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ITALY'S NEW REQUIREMENTS  
FOR ACADEMIC CAREERS: THE NEW  
HABILITATION AND ITS WORTHINESS

Giulio Marini

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# Italy's New Requirements for Academic Careers: The New Habilitation and its Worthiness

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**ABSTRACT:** The new habilitation, established in Italy in 2010 and commenced in 2012, was designed (outcomes released commencing December 2013). Its aim is to filter who will be eligible to apply for competitions for the two permanent level professor positions in the universities. The results of the first set of data are 20 scientific sectors representing more than 10% of all sectors analyzed to understand if the outcomes reflected in a worthy way the indicators of productivity and quality of scientific production of candidates. Some legal and statistical framework are fostered before the data analysis in order to have a better understanding of the reform and the context where it operates. The hypothesis of the worthiness is here addressed on the assumption that the current position held by a candidate should not play any role in the attainment of the habilitation. Splitting candidates into two roles and having controlled for age as a variable, the data was used to reveal that the indicators of quality of scientific production (H index for hard sciences and articles in top ranked journals for social sciences and humanities) are more frequently the best predictors. Though some limits of the present analysis are faced and illustrated, some critical points of this new institution are discussed.

**Keywords:** habilitation, academic career, scientific productivity, rigged competitions, epistemic communities

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## 1. INTRODUCTION: A SYSTEM IN THE PURSUIT OF NEW BALANCES

**R***ecruitment in Italian Universities.* The Italian public administration started to face the problems associated with public expenditures beginning in the early 1990s. One of the key points at those times was to take control of the retirement system of employees and the recruitment efforts of new personnel in public administration positions. As such, universities, however, did not make an effort with respect to this initiative (Cavalli & Moscati, 2010), even though the implementation of *ad hoc* policies were not designed permanently. Since that time, though, a general assumption of *frozen organization charts* was established to regulate the systems. Rules and procedures of competition (*concorsi*) have often changed; sometimes even with decrees that were designed to change the mechanisms (Degli, Esposti, & Geraci, 2010). Nonetheless, besides financial sustainability, the political end has often been focused on efficiency and meritocracy. Examining previous decades of an open door policy of recruitment with a subsequent long period of a lack of competition, resulted in a juridical comparison similar to the French physics context (Pezzoni, Sterzi, & Lissoni, 2012) and ended with a demographic misbalance along with a reduction of productivity due to a lack of any relevant filters in the recruitment process.

Now, as a result of this previous process, to enter the university's professoriate system with a permanent position has become a step-by-step process that is more difficult and, at the same time, even more uncertain. If in previous decades it was a matter of certainty that to enter with a tenured position was only

a matter of time, now there is one more filter (the habilitation) that must be overcome. In any case, the previous tenure mechanism was more or less always the same following a traditional pattern: the *maestro* used his or her personal influence to give the post to his /her *alumno*, or pupil (Fassari, 2009; Pezzoni et al., 2012; Vaira, 2011). In a more formal way, it could be argued that the *personal influence* described by Clark (1986) has always played a crucial role along with the current juridical mechanisms of *concorsi*.

These complex rules established by the Napoleonic pattern were in many cases plagued with allegations of rigged competitions. Moreover, disciplines, rather than institutions, continued to play a strong role (Becher & Trowler, 2001; Lissoni, Mairesse, Montobbio, & Pezzoni, 2011). Despite the rumors and allegations about this pattern of *donship* and nepotism, a different sort of analyses had already been pursued from different perspectives focusing just on recruitment procedures and its possible aberrant practices (Rossi, 2012b; Nelken, 2009; Paris, 2005).

Under this scenario, the 240/2010 Law, also known as *Gelmini Law*, was established and individuals tried to change this existing paradigm. *Gelmini Law* contained harsher new conditions that made initially entering universities with a permanent position a tougher goal. Under this new law, the levels of position were reduced from three levels, full professors, associate professors, and assistant professors and replaced with only two levels, full and associate levels.

Although the assistant professor positions may still be given, they are now only able to be awarded as fixed-term positions whose renewals (typically 3 plus 2 or 3 plus 3 years, respectively) should be tougher to maintain

and is no longer considered simply a formality (previously passing from one level to another was only a question of time or seniority, and the amount of needed time could have been assumed as a proxy of personal success and influence).

Now, these positions as assistant professors are expected to be even externally funded and/or based on national competitions. Unfortunately, until now the total amount of competition funds like FIRBs, and recently replaced SIRs, (both national research competitions for *junior* professors who are less than 40 years old) was not considered as a serious incentive when compared just to the mere necessities of renovations of the human resources.

*The Habilitation in Italy.* The habilitation is now being established as a new institution in the Italian national context. Yet, habilitation is not a new mechanism in academic recruitment. It has been in practice for a number of years in Germany, where *Habilitation* is closer to what is now the new fixed-term assistant professorship.

In that country, this is essentially a second PhD and is usually over a different topic from the original PhD's dissertation (Enders, 2001). However, that version is very different from the Italian use of the term.

More recently it has also been implemented in France (*habilitation*; Musselin, 2004) and is now being introduced in Spain (*abilitación* – that version had thresholds in order to actually pre-indicate who would probably have attained the positions –, more recently replaced by *acreditación*, that has no thresholds and looks to be more similar to the Italian case).

Despite these similar terms, these systems are enacted very differently within each

country and there is a lack of space for comparison within the context of this article.

In Italy, the goal of this system is to provide the possibility for any candidate to become eligible to participate in future competitions (*concorsi*) for full professorship (first level) and associate professorships (second level) without even the attainment of *idoneità* (eligibility, or fit-for-the-job), a very common way to give positions to losing candidates of previous competitions with good scores. Being able to successfully compete in this kind of competition is a new hurdle to be overcome and whose successful output does not necessarily guarantee any sort of post. In a more formal way, habilitation could be described as a “*tougher pool of candidate and selective examination*” because there is one more step when compared to the competitions, thus making this recruitment a longer (in time) *tournament* (Musselin, 2004). At the same time, the process also looks to introduce some of the characteristics of the *opt or out* mechanism, especially at the associate level (Musselin, 2004), since people who have not a permanent position are compelled to get this habilitation in order to survive<sup>1</sup>.

The evolution of the system needs more time to be completed and eventually more investigations to be conducted.

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<sup>1</sup> A probable example of this for the next years to come could be represented by fixed-term assistant professors who will not have all the possibility to enter as permanent. Since their positions will expire and they will be by that time around 40 years old or more, a relevant problem of employment will be to be overcome. Even for this, it can be hypothesized that actually the system could favor “semi-insiders” (people who are employees, even though not permanently) toward outsiders (people who are employees somewhere else or have less priority in the informal queue of recruitment, such as for post-docs).

Despite the manifest intention to introduce more meritocracy<sup>2</sup> to the system, in a widely alleged *deceitful collegialism* system (Degli Esposti et al., 2010), the attempt to manage a complex demographic phase in academic personnel structure is probably the most urgent issue at stake. This institution is expected to provide contributions in the next few years as they move toward a general process of downsizing. In fact, strictly connected with the theme of habilitation, there is the question of *organizational chart points* or *punti organico*. This system is a comprehensive system of data to let any public university have, annually, and is a calculation of *points* to be spent for new recruitment (both scholars, managerial, and clerical personnel) in accordance with retirements, performing indicators, and financial conditions.

Actually the *punti organico* system is the rationale that should assure the financial sustainability and the differentiation of universities in a more performance-led criterion. Therefore, habilitation within this framework should just be used as a filter to have fewer pretenders and to filter out those who do not reach some minimum level of requirements. Formally, habilitation does not play any further role. In fact, the total amount of habilitated per year should affect the same chances of recruitment. An examination of previous data revealed that for the year 2013, the Ministry has granted 445.5 points to all Italian public universities, which equals to about 445 positions as full professors or 636.3 positions as associate professors or a

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<sup>2</sup> Actually the main quest to have the best person in an opened position recalls the mertonian assumption of universalism whose one of the most empirical works were made by Scott Long (Long and Fox, 1995; Long 1978).

combination of the two (full professors equals 1.0 point, associates 0.7). This is assuming that no further administrative staff would have been needed. Thus, this issue contains an essential question: reproduction, extinction, or prosperity of scientific (factions of) epistemic communities<sup>3</sup>.

