CVs in response to online posts for 120 job vacancies in Veneto industries. The experiment consisted of creating and sending five different CVs to each job opening and waiting for the company to call back. The CVs differed according to a fractional factorial design aimed to control a total of ten applicant characteristics: gender, place of origin, field of study, academic degree level and final mark, English and computer skills, driving their own car, and being a music lover or a youth group volunteer. The rate and speed of call backs was expected to reflect the acceptability—or conversely, the social discrimination—likelihood of certain characteristics or combinations of characteristics. As a whole, 600 CVs were emailed in response to online posts and 59 call backs were obtained.

The job openings were drawn from a specialised job-search website—subito.it. In a preliminary comparison with other websites and newspapers, we verified that all job openings advertised through local newspapers were available through the chosen website. Hence, we decided to only use the internet to collect the ads. As a whole, these belonged to the manufacturing industry (20.5%), the service industry (43.2%), other service sectors (21.8%) and commerce (14.5%). Job vacancies were related to the following five activities: administrative offices, human resource offices, marketing activities, commercial offices and information

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<sup>1</sup> The author wishes to thank Professor Maria Cristiana Martini for her precious help with the segmentation analysis of the data.

systems. These were jobs for which all hypothesised graduates might be appropriate. By design, each type of activity received the same number of openings: one-fifth of the sample.

The criterion variable  $Y$  of our analyses is having obtained a response to a mailed CV. So, the  $Y$  variable has two possible values: 1 if the company called back and 0 otherwise. For practical purposes, the telephone call backs were equal to the email ones. Moreover, the CVs were randomly selected from a pool defined by logically crossing the ten experimental factors, so all responses were equally important. A certain level of intra-post correlation is possible due to a partial similarity of CVs mailed in response to the same post.

We applied both a segmentation and a multilevel regression analysis. The segmentation, or regression-tree analysis, consists of a stepwise partitioning of the 600 CVs in subsamples according to a predictor at a time to maximize the between-subsample distance of the criterion variable. The segmentation procedure ends if either no partition is statistically significant or the size of a possible subsample is below a predefined minimum. This technique is particularly appropriate to highlight multiple interactions, that is the interaction between a plurality of predictors. In this work, we adopted the CHAID algorithm of the SPSS package, which allows the partitioning of the sample to any number ( $\geq 2$ ) of subsamples and of categorical predictors. The CHAID results are presented in the following; other multivariate analysis results have been published elsewhere (Brocco et al., 2021).

### 3. Results

The synthetic results of call backs (Table 1) show the following highlights:

- a) The country of origin of candidates who received a call back was predominantly Italy (16% from Veneto and 13% from Southern Italy), followed by Central Africa (8%), Northern Africa (7%), Eastern Europe (7%) and the Middle East (4%). For estimation efficiency, from now on, the candidates' origin is categorised into Italians and born abroad.
- b) Gender was not significant, though women were invited to a job interview more frequently than their male counterparts. This result hides a significantly higher preference for social sciences and humanities degrees instead of scientific and technical ones. With a strong correlation between the feminine gender and the attainment of social sciences and humanities degrees, this makes it clear why both women and graduates in social sciences or humanities obtained more call backs than their male and scientific-technical counterparts. In addition, this is not an unexpected result since some vacancies may have been posted to replace a maternity leave.
- c) Another expected result is that, *ceteris paribus*, a Master's graduate is preferred to one with only a Bachelor's. The between-level difference of both the call back rate and speed is large. This may mean that, when a recruiter has knowledge of only the CVs of two graduates, she prefers inviting the candidate to a job interview who, in probabilistic terms, is more productive.
- d) What is puzzling in our experiment is that graduates with intermediate skills in English and computer use showed higher preferences and obtained a call back quicker than those who stated they were fluent in English and experts in computer use. Indeed, the call back rate was 9% for fluency in English and 12% for intermediate English skills and 8.5% and 10.5% for higher and intermediate computer skills, respectively. Of course, higher or intermediate skill levels were consistently preferred to low levels. Besides, neither of the two distributions of these two basic skills was significant at 10%.
- e) The three social characteristics—possession of a car, playing music and volunteering as youth entertainers—were much less relevant as call back correlates. However, the possession of a car showed an unexpected relationship with the call back probability since the applicants who stated they could use one at work obtained far fewer calls (7.2%) than those who did not mention it in their CVs (11%). In a multilevel regression analysis

(Brocco et al., 2021), this variable was significant at 10%.