In this paper the first wave – the 2013 second wave has just ended its submission phase – of habilitation is analyzed<sup>4</sup> in order to get the first empirical evidence from who did participate in 2012. The data analysis for reviewing this results is divided into four sections. Beginning with data set one, a description of the construction of the data set is offered. In section two, technical questions regarding the dataset and reliability of the variables that were used are provided for the reader. An illustration of the Italian demographic pyramid follows in section three in order to provide the reader an oversight of the phenomenon of reproduction of scientific communities. Finally, section four provides both frequencies as well as an in depth analyses of an exploitation of the data. In particular, it describes a two-steps regression test that was conducted using the primary hypotheses of worthiness of the evaluations by *insiders* and *outsiders* by controlling for their respective ages as a variable. In this section, some additional illustrations about the rules are also provided in order to assist the reader in better understanding if, and to what

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<sup>3</sup> As Pezzoni *et al.* (2012) pointed out, the list of scientific disciplines has changed over time according to bargaining between official representative of scholars and the ministry. Recently a policy of reduction of the number was pursued in order to avoid high fragmentation.

<sup>4</sup> At the moment of data collection, only a small percentage of results have been released and so forth the universe of the phenomena is not given (epistemic communities are 179).

extent, the concept of worthiness can be applied. Finally, some critical, although preliminary and in progress, remarks about the new institution of the habilitation are offered in the conclusions section.

## 2. METHODOLOGY.

### THE CONSTRUCTION OF A UNIQUE DATASET: METHODOLOGICAL EXPLANATIONS

Data about habilitation and its procedure, which is basically a research and scientific profile evaluation, are totally free and available. Nonetheless they are designed to be seen and not necessarily to be processed statistically. For this reason, a track of the construction of the dataset is provided in the following section followed briefly by a description of the variables used in the analysis.

*Available Data.* Data about employees in Italian universities<sup>5</sup> including both people who tried to get the habilitation and people who did not are publicly available. This information includes such demographics as first and last names, scientific sector, faculty, department, university affiliation, and position (full professor, associate professors, assistant professors (*ricercatori*), fixed-term assistant professors, and statistically minor contractual figures). However, gender (even though this could be inferred from their respective first names), age, or other indices of scientific performance are not provided at the individual level. Considering the recent reforms and fusions, the affiliations concerning

departments and faculties are problematic and were, therefore, not considered in this study.

Conversely, in a different repository belonging to the Ministry, curriculum vitae of people who presented themselves for the habilitation in 2012 is available for review. These two sets of data, however, are not equivocal. For example, one segment of a university may have many employees who did not apply (for instance, full professors do not have many reasons to apply) whereas many other people may have applied without necessarily being affiliated with any Italian university, at least as an employee. To this latter subset, a large portion of these individuals are expected to be post-doctoral students, fixed-termed professors, employees, or other non-standard personnel working in other places (centers with main missions in research and development such as the National Research Council and the like).

Considering that the fiscal code is not provided for both employees and candidates to habilitation, no simple merging of these two datasets could therefore be conducted. To this regard, names and surnames were pasted into unique strings using a final position number ranging from 1 to 14 that served to identify the scientific area of the person. Assuming that any employee could not stay in two areas and that few people may have applied for different sectors belonging to different areas (actually it happened, but numbers are very little), this simple device actually reduced the amount of homonyms. The actual number of identified homonyms was reduced to 138 within both of the two large datasets (around 100.000 rows). These repeating names have therefore, been, disambiguated manually.

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<sup>5</sup> Data about post-doc researchers or lecturers do not match and do not have temporal indications. For this reason, being all these weaker characters, they are considered “outsiders”.

Also at this point, any matching identifiers have been considered valid, thus assuming that errors are almost absent. Moreover, non-matching names from habilitation dataset have also been considered *external* or *outsider* (variables from now on are labeled as *who*). The scientific standing of the latter cannot be assumed to be necessarily inferior of those who are *insiders* (see Table 5 for more information). A final consideration is the indispensable social capital<sup>6</sup> of the externals that can be assumed to be inferior due to, either separately or conjointly, and included both age and distance from the academic communities.

For clarity, a description of the construction of the matrix is now provided<sup>7</sup>. A dataset composed of *employees* in academia, [A] was matched to a dataset made up of “applications” X “attributes concerning the single application” called [B]. [B] has more observations than the actual number of persons involved, since a person has the right to apply to more sectors and/or levels (associate and full).

At this point a merging  $[A] \cup [B]$ , called [C], was done: this step has 93040 observations deriving from 58060 ([B]) applications and 57518 employees ([A]). Total is less than the sum of rows because

<sup>6</sup> Pezzoni *et al.* (2012) refers and stresses the concept of *credit* and operationalize it in a different research design with data concerning for instance the scientific collaborations. Here I don't control for this variable but it is assumed that habilitation ought not to given or denied according to *political capital*. In fact habilitation is *not* a recruitment procedure but only a pre-selection. Moreover their design looks to be more viable for hard sciences and much less for humanities and social sciences, while my aim is to compare scientific disciplines.

<sup>7</sup> The appendix show sources, list of variables used for this work and the diagram here designed.

candidates who are employees in universities match. [C] has three main subjects: people in search of habilitation who are not employees called [C1] ( $[B - A]$ ) made up of applications as observations; not-applying people who are employees [C2] made up of individuals as observation ( $[A - B]$ ); applying people who are employees [C3] ( $[A \cap B]$ ), made up of applications as observation.

This variable (called “who”) has then been considered relevant to understand to what extent the habilitation committees were impartial in affording the habilitation according to this affiliation status. Thus a consequential job was made in order to have a more homogenized dataset.

A matrix [D] was elaborated having only persons as observations, making collapse rows that had the name text in In order to store all of the previous information obtained, 358 dummies (two for each scientific sector, that is, for each couple for the two levels of habilitations) were computed.

So the sum of the rows per person provided the number of applications made by each individual.

Once the results by candidates had been published, other processes were completed in order to insert the productivity variables. This step resulted in [F] providing a row for the analyzed privileges by scientific sector.

*Available Variables.* For this study, the results of habilitation are not just provided as a list of dummy tables (e.g. has/has not attained the habilitation), but instead included three indicators of scientific productivity that are similar to other studies (Ginther & Kahn, 2004). These variables added from the data concerning the evaluations of applications were separated between the hard sciences (areas from 1 to 9) and the soft sciences

(10 to 14<sup>8</sup>). The hard sciences include: (a) an H index (normalized by academic age<sup>9</sup>); (b) normalized number<sup>10</sup> of articles; and (c) normalized number of citations. The soft sciences have: (a) normalized number of books; (b) normalized number of chapters in books and articles; and (c) normalized number of articles published in *top ranked* reviews<sup>11</sup>. In cases where curriculum vitae were stored as pdf files, they were downloaded one by one and may have offered further information such as date of birth, number of projects led or coordinated, professorships held, or other salient information about possible further academic titles (fellowships, editorial memberships, etc.).

Nonetheless, this last source of information, curriculum vitae, was used only to ascertain the ages (for a total of around 7000 observations) of the individuals, due to the difficulty obtaining this information using existing data sources. Regarding the reliability and validity of the data, the three indicators used in this study were assumed to have an

<sup>8</sup> Exceptions, not given here due to not-yet-resealed data concerning the following sectors, are: 8C1, 8E1, 8E2 and 8F1 that don't have bibliometric indices (they are Design and Architecture disciplines); 11E disciplines have bibliometrics (Psychological sectors).

<sup>9</sup> For an in depth analysis of H index by age see Mannella and Rossi (2013).

<sup>10</sup> Normalizations are basically referred to a measure of personal contribution to an output when the latter are signed by more persons.

<sup>11</sup> Having been debated recently about the misuse of citation indices in social sciences, evaluation of research and habilitation in social sciences opted to use a general criteria of peer review. In this case, an attempt was made to discriminate general productivity – alleged to be in most of the cases of modest value, parochial and poor in originality and innovation – from a bargained list per sector of top-ranked reviews.

intrinsic validity of productivity and quality of research, while noting that they cannot tell about networks of collaborations (*social capital* for Pezzoni *et al.* 2012) nor specialization in topics (Leahey, Keith, & Crockett, 2010). The H indexes and articles in top-ranked journals were assumed to measure quite well the quality of scientific production, while the others can be assumed as a good proxy of productivity in terms of quantity of outputs, with uncertainty about its' quality.

### 3. THE EMPLOYEES PYRAMID OF ITALIAN UNIVERSITIES

The possibilities for new *concorsi* (competitions for permanent positions) are strictly associated with the current amount of professors now employed. Projections published by the Minister foster additional data about how many people are supposed to leave for retirement through 2016. This projection is based on the age of each person, since retirement is basically mandatory in higher education by age 70, regardless of the years accrued in service.

An exception to this rule can be a professor's claim for a two year extension in order to continue their work with full titles in their respective chairs. Lately, these procedures, however, are becoming increasingly difficult since applications for extensions are no longer a formal quest and whose decisions are no longer considered quite certainly affirmative. In fact, the last general law (240/2010) tried to reduce these phenomena even though no data was available about the impact of such a change. Moreover, it is even less certain the number of people who are applying for or who will apply in the future as a condition of pre-retirement.

Table 1 *Indicators of Demographics by Some Scientific Sectors and Results of Habilitation*  
(Selected Scientific Sectors are Among Those that Were Published First)

|                              | total #<br>of expected<br>vacancies | ratio of full prof.s<br>over associate prof.s | ratio of full prof.s over<br>associates+ (permanent)<br>assistant prof.s | ratio of associates prof.s<br>over (permanent)<br>assistant prof.s | ratio of attained<br>habilitations in 1° level | ratio of attained<br>habilitations in 2° level | habilitations attained<br>(both levels) / expected<br>vacancies (# persons) | # of total attained<br>habilitations<br>(both levels) |
|------------------------------|-------------------------------------|---|--|--|--|--|---|---|
| 01/A4                        | 32                                  | 1.0100  | 0,5260   | 1,0870   | 43,1%  | 39,4%  | 478,1%  | 153   |
| 02/B1                        | 54                                  | 0.6923  | 0,3172   | 0,8455   | 73,0%  | 78,1%  | 1042,6%   | 563   |
| 02/B2                        | 24                                  | 0.5400  | 0,2983   | 1,2346   | 71,2%  | 69,7%  | 1370,8%   | 329   |
| 03/C1                        | 53                                  | 0.8909  | 0,3443   | 0,6298   | 51,0%  | 51,7%  | 300,0%  | 159   |
| 06/D3                        | 49                                  | 0.8557  | 0,2660   | 0,4512   | 31,1%  | 41,5%  | 336,7%  | 165   |
| 06/E1                        | 38                                  | 1.0256  | 0,3980   | 0,6341   | 29,2%  | 37,3%  | 263,2%  | 100   |
| 07/H1                        | 10                                  | 0.5397  | 0,2482   | 0,8514   | 65,9%  | 52,5%  | 580,0%  | 58  |
| 07/H3                        | 8                                   | 0.8478  | 0,2977   | 0,5412   | 69,7%  | 76,6%  | 1025,0%   | 82  |
| 07/H5                        | 6                                   | 0.7872  | 0,3058   | 0,6351   | 62,1%  | 70,0%  | 883,3%  | 53  |
| 08/A1                        | 28                                  | 1.2273  | 0,5000   | 0,6875   | 34,9%  | 45,7%  | 303,6%  | 85  |
| 08/B3                        | 33                                  | 0.9425  | 0,3923   | 0,7131   | 50,0%  | 44,2%  | 218,2%  | 72  |
| 09/H1                        | 31                                  | 0.8920  | 0,3870   | 0,7662   | 36,9%  | 42,6%  | 877,4%  | 272   |
| 11/A1                        | 27                                  | 1.2083  | 0,4567   | 0,6076   | 38,8%  | 34,9%  | 292,6%  | 79  |
| 11/A3                        | 80                                  | 1.2333  | 0,5000   | 0,6818   | 34,5%  | 40,7%  | 266,3%  | 213   |
| 11/A4                        | 31                                  | 0.7143  | 0,3636   | 1,0370   | 45,0%  | 28,6%  | 458,1%  | 142   |
| 11/C2                        | 26                                  | 1.5952  | 0,7791   | 0,9545   | 37,6%  | 40,3%  | 442,3%  | 115   |
| 11/C4                        | 20                                  | 0.8983  | 0,3786   | 0,7284   | 30,4%  | 44,2%  | 605,0%  | 121   |
| 12/B1                        | 34                                  | 1.6289  | 0,5745   | 0,5449   | 56,1%  | 31,2%  | 264,7%  | 90  |
| 13/A5                        | 8                                   | 2.2143  | 0,8611   | 0,6364   | 63,4%  | 56,5%  | 812,5%  | 65  |
| 14/C1                        | 67                                  | 0.8392  | 0,3125   | 0,5934   | 37,8%  | 29,0%  | 267,2%  | 179   |
| Total of available<br>data   | 659                                 | 1.0291  | 0,4253   | 0,7430   | 48,1%  | 47,7%  | 469,7%  | 3095  |
| Total academic<br>population | 54930                               | 0.8996  | 0,3594   | 0,6653   | n.a.   | n.a.   | n.a.  | n.a.  |

Source: own elaboration on MIUR data. Total academic population refers to all scientific sector (179); Total only to shown sectors

Note 1: for assistant professors only permanent ones are given because the fixed-term assistant professors are still a decisive minority

Even though this phenomenon was definitely not traditionally common, some incidents may continue to occur and may have an impact even if the smallest level of epistemic community is taken into account (few numbers count a lot in lower layers).

Despite all of these caveats, a gross and rounded up number of new positions that can be used in the next few years – more or less during the same years the habilitation will be valid (4 years since the day of publication of results) – can be computed. All estimations here have to assume that, however, new habilitations will be given annually thus creating a chained longitudinal series of people who will have title to apply for associate and full professorships. Hence, larger numbers by sector in the projected year of 2016 (here given in Table 1) equals a stronger struggle for positions.

As indicated in Table 1, the total of employees in Italian universities at the end of 2012 was about 55,000 full time units. The pyramid is quite critical as the ratios among levels may indicate. In fact, for any associate professor there were almost 0.9 full professors, about the same amount as there are currently. For assistant professors, who must all get the habilitation to improve their careers; there are less than three times their ranks compared to full professors (0.36). The associate professors level, though, is about two-thirds the level of assistant professors. Strong differences among scientific sectors, the actual sub-area communities of peers who are claimed to manage themselves through the new rule of habilitation, are therefore very clear. In some cases, there are more full professors than there are associates (ratio over 1). For instance, in the epistemic community 11C2 (Logic, History, and Philosophy of

Science), the number of full professors is very near to the total of the other two layers summed together (0.78). Also, the ratio of associates and assistant professors does not reveal a scattered diversification in the scientific sectors that have been previously analyzed (as a range: max 1.23; min 0.45). Percentages of attained habilitation over the total number of applications can vary from less than 33% to 78%. This is a remarkable difference whose explanation is not easy to identify and whose reasoning may lie on the particular disciplines peculiarities or uses and interpretations of the new institution of habilitation.

An interesting index is the ratio of habilitations given and the vacancies that each scientific sector will experience. To this regard, it can be seen that in many cases the habilitation of a sole wave are two or three times the vacancies of several years (for instance 3/C1). In other cases, the habilitations are more than 10 times the number of expected ceased positions (for instance in 2/B2). Considering the only real number possible<sup>12</sup>, the overall recruitment points for all university and sectors for 2013 could be 445 points that can be used for more than 3,000 habilitations, thus the sectors here are only 20 out of 179. As a result, it is clear that even though there are huge differences between sectors, the winners of habilitations have only overcome a small hurdle; however, they have not accomplished their final endeavor. At the same time, the habilitation here seems to have become a system that signals who can enter (or improve their

<sup>12</sup> [http://attiministeriali.miur.it/media/227960/tabella\\_punti\\_organico\\_2013.pdf](http://attiministeriali.miur.it/media/227960/tabella_punti_organico_2013.pdf).

career) and more importantly, who cannot<sup>13</sup>. This seems especially true for those individuals who are not awarded with habilitation and thus have the minimum requisites to access the habilitation (e.g. you are not that bad, but we don't want you neither as a competitor). This fact is relevant since the next competitions will be hosted locally and will not be on a national level. This procedure might also serve to reintroduce by the by default the antiquated practice of parochialism, with the innovation that a preselected list of competitors had already been excluded.

The most critical point here is the impossibility to renew with the same pace of retirements these scientific communities and thus losing the opportunity of having a stable amount of *young* (as the fixed term assistant professorships are not many until now, the average age of new habilitated and consequently new associate professors will be probably not so young, and most probably already mature) cohorts. It must also be mentioned that the average age of most Italian scholars is already seriously high (medians for full, associate, and assistant professors are respectively: 60, 52, 44 with means of 58.9;

<sup>13</sup> People who tried to get the habilitation and failed are proscribed to participate to the same sector for 2 consecutive years. Future attempts can so forth be done even though minimum requisites are reached without attaining the habilitation. But just for that, a message like this can be interpreted by the loser: "in the better of cases, mind that you are backward in the queue". As recruitment in higher education system will be shortly describe, even this more optimistic interpretation equals to a *de facto* exclusion, *unless priorities in the queue (one's credit over other who could have won now, and hadn't the chance to get a post meanwhile) wouldn't change*. In a logic of factions within a sector, this interpretation is possible.