**Table 1. Per cent call back rate by experimental factor, Veneto region, 2018, n=600.**

	Overall rate	7-day rate
Gender: Male	7.7	7.0
Female	10.7	8.0
Origin: Veneto	16.0*	16.0**
South Italy	13.0	11.0
Eastern Europe	7.0	6.0
North Africa	7.0	5.0
Central Africa	8.0	5.0
Middle East	4.0	2.0
Degree level: Bachelor	7.0 <sup>o</sup>	4.7*
Master	11.3	10.3
Discipline: Engineering	6.7**	4.8**
Science	3.3	2.7
Social science	14.0	12.7
Humanities	12.7	10.0
Degree mark: High	9.0	8.1
Medium	9.5	8.6
Low	9.0	8.1
English skills: Fluent	9.0	8.1
Intermediate	12.0	10.7
Basic	6.5	6.0
Computer skills: Expert	8.5	7.1
Intermediate	10.5	9.9
Basic	8.5	7.6
Car owner: Available to drive own car	7.2	6.9
Unspecified	11.0	9.6
Music skills: Plays an instrument	10.7	9.5
Unspecified	7.6	7.1
Juvenile groups: Children's entertainer	10.3	8.8
Unspecified	8.0	7.7

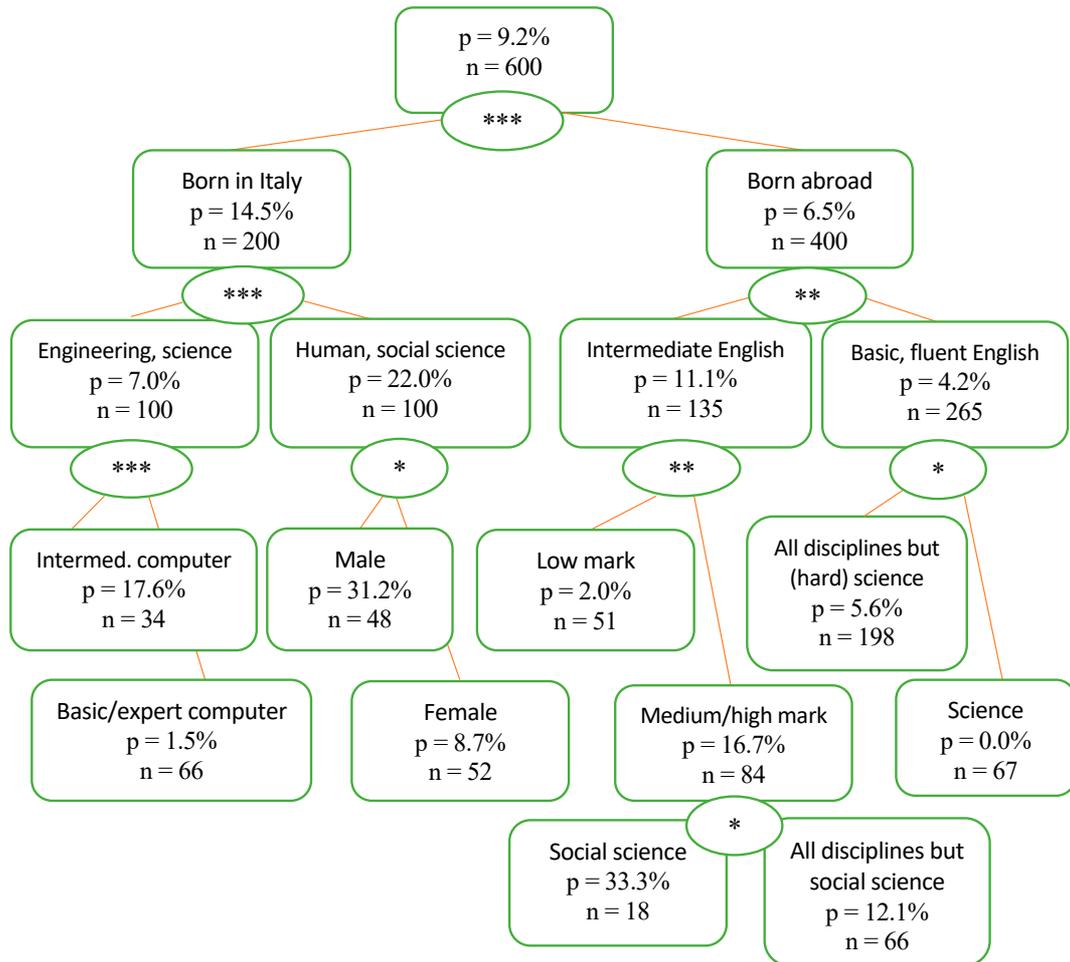
*Significance level: \*\*\* 1%, \*\* 5%, \* 10%, <sup>o</sup> 10%.*