52.9; 45.4; Rossi 2012a). Thus, all this process of economic efficiency – the expected saving is not relevant since the pyramid has a bulge of people near mandatory retirement age and since traditionally the recruitment in Italy has witnessed long pauses coupled with large waves of open positions (Lissoni et al., 2011) – probably will intensify a problem which is connected to brain drain and capability of an epistemic community to generate new internationally cutting edge knowledge. Even this latter implication is not included as a further analysis, it is essential since average age of human resources in research pertains the capability of epistemic communities to continue to exist (Pezzoni et al. 2012).

#### 4. DATA ANALYSES: WERE COMMITTEES A SOURCE OF MERITOCRACY?

*A First Overview.* As previously described, the construction of the dataset required the researchers to divide the applicants amongst those who were already employed by the university from those who were hoping to obtain tenure.

With this in mind, data in Table 2 helps reveal that the largest portion of employees in universities applied, especially if it is taken into account that full professors do not have a desire to compete for this award (percentage of applying employees in Italian universities is 78.98%).

The impressive amount of applications among employees in universities and from other contexts (or with academic but more *informal* or *weaker* affiliation), possibly suggesting that the first wave might have been interpreted as an occasion to have a try.

Table 2 Description of the Universe: Employees in HEIs and Applicants

|   | a.v.  | %      |
|---|-------|--------|
| a) Employees in HEIs not applying                       | 34978 | 44.67  |
| <i>Full professors</i>                                  | 13239 | 16.91  |
| b) Applying employees in HEIs                           | 22538 | 28.78  |
| c) Applying employees in HEIs (without full professors) | 22538 | 78.98  |
| d) Applying not employees in HEIs                       | 20794 | 26.55  |
| Total (a+b+d)   | 78310 | 100.00 |

Source: own elaboration on MIUR data.

The persons who do not have a position as an employee in a university were revealed to have more of a propensity to apply to more than one sector/level.

This is a quite reasonable occurrence in that their career paths may have not been solidified or their profile may not have perfectly matched those of the Italian academic system. As a result, more attempts and paths could have been chosen.

Data in Table 3 illustrates that employees applying for a professorship in most cases tried only one sector with only three individuals applying to six different sectors/levels in the first level, and only one person applying in seven sectors among the second levels. In contrast, among the *outsiders* the tail is much longer and the percentages of those who limited themselves to only one submission is restricted when compared to their *insider* competitors.

For example, 100 of the persons employed in Italian academia who participated in habilitation, 87.4 and 86.8 respectively, made only one application respectively for first and second level (Table 3).

The same percentages for people who are not inside universities as employees were 81.2 and 79.5, respectively. This can be considered a much more frequent propensity by external submitters to try more options in a tentative way, even though this does not imply weaker scientific standings.

Understanding this implication is critical for the next step of the analysis in that the variable under discussion (*insiders* vs. *outsiders*) is introduced with the indicators of scientific production in order to test if, having same scientific productions, to be a part or not to be a part of academia is a good predictor of the outcome in question: attainment or no attainment of the habilitation.

*Table 3 Number of Applications Submitted by Typology of Actors (Who Variable<sup>14</sup>)  
and by Level of Application (Full Professors and Associate Professor)*

| # of application | first level   |               |               | second level  |               |               |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                  | insiders      | outsiders     | Total         | insiders      | outsiders     | Total         |
| 1                | 8.882         | 3.804         | 12.686        | 12.297        | 14.683        | 26.980        |
|                  | <i>87.42</i>  | <i>81.26</i>  | <i>85.48</i>  | <i>86.82</i>  | <i>79.52</i>  | <i>82.69</i>  |
| 2                | 1.022         | 649           | 1.671         | 1.465         | 2.775         | 4.24          |
|                  | <i>10.06</i>  | <i>13.86</i>  | <i>11.26</i>  | <i>10.34</i>  | <i>15.03</i>  | <i>12.99</i>  |
| 3                | 196           | 159           | 355           | 295           | 701           | 996           |
|                  | <i>1.93</i>   | <i>3.4</i>    | <i>2.39</i>   | <i>2.08</i>   | <i>3.8</i>    | <i>3.05</i>   |
| 4                | 38            | 35            | 73            | 70            | 202           | 272           |
|                  | <i>0.37</i>   | <i>0.75</i>   | <i>0.49</i>   | <i>0.49</i>   | <i>1.09</i>   | <i>0.83</i>   |
| 5                | 19            | 18            | 37            | 32            | 62            | 94            |
|                  | <i>0.19</i>   | <i>0.38</i>   | <i>0.25</i>   | <i>0.23</i>   | <i>0.34</i>   | <i>0.29</i>   |
| 6                | 3             | 7             | 10            | 4             | 26            | 30            |
|                  | <i>0.03</i>   | <i>0.15</i>   | <i>0.07</i>   | <i>0.03</i>   | <i>0.14</i>   | <i>0.09</i>   |
| 7                |               | 4             | 4             | 1             | 6             | 7             |
|                  |               | <i>0.09</i>   | <i>0.03</i>   | <i>0.01</i>   | <i>0.03</i>   | <i>0.02</i>   |
| 8                |               | 1             | 1             |               | 5             | 5             |
|                  |               | <i>0.02</i>   | <i>0.01</i>   |               | <i>0.03</i>   | <i>0.02</i>   |
| 9                |               | 1             | 1             |               | 1             | 1             |
|                  |               | <i>0.02</i>   | <i>0.01</i>   |               | <i>0.01</i>   | <i>0.00</i>   |
| 11               |               | 1             | 1             |               | 2             | 2             |
|                  |               | <i>0.02</i>   | <i>0.01</i>   |               | <i>0.01</i>   | <i>0.01</i>   |
| 15               |               | 2             | 2             |               | 1             | 1             |
|                  |               | <i>0.04</i>   | <i>0.01</i>   |               | <i>0.01</i>   | <i>0.00</i>   |
| 18               |               |               |               |               | 1             | 1             |
|                  |               |               |               |               | <i>0.01</i>   | <i>0.00</i>   |
| Total            | 22,538        | 20,794        | 43,332        | 22,538        | 20,794        | 43,332        |
|                  | <i>100.00</i> | <i>100.00</i> | <i>100.00</i> | <i>100.00</i> | <i>100.00</i> | <i>100.00</i> |

Source: own elaboration on MIUR data.

<sup>14</sup> For simplicity, labels of “who” variable are sometimes different as the meaning of this same variable can be of being “insiders” of “outsiders” of the system, or more technically but less shortly, employees and not-employees in universities as researchers.

An examination of the data affirms that having the same standing of curriculum vitae, both an insider and an outsiders should have the same chances of being accredited as habilitated in that a recruiting agent – both an institution or a unit like a department – cannot claim in this step a question of compatibility in terms of research interests, previous partnerships, nor credits meant as relations between the candidates and the seniors.

This is defined as *political capital* according to Pezzoni et al. (2012). In fact, the habilitated will not necessarily work with the members of the commission even though the committees can shape and influence the features of their epistemic community by giving or not giving this title. It is possible, then, to hypothesize that judgments based strictly only of scientific production indicators may not happen due to an *enclosure* mechanism that will favor those who are already inside the system at the expense of those who have not yet entered the system.

These can mean then for those candidates with a strong standing in terms of scientific outputs, the result could even result in a change of employment from a non-Italian-academic entity to the Italian university system itself.

As previously stated, this exclusion mechanism can strengthen the informal institution of the queues of pupils listed by affiliation with their *inbreeding* processes (Pezzone et al. 2012). Even so, habilitation could overcome this mechanism, replacing this practice with mere worthiness based on production or rethinking all this in a reconfiguration of the discipline based on the power of peers.

This process cannot be tested in this study, however it is presented as a formal reminder to those people who already have a better position and/or are already with one step inside the system that they would somehow a receive a reasonable chance even though it is not coherent with the juridical system and the specific norms ruling the institution of habilitation. In fact, habilitation sees indices of individual performance as the main criteria of evaluation, yet the three indices it aims to use filters out people below some of the indicated *good* threshold while at the same time it is expected to filter in people over that same *good* threshold.

Even though peer reviews of selected scientific outputs can affect the evaluation of candidates having the same numbers of outputs, and even though further credits in one's curriculum vitae may be relevant, some descriptive statistics by *insiders* and *outsiders* are now indispensable.

Equally important, the *outsiders* have higher standard deviations (with the exception of number of articles in top-ranked journals for science and humanities candidates:  $SD = 4.023$  for *insiders* and  $SD = 3.018$  for *outsiders*) in all indicators of productivity, both in the hard sciences as well as in the social sciences and humanities (see Table 4). There is, however, a clear difference between candidates in scientific disciplines belonging to hard sciences (measured by bibliometric indicators) and the others.

For instance, the *outsiders* in hard sciences have – just as a mean – better indicators, while in social sciences and humanities the evidence reveals the opposite: *insiders* have higher productivity in all three indicators.

Table 4 Descriptive Statistics of Productivity by Typology of Candidates  
(Insiders and Outsiders)

|                                 | Insiders |        |         | Outsiders |        |         |
|---------------------------------|----------|--------|---------|-----------|--------|---------|
|                                 | obs.     | mean   | S.D.    | obs.      | mean   | S.D.    |
| articles                        | 2718     | 36.926 | 31.706  | 2591      | 37.203 | 34.2455 |
| citations                       | 2717     | 49.998 | 66.749  | 2591      | 55.659 | 77.8591 |
| H index                         | 2717     | 10.314 | 5.9263  | 2591      | 10.593 | 6.2509  |
| books                           | 1027     | 3.051  | 2.4370  | 1320      | 2.831  | 3.3634  |
| chapters & articles             | 1027     | 21.339 | 16.1746 | 1320      | 17.051 | 25.8337 |
| articles in top ranked journals | 1027     | 2.850  | 4.0235  | 1320      | 1.698  | 3.0177  |

Source: own elaboration on MIUR data

For this reason, the use of the variable *who* is quite problematic since the outsiders are in any case, even after splitting hard and soft sciences, a heterogeneous group whose composition cannot be analyzed easily. Both Figure 1 and Table 5 reveal the distribution of ages by *insiders* and *outsiders*. Overall, *outsiders* are younger by 4 years and the first and last quartiles are also both younger by 3 years. The *outsiders*' distribution has an even higher kurtosis and a slightly higher skewness level.

Literature about age and productivity is nonetheless an old preoccupation, especially in the United States. Clemente (1973) discussed findings dating back to the 1940s and 1950s affirming that early publications would be a good proxy of potential for a one's career thus early publication is a sign of high career research outputs. More recently, Bozeman, Dietz, and Gaughan (2001) reported that by focusing only in hard sciences and technology laden professions, nowadays post-doctoral students (which would be here *outsiders*) are not the best potential candidates for research and development since career trajectories bring young adults to have their best laboratory

experiences, even outside academia. To this regard, this differentiation between who is *in* and who is *out* academia may have some relevance even though the United States and Italy differ in many respects.

Levin and Stephan (1991) reported that productivity cannot depend on age due to various scientific sectors and, especially, having different decades and different paces of productivity over a scientists' life course. The pace of accrued outputs is not constant and empirical evidence brought these researchers to highlight the relevant role of investments in research and development. Even though the numbers of scientific outputs were eligible only if no more than 10 years old (since 2003 until 2012 is included), the numbers of publications may be affected by the author's younger age, especially for younger scholars trying to get the habilitation for associate positions<sup>15</sup>.

<sup>15</sup> Some Committees displayed information about personal years spent as research active, considering the starting age (first publication) minus official maternal/parteral leaves. Having no gender purposes here and making the regressions by scientific disciplines, this aspect was omitted.

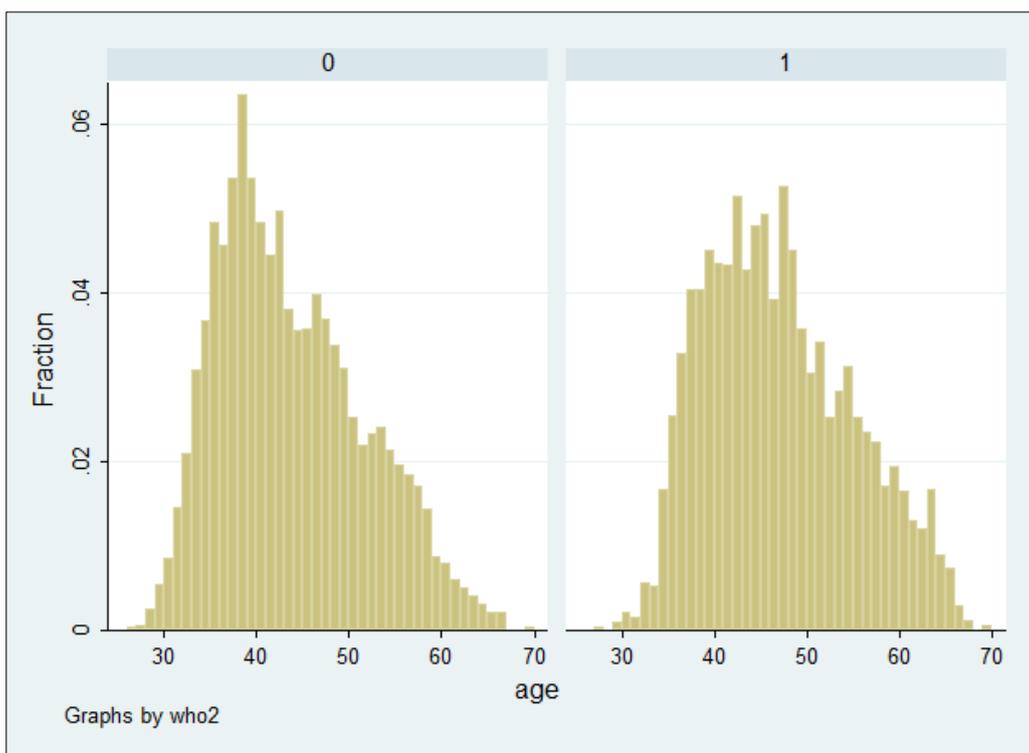
Table 5 Descriptive Statistics of Age of Applicants by Typology of Candidates

|          | Insiders | Outsiders |
|----------|----------|-----------|
| Obs.     | 3427     | 3582      |
| 25%      | 40       | 37        |
| Median   | 46       | 42        |
| 75%      | 52       | 49        |
| Mean     | 46.604   | 43.280    |
| S.D.     | 8.0047   | 7.9062    |
| Skewness | 0.39138  | 0.51002   |
| Kurtosis | 2.39577  | 2.56251   |

Source: own elaboration on MIUR data

For these reasons, and even considering the reduced availability of information for this dataset, age was used to check (through a Heckman two steps treat) the *insider/outsider*

variable, with more recent findings reporting concerns between the links of age, cohorts, and periods tested in science productivity (Hall, Mairesse, & Turner, 2005).



Source: own elaboration from MIUR dataset

Figure 1. Distribution of candidates by age and insiders (labeled 1) and outsiders (labeled 0)

*What really matter to get the habilitation?* Tables 6a and 6b provide the final stage of this analysis for this study. The identities of applicants, labeled as *who*, is inserted into a full model of several regressions with the three indicators along with the *who* variable that was previously treated for age. Indicators of productivity are used as they appear from the personal folders of the candidates: continuous variables measuring the quantitative/qualitative production of scientific production.

Committees had to check if the medians<sup>16</sup> were reached or not in order to decide. This resulted in a person being judged *habilitated* only if two of the three indicators had been reached or if performance indicators surpassed the medians among the sector in question.

These indicators included those candidates whose production over the last 10 years does not overtake neither one median of his/her sector or should be awarded with habilitation only if other criteria (always publicly expressed by the committees, but they refer to a peer review job sustained by the further credits detailed in the candidates curriculum vitae) did not lead to a different inducement. Hence, the hypothesis concerning scientific production as being not the only predictor of

attainment of habilitation does indeed deserve a more in depth analysis<sup>17</sup>.

However, I would caution that an apparent identical hypothesis could be as follows: people who are already in academia as employees may be successful if just minimum threshold are covered but are not so strong in relative terms when compared with other scholars.

This second version differs from the original hypotheses in that it excludes *who* is, apparently from indicators, good but is not recognized as eligible to compete to become part of the community.