A multivariate analysis was realised to better understand the reason recruiters showed higher preferences for intermediate levels of competencies and for graduates without a car. The segmentation analysis of the *Y* variable produced Figures 1 and 2 for the overall and the seven-day rates, respectively. The tree configurations showed the following:

- We take for granted that the main result of the experiment is that graduates born abroad are only occasionally preferred to Italian ones.
- Among Italians, the highest call back rates were obtained by male graduates in a social sciences or humanities discipline (31.2% vs. 8.7% for female graduates) and by graduates in a STEM (science and engineering) discipline who were intermediate-

- level users of computers (17.4% vs. 1.5% for basic and expert users, respectively).
- Among graduates born abroad, the highest call back rates were obtained by those who had good or medium-range grades at graduation and were intermediate in English (16.7% with a peak of 33.3% among social sciences graduates) and by only 5.6% of those who were either basic or fluent in English and had a non-scientific degree.
- The analysis of the seven-day tree only highlights the preference for graduates born abroad who graduated with a Master's Degree with an intermediate knowledge of English, with a 15.4% call back rate. It can be noticed that this rate is much higher than the average call back rate of Italians and more than twice that of all applicants born abroad.

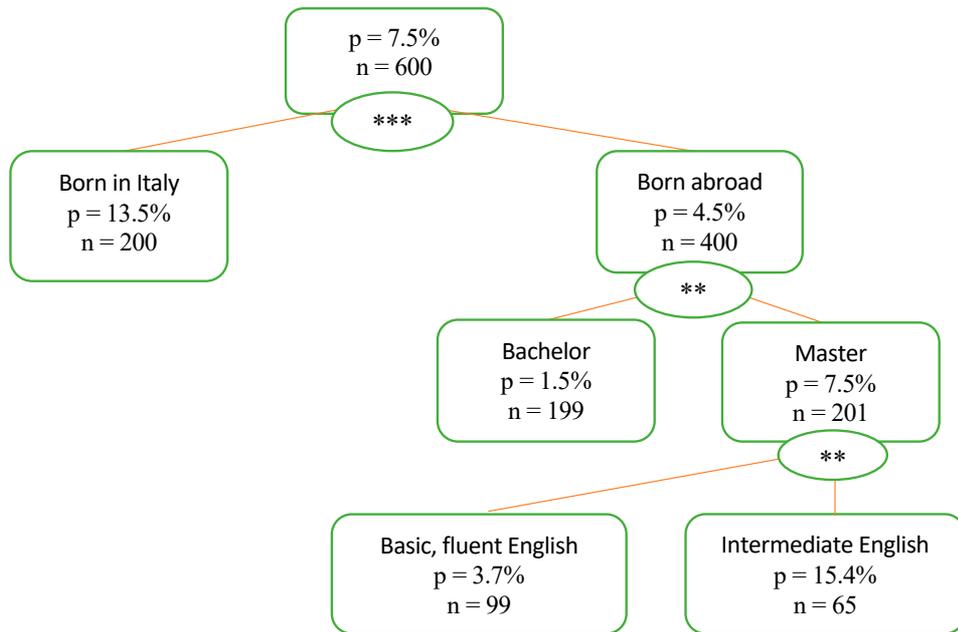
**Figure 1. Regression tree obtained partitioning the sample of CVs. Criterion variable: total proportion of call backs. (Significance: \*=5%; \*\*=1%; \*\*\*=1‰; minimum group size=18)**



#### 4. Discussion and conclusion

We hypothesised that criteria adopted by recruiters while selecting, through examination of CVs, applicants for an invitation to a job interview are complex. The golden standard of the selection process is the set of activities pertinent to the vacant job. Namely, when confronted with applicants with various competencies, recruiters restrict their choice to those that are pertinent to the vacancy.

**Figure 2. Regression tree obtained segmenting the sample of CVs. Criterion variable: call back by seven days from mailing (Significance: \*=5%; \*\*=1%; \*\*\*=1‰; minimum group size=18)**



However, competencies are a matter for interpretation because recruiters—with the possible help of line operators—even if they know exactly what the job entails, are called to state if the competence of the best candidate fits the organisation’s expectations (Taylor and Bergmann, 1987; Rynes and Barber, 1990; Autor et al., 2003; Thebe and Van der Walddt, 2014). For instance, if they are confronted with two applicants, one with a Bachelor’s degree and the other with a Master’s in the same discipline, given equivalent financial standing, they tend to prudently choose the latter.

Besides competencies, the perceived attitudes and job-related values of applicants are the basic parameters for recruitment. At this level, the recruiters’ tastes may discriminate against certain candidates. A vast body of research indicates that gender, race, age, and physical, moral and cultural characteristics may cause discrimination. Even in this research, the applicants’ ethnicity appeared to be a cause of discrimination.

Our research highlighted a sort of reverse discrimination that pushed us to unveil why recruiters implicitly preferred women to men as well as candidates possessing a degree in social sciences or humanities to those with a degree in a STEM field and/or an intermediate rather than a higher level of English and computer skills and, finally, showed aversion against fresh graduates possessing their own car. Indeed, the multivariate analysis showed that the preference for women masked a prevalence of social sciences and humanities degrees among call backs and this means that gender is not a cause of discrimination.

The analysis of multiple interactions involving linguistic and/or computer skills showed a higher preference for applicants perceived as likely to be less demanding. The lower preferences for graduates owning a car can be considered a further symptom of the attitude not to call back wealthier people. We could conclude that recruiters, in opposition to job market common sense (Autor et al., 2003), considered the risk of losing an exceptional but demanding candidate a minor regret. The practical implications of this outcome are that applicants should consider writing their CV accordingly.

In decision theory, this type of attitude refers to the so-called *minimax regret*, or *avoidance of*

*regret* criterion, which is typical of a risk-neutral decision-maker. An analogous theory in the recruitment field called *uncertainty avoidance* was initially developed by Hofstede (1980) with reference to country cultures and adapted to organizations by Barber (1998) and House et al. (2004). With regard to recruitment, the theory claims that companies should prevent applicants from dropping out during the selection process because the maintenance of candidacies is a factor that improves the organization's reputation.

According to Hofstede, Italy is a country with a high uncertainty avoidance culture. For instance, Italian companies prefer predictability and dislike ambiguous situations. So, in general, recruiters are frightened that changes in applicants' pursuit intentions could cause a loss of image for their organization and could negatively affect their career (Barber, 1998). Indeed, it is easy to imagine that top candidates are given more occupational opportunities than others and are more prone to drop out of candidate pools (Highhouse et al., 2003).

These cultural considerations<sup>3</sup> interact with technology. Online job postings and the company's website are now a main source of organizational information. Therefore, applicants are aware of the reputation of the company advertising the job and recruiters are cognizant that applicants know this. This job market transparency contrasts with the hypothesis that recruiters prefer the good instead of the best candidates. However, graduates apply for job interviews even if they are called back for an interview at another company. Uncertainty avoidance theory is relevant to job applicants since, while trying to avoid the risk of unemployment, they apply even for dead-end and low-paying jobs.

Definitely, we resorted to the hypothesis that even the quality of vacancies could influence the search for a good-instead-of-the-best candidate. Unfortunately, job quality was not a factor in our experimental construct. We suggest that, in future work, the type and quality of job offers be considered as a recruiter's ulterior motive influencing their call back rate and speed.

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<sup>3</sup> Cultural studies in business are developing continuously. See, among others, Venaik and Brewer (2010).