An additional consideration thing is though must be given to those eligible people who are barely good, but are recognized as already have obtained some position to enter as a peer in the academic community.

Last, the theoretical assumption here is that the Italian system, even though deeply reformed by the last general Law, remains regarding the career ladder a *regular employee track* and did not opt to change into a *contract track* or a *tenure track* (Enders, 2001).

To this regard, tables 6a and 6b helps to identify which committees discriminated or did not discriminate against candidates by their current positions.

<sup>16</sup> “Medians” turned recently to become ynonimous of “thresholds” in Italian debate. The national Agency for evaluation and accreditation published these values by scientific sector before the release of results: [http://www.anvur.org/index.php?option=com\\_content&view=article&id=253:asn-indicatori-e-relative-mediane-it&catid=13:sitoit&Itemid=314&lang=it](http://www.anvur.org/index.php?option=com_content&view=article&id=253:asn-indicatori-e-relative-mediane-it&catid=13:sitoit&Itemid=314&lang=it) These values as said are subjected to peer review made by the members of commissions and could be contractied.

<sup>17</sup> At the same time, an apparent identical hypothesis could be as follows: people who are already in academia as employees may be successful if just minimum threshold are covered but are not so strong in relative terms if compared with other scholars. This second version differs because one thing is to exclude *who* is, apparently from indicators, good but is not recognized as eligible to compete to become part of the community; other thing is to let consider eligible people who are barely good but are recognized as already somewhere in the queue to enter as a peer the community.

Table 6a – Logistic regressions for habilitation attained: models with scientific production indicators plus status of “insiders/outsideers” dummy variable treated by Heckman two steps by age (bibliometric scientific sectors)

|        |  | obs. | model  | Articles |         | Citations |         | H_index  |         | Insiders/outsideers |           | age      |          |
|--------|--|------|--------|----------|---------|-----------|---------|----------|---------|---------------------|-----------|----------|----------|
|        | label of sector                              |      |        | coeff.   | s.e.    | coeff.    | s.e.    | coeff.   | s.e.    | coeff.              | s.e.      | coeff.   | s.e.     |
| 1_A4_1 | Mathematical                                 | 144  | 0.9389 | 0.000    | (0.002) | -0.002    | (0.015) | 0.005    | (0.015) | -0.176              | (0.740)   | 0.019    | (0.013)  |
| 1_A4_2 | Physics                                      | 231  | 0.0619 | 0.003    | (0.003) | -0.006*** | (0.002) | 0.028    | (0.019) | -0.958              | (0.749)   | 0.028**  | (0.013)  |
| 2_B1_1 | Applied Physics                              | 230  | 0.0000 | 0.002*   | (0.001) | -0.000    | (0.004) | 0.022**  | (0.009) | -0.297              | (0.239)   | 0.052*** | (0.013)  |
| 2_B1_2 | of matter                                    | 505  | 0.0000 | 0.001    | (0.001) | -0.001**  | (0.001) | 0.046*** | (0.008) | -0.027              | (0.156)   | 0.050*** | (0.010)  |
| 2_B2_1 | Theoretical                                  | 139  | 0.0000 | 0.002**  | (0.001) | 0.000     | (0.001) | 0.025**  | (0.242) | -0.326              | (0.242)   | 0.056*** | (0.016)  |
| 2_B2_2 | Physics of matter                            | 330  | 0.0000 | 0.003    | (0.002) | 0.001     | (0.007) | 0.036*** | (0.009) | -0.103              | (0.303)   | 0.036*** | (0.012)  |
| 3_C1_1 | Organic                                      | 104  | 0.0000 | 0.004*   | (0.002) | -0.000    | (0.001) | 0.036*   | (0.019) | -0.407              | (0.726)   | 0.040    | (0.025)  |
| 3_C1_2 | Chemistry                                    | 205  | 0.0000 | -0.001   | (0.002) | -0.001    | (0.001) | 0.072*** | (0.015) | -0.273              | (0.466)   | 0.030*   | (0.015)  |
| 6_D3_1 | Blood diseases,                              | 121  | 0.0000 | 0.002**  | (0.001) | -0.001    | (0.001) | 0.034*** | (0.009) | 0.164               | (0.275)   | 0.049*** | (0.018)  |
| 6_D3_2 | Oncology and Rheumatology                    | 306  | 0.0286 | 0.001    | (0.002) | 0.000     | (0.001) | 0.035    | (0.023) | -4.240              | (13.718)  | 0.003    | (0.010)  |
| 6_E1_1 | Cardiovascular                               | 96   | 0.1610 | -0.001   | (0.002) | 0.000     | (0.002) | 0.028    | (0.025) | -1.031              | (1.280)   | 0.023    | (0.018)  |
| 6_E1_2 | and Thoracic Surgery                         | 193  | 0.9821 | 0.003    | (0.019) | -0.002    | (0.021) | 0.052    | (0.201) | -16.743             | (144.037) | 0.002    | (0.013)  |
| 7_H1_1 | Anatomy and                                  | 41   | 0.0000 | 0.002    | (0.006) | -0.006*   | (0.004) | 0.109*** | (0.022) | -0.153              | (0.846)   | 0.043    | (0.048)  |
| 7_H1_2 | Physiological Veterinary                     | 59   | 0.0000 | 0.013*** | (0.006) | -0.011*   | (0.006) | 0.133*** | (0.034) | -0.645              | (0.497)   | 0.053    | (0.030)  |
| 7_H3_1 | Infectious and                               | 33   | 0.6382 | -0.001   | (0.006) | -0.001    | (0.004) | 0.054    | (0.054) | 2.765               | (4.567)   | -0.022   | (0.037)  |
| 7_H3_2 | Parasitic Diseases of Animals                | 77   | 0.0088 | 0.002    | (0.003) | 0.000     | (0.003) | 0.039*   | (0.022) | 0.496               | (1.039)   | 0.018    | (0.020)  |
| 7_H5_1 | Clinic Surgery                               | 29   | 0.0828 | 0.015    | (0.009) | -0.006    | (0.010) | 0.060    | (0.071) | 0.056               | (1.511)   | 0.056    | (0.069)  |
| 7_H5_2 | and Animal Obstetrical                       | 50   | 0.1337 | 0.002    | (0.015) | -0.025    | (0.028) | 0.195*   | (0.105) | 2.403               | (2.893)   | -0.024   | (0.032)  |
| 8_A1_1 | Hydrology,                                   | 63   | 0.0000 | 0.015**  | (0.007) | 0.004     | (0.004) | -0.009   | (0.031) | 1.138***            | (0.362)   | 0.115*** | (0.039)  |
| 8_A1_2 | Hydraulics, Hydraulic and Nautical Buildings | 138  | 0.0000 | 0.006    | (0.007) | -0.005    | (0.005) | 0.082*** | (0.028) | -0.080              | (0.198)   | 0.103*** | (-0.022) |
| 8_B3_1 | Building                                     | 60   | 0.7700 | 0.011    | (0.029) | 0.003     | (0.029) | 0.049    | (0.127) | -5.131              | (22.697)  | -0.006   | (0.030)  |
| 8_B3_2 | techniques                                   | 94   | 0.0011 | -0.007   | (0.007) | 0.00      | (0.007) | 0.097*** | (0.032) | 1.242               | (1.453)   | 0.018    | (-0.021) |
| 9_H1_1 | Elaboration of                               | 260  | 0.0011 | -0.006*  | (0.004) | -0.000    | (0.002) | 0.064*** | (0.023) | 1.863               | (3.677)   | 0.007    | (-0.014) |
| 9_H1_2 | Information Systems                          | 412  | 0.0000 | -0.006** | (0.003) | -0.003**  | (0.001) | 0.083*** | (0.013) | -0.227              | (0.631)   | 0.019*   | (0.012)  |

Source: own elaboration on MIUR data

\* p<0.10

\*\* p<0.05

\*\*\* p<0.01

Table 6b. Logistic Regressions for Habilitation Attained: Models with Scientific Production Indicators Plus Status of Insiders/Outsiders Dummy Variable (not-Bibliometric epistemic communities)

|         |  | obs. | model  | # books |         | # articles or chapters |         | # articles in top-ranked journals |         | insiders/outsiders |          | age      |         |
|---------|--|------|--------|---------|---------|------------------------|---------|-----------------------------------|---------|--------------------|----------|----------|---------|
|         |  |      |        | coeff.  | s.e.    | coeff.                 | s.e.    | coeff.                            | s.e.    | coeff.             | s.e.     | coeff.   | s.e.    |
| 11_A1_1 | Medieval History                               | 49   | 0.9769 | 0.004   | (0.024) | -0.001                 | (0.005) | -0.012                            | (0.027) | 0.473              | (0.639)  | 0.047    | (0.032) |
| 11_A1_2 |  | 172  | 0.0000 | 0.010   | (0.014) | 0.010***               | (0.003) | 0.053***                          | (0.017) | 1.396              | (2.302)  | 0.009    | (0.015) |
| 11_A3_1 | Contemporary History                           | 116  | 0.0000 | -0.002  | (0.011) | 0.006***               | (0.002) | 0.073***                          | (0.020) | 0.559*             | (0.330)  | 0.037**  | (0.016) |
| 11_A3_2 |  | 425  | 0.0000 | 0.016** | (0.008) | 0.005***               | (0.002) | 0.119***                          | (0.014) | 0.002              | (0.263)  | 0.028*** | (0.008) |
| 11_A4_1 | Book and Documents Sciences; Religion Sciences | 111  | 0.0006 | -0.007  | (0.015) | 0.000                  | (0.002) | 0.072***                          | 0.003   | -2.498             | 0.000    | 0.052*** | (0.017) |
| 11_A4_2 |  | 322  | 0.0000 | 0.005   | (0.009) | 0.008***               | (0.002) | 0.044***                          | (0.011) | 1.074              | (0.808)  | 0.016    | (0.016) |
| 11_C2_1 | Logic, History and Philosophy of Science       | 85   | 0.0001 | 0.002   | (0.014) | -0.001                 | (0.001) | 0.047***                          | (0.011) | 0.633              | (0.583)  | 0.031*   | (0.018) |
| 11_C2_2 |  | 205  | 0.0000 | 0.011   | (0.014) | 0.005**                | (0.002) | 0.082***                          | (0.012) | 1.386              | (1.087)  | 0.017    | (0.012) |
| 11_C4_1 | Aesthetics, Languages and Philosophy           | 69   | 0.0008 | 0.010   | (0.013) | -0.002                 | (0.002) | 0.071***                          | (0.016) | 0.241              | (0.415)  | 0.045**  | (0.023) |
| 11_C4_2 |  | 226  | 0.0002 | 0.020** | (0.010) | 0.005**                | (0.002) | 0.033***                          | (0.012) | 1.020              | (0.889)  | 0.013    | (0.011) |
| 12_B1_1 | Commercial and Nautical Law                    | 57   | 0.1085 | 0.036   | (0.051) | 0.005                  | (0.007) | 0.005                             | (0.015) | 2.183*             | (1.240)  | -0.036   | (0.026) |
| 12_B1_2 |  | 186  | 0.3906 | -0.010  | (0.017) | -0.002                 | (0.004) | 0.013                             | (0.011) | 1.786              | (1.303)  | -0.020   | (0.016) |
| 13_A5_1 | Econometrics                                   | 37   | 0.9795 | -0.074  | (0.425) | -0.009                 | (0.038) | 0.053                             | (0.102) | -7.097             | (70.301) | 0.003    | (0.026) |
| 13_A5_2 |  | 60   | 0.1748 | -0.048  | (0.075) | -0.000                 | (0.008) | 0.041*                            | (0.022) | 0.348              | (1.576)  | 0.014    | (0.023) |
| 14_C1_1 | Genera, Juridical and Political Sociology      | 117  | 0.0000 | 0.001   | (0.014) | 0.007***               | (0.002) | 0.028***                          | (0.008) | 0.027              | (0.354)  | 0.052**  | (0.021) |
| 14_C1_2 |  | 356  | 0.0000 | -0.011  | (0.008) | 0.000                  | (0.002) | 0.034***                          | (0.006) | 0.351              | (0.811)  | 0.008    | (0.010) |

Source: own elaboration on MIUR data

\* p<0.10

\*\* p<0.05

\*\*\* p<0.01

All the three indicators of productivity as well as the *who* variable were used regardless of the extent to which these indicators were above or under the medians for each candidate. The dummy variables regarding being insiders or outsiders as previously explained is part of the model with the four predictors. Tables 6 are split to differentiate the hard sciences from the soft sciences. Committees under investigations are 40: 20 scientific sectors by two levels. Full professors are identified as (\_1) and associates as (\_2). Additionally, eight of the sectors are in social sciences and humanities with the

remaining number of sectors belonging to the hard sciences. As identified in the tables, 15 of the 24 models in the hard sciences have a statistically significant difference whereas nine models do not show a statistically significant difference. In 11 committees, there is a statistically significant difference compared to the other 5 committees that did not reveal statistically significant difference. The non-bibliometric sectors revealed similar results.

In the hard sciences, 14 committees out of 24 have the normalized H index of Hirsch as a good predictor of getting the habilitation (as

expected, the association is always the higher the index, the higher the probability to get the habilitation): 10 times at  $p < 0.01$  level. Thus, seven times the number of articles can predict the outputs of attainment of habilitation. In two of these cases, the association is negative (Elaboration of Information Systems, both levels). In only five times did the number of gross citations help predict the phenomena, and in four cases the coefficient was negative. The only positive coefficient that was significant was at the 0.01 level (Mathematical Physics, associate level). In only one case, (Hydrology, Hydraulics, Hydraulic and Nautical Buildings, full professor level), the *insider/outsider* variable had a significant and strong coefficient, with the advantage of insiders.

Overall, conjointly 26 times did an indicator which is formally part of the decision making predict the verdict of habilitations. Also, only in 7 committees predictors were not found. Generally, the H index looks to be, in most of the cases, a stable and affordable predictor for getting the habilitation.

In the social sciences (Table 6b), only three committees are left without predictors (Econometrics, first level; Commercial and Nautical Law, second level; Medieval History, first level). Among those with sound predictors, 12 times the high number of articles published in top-ranked journals is a predictor for the attainment of the habilitation. Furthermore, seven times the number of other articles and chapters in books is associated positively with this outcome. In only two committees were the numbers of books somehow relevant. In any case, even in social sciences and humanities, that cannot have bibliometric indicators, an analogous hierarchy between the three indicators was

noted: articles in top-ranked journals (H index for hard sciences) are better than articles and chapters in books (number of citations in hard sciences), though they subsequently are better than the number of books (number of articles). In both the hard sciences and not-bibliometric sector the *insider/outsider* does not play any role, except for the few sectors that should be analyzed in more detail.

## 5. CONCLUSIONS AND DISCUSSIONS ABOUT HABILITATION

The Italian academic system in the recruitment issue was described as a "multiple processes of negotiations" (Nelken, 2009, p.?), even though recent evidence about institutional reforms, for instance the role of evaluation, shows that recruitment is changing into a differently bargained process (Reale & Marini, 2013). This new relation is based on a *maussian gift* (Fassari, 2009) or the *political power* (Pezzoni et al. 2012) and is very powerful, but this perspective tells only a part. Why a big *don* professor should show such generosity has long been the subject of debate? To some extent, it's a matter of showing his/her power to his/her peers, as an indirect index of strength. It is indeed even a question of letting go of one's group at the expense of others. It is, last but not least, a pay-back for many services and little jobs the junior already had given. In fact, Nelken (2009) affirms, showing in depth knowledge of the Italian system, especially of social sciences in which old professors must provide evidence to be able to give a post in order to have someone under them do many regular jobs (i.e. supervise undergraduates, accomplish minor phases of research, etc.).

The asymmetrical relations beyond this reciprocal obligations and its parochialism are not even a new issues in these studies (Perotti, 2002), nor just an Italian practice, since *inbreeding* is an old issue and not just an Italian one (Combes, Linnemer, & Visser, 2008), often intertwined with the stratification of universities and departments (McGee, 1960; Kirchmeyer, 2005). In any case, in this traditional framework the role of the habilitation cannot already be defined clearly.

It must be said that, despite the Italian public opinion and even scholars' common debate about Italian higher education, to have a *sponsor* and to have a career in universities is nothing but a regular matter (Kyrchmeyer, 2005; Musselin, 2004; Reskin, 1979). In fact, there are contexts as well rules to prevent *bad collegiality* (Enders, 2001). Even though in the Italian system *internal market* (Musselin, 2005) is formally denied, the allegations of parochialism and nepotism by *protégé* haven't ceased so far. This first wave let emerge a further problem, which pertains more with legitimation of the evaluation itself. Perhaps the words by Bourdieu (1975) can more eloquently summarize the phenomenon:

In a highly autonomous scientific field, a particular producer cannot expect recognition of the value of this products ("reputation", "prestige", "authority", "competence", etc.) from anyone except other producers, who, being his competitors too, are those least inclined to grant recognition without discussion and scrutiny. This is true de facto: only scientists involved in the area have the means of symbolically appropriating his work and assessing its merits. And it is also true de jure; the scientist who appeals

to an authority outside the field cannot fail to incur discredit (p. 23).

It can also be said that further discussion is mandatory. In fact, some habilitation committees have been sued formally (appeals by not-habilitation awarded to regional administrative courts – namely TARs – have already occurred and have already been rejected) and informally (through tough debates within some epistemic communities or scientific disciplines, which is quite the overlapped translation of this concept<sup>18</sup>). An analysis of these data cannot cause one to shrink from some discussion of the topic. Following the suggestion in Bourdieu's passage, usually, scientific communities should react harshly to appeals to external actors, like appealing for justice to tribunal or exposing one's case to punish the system in a pillory. One explanation to these phenomena may concern cultural aspects while others may argue that some traits of the weak state's institutions play a role. At least, the possibility of a dominant civil servants' ethos (where achieving to climb the career ladder is expected to happen just by seniority) to respect of those more typical of scholars (based on prestige accrued through scientific outcomes and intellectual acknowledgement) could be envisaged. Explanations of this phenomenon go beyond the possibilities of this work.

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<sup>18</sup> A comprehensive and up to dated list of both these sort of appeals and debates are listed here: <http://www.roars.it/online/documentazione-asn-e-vqr/>. In some cases, such as in sector 11A4 (Book and Documents Sciences; Religion Sciences, here analyzed and among those with found predictors), the case was brought in the national Parliament for an interrogation concerning the procedures and criteria adopted by the Commission.

Whatever the cause, the new habilitation doesn't seem, especially in some not-bibliometric sectors, to be a pacific exercise of evaluation because the appeals and the debate are too massive to be banished as marginal facts. In fact, allegations and critiques already emerged and these show that this new institution may have weak points besides its slowness. A specific, not statistical, example is the case of *pro-veritate*<sup>19</sup> judges in 11A4 sector. In this sector, *pro-veritate* was appealed to much more often if compared to all other sectors here taken into account. Generally, this extra judge was practically a mere exception<sup>20</sup>, while in 11A4 it became quite a systematic way to give – always to the same person – the power to decide. This looks to reduce the collegial negotiations to a personal domain over a whole community. In any case, this mentioned example only reinforces the need to pursue further investigations upon careers, recruitment and evaluation in higher education.

If the system of *concorsi* could have been seen as a panel game within the epistemic community that could regulate itself any time a *concorso* happened (with the capability to give and change meta-rules in the mid long run), habilitation looks to have an interesting role because it is managed by few people and just one or two persons are able to don't afford the habilitation (committees are

composed of 5 members and to get the habilitations a candidate must get a positive evaluation from at least 4 members). Being a one-step more for recruitment, habilitation wouldn't give more efficiency to the system but could give a contribution for the overall effectiveness of the recruitment process.

Summing up, the way the habilitation has worked could be subjected to further analyses and techniques, included different approaches<sup>21</sup>. These data, however, look to be quite sound to let say that the indicators of productivity, especially those measuring better the *quality of research made*, let emerge in quite all the committees here studied, a reasonable evaluations. Unfortunately very little can be said about the committees were the variables here used don't explain the outcome of the attainment of habilitation. As a matter of fact the habilitation tries to reformulate the *human* and *élite* component of the *tribes* of scholars (Becher & Trowler, 2001) by allowing in the next steps the local competitions for permanent positions to have pre-selected pools of candidates, relying implicitly to filter out poor candidates, included those already with permanent positions (assistant professors and associate professors) and here define *outsiders* but notwithstanding with some years already committed to research and teaching in tertiary education.

So for, the change from a collegial into a more *managerial* pattern, as seen before in other contexts (Harle, Muller-Camen, & Collina, 2004), cannot be considered yet

<sup>19</sup> *Pro veritate* evaluations can be freely appealed by the committees on pursuit of Law 240/2010 (Gelmini), art. 16 (dedicated to habilitation), paragraph 3, letter (i). These evaluations to be valid have to be published integrally and with authors.

<sup>20</sup> Over 12628 application here analyzed so far, only 38 times this appeal happened; in both levels of 11A4 it happened 37 times: 18 times for the second level (5.6% of all applications in its sector) and 19 times for the first level (17.3% of all applications).

<sup>21</sup> A not suited approach here is the gender one, which was already addressed for the analysis of women's careers in higher education (Bagilhole, Goode, 2001; Duberleya, Cohen, 2010; van den Brink, Benschop, Jansen, 2010).

accomplished. If a paradigmatic change will happen, it would be more probably due to the combination of the role of habilitation with other factors such as accountability, evaluation rationales, and quality assurance. All of these factors whose effectiveness by time shall be studied further with more data and especially with some longitudinal evidence under investigations.

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APPENDIX

Sources. Full detail information can be downloaded as in the first case, or pasted from drop-down menu in the following two cases.

Matrix [A]: <http://cercauniversita.cineca.it/php5/docenti/cerca.php> observations are individuals

Matrix [B]: <http://abilitazione.miur.it/public/pubblicacandidati.php> observations are single applications (age and gender can be grasped here or from next source)

Vectors of scientific outputs and results of habilitations: <http://abilitazione.miur.it/public/pubblicarisultati.php> observations are single applications

List of variables in [F] N=78310:

|   |  |
|---|--|
| ID name                                   |  |
| SSC (358 variables)                       | dummy (attainment; not attainment)                           |
| Who                                       | applying insiders; not-applying insiders; applying outsiders |
| Ruolo                                     | positions of the insider in academia                         |
| Number of applications made               |  |
| Scientific area of employee               | 1-14   |
| Number of articles                        | continuous   |
| Number of citations                       | continuous   |
| H Index                                   | continuous   |
| Number of books                           | continuous   |
| Number of chapters and articles           | continuous   |
| Number of articles in top ranked journals | continuous   |
| Pro-veritate judgement                    | dummy  |
| Sex                                       |  |
| Age                                       |  |

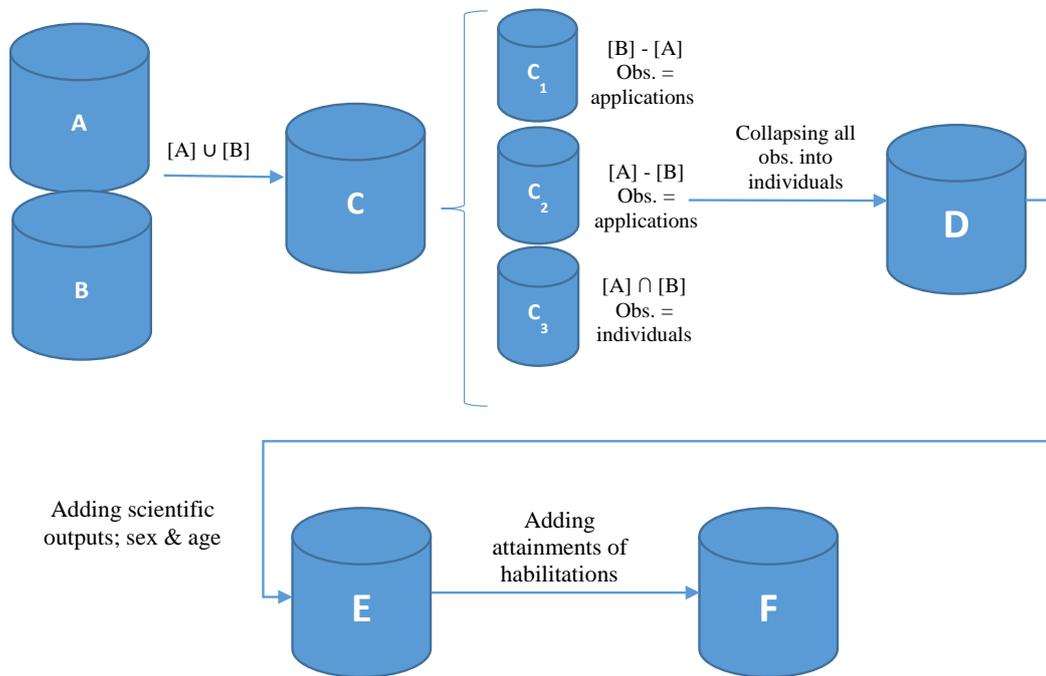


Figure 1A. Diagram of construction of the database

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