

HUMAN RESOURCES RECRUITMENT IN ITALIAN PUBLIC SECTOR POST COVID 19: DEMOGRAPHIC CHARACTERISTICS, GENDER COMPOSITIONS, EDUCATION FOR A NEW PUBLIC EMPLOYER BRANDING. FOCUS ON ISTAT EXPERIENCE

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Abstract. The present study aims to examine the attractiveness of the Public Administration to young generations and technical-scientific professional profiles, with specific reference to the case of Istat. After observing the characteristics of public sector workers, attention is focused, in a comparative perspective, on the competitive procedures managed by FormezPA in the biennium 2021-2022 and by Istat, considering the specificity of the organization and the required professional profiles. In particular, the analysis concentrates on the demographic, educational, and professional characteristics of the applicants. The obtained results allow for reflection on the public sector's ability to attract new professionals, providing insights for the evaluation of the adopted recruitment policies.

1. Introduction

The prolonged freeze on turnover of public sector workers, resulting in an aging reference population, and the concurrent need to modernize the Public Administration (PA) as a whole, are the main factors driving the recruitment of new professionals and skills. These needs have been further accelerated with the adoption of the National Recovery and Resilience Plan (PNRR). The purpose of this study is to observe the attractiveness of the public sector in relation to technical-scientific expertise through the analysis of competitions initiated for the recruitment of specialized professionals, leveraging the informative potential inherently contained in the application forms. The analysis of this information allows for useful insights into the attractiveness of an organization, the effectiveness of recruitment processes, and their distortions. The attractiveness will be observed by comparing the selection procedures initiated by FormezPA for the recruitment of technical-scientific competencies in the period 2021-2022¹, as outlined in paragraph 3, with the selection carried out by the Italian National Institute of Statistics (Istat) in 2022 for the hiring of personnel with technical-statistical skills, as described in paragraph 4. The

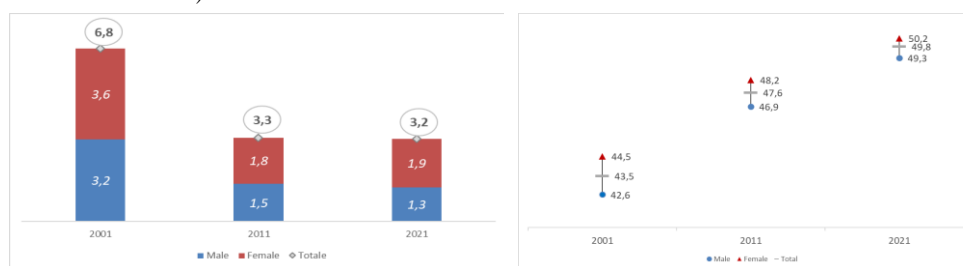
¹ FormezPA is, today, the only entity that makes available data and information on competition participants/winners, through the creation of a data warehouse of the selections managed and the dissemination of data in aggregate form.

compared procedures differ in various aspects (employment contract type, required educational qualifications, etc.), however, the aim is not to compare them but, as mentioned earlier, to assess the PA's ability to present itself as the employer of choice for scientific professionals, currently scarce in central administrations and local authorities, albeit present within those administrations with easily identifiable scientific institutional purposes.

2. Public administration: an aging workforce

The PNRR makes a double bet on the PA, on one hand supporting a reform plan for the public sector (simplification and digitization of products and processes; development of streamlined organizational and recruitment procedures; enhancement of skills), and on the other hand entrusting the implementation of the Plan to individual Administrations, each responsible for their respective areas of competence, requiring them to undergo a "revolution" in activity management (setting mandatory timelines for achieving objectives; monitoring activities; financial management of relevant investments; coordination of implementing entities; reporting, etc.). This second aspect represents the most complex factor, demanding a high level of management capacity from the involved administrations to handle this "new normal" and the cultural change required to govern it. However, the current state of the public administration, characterized by a decrease in workforce and a general increase in the average age of workers, sets the context for the interventions, actions, and challenges faced by individual institutions. In 2021, there were a total of 3,238,968² public employees in Italy, which has decreased by approximately 37,000 units over the past 10 years³.

Figure 1 – PA employees (a) by sex (a) and average age (b) (Years 2001-2021; Absolute values).



Source: own elaboration on State General Accounting Department data.

² See Rgs, Annual Accounts, 2022.

³ Adjusted for changes in the composition of the S13 list.

Furthermore, the freeze on turnover, which underlies the reduction in the number of public employees, along with changes in pension access provisions, are the main factors that have led to a significant increase in the average age in public employment. From 2001 to 2021, the average age for the overall personnel has increased from 43.5 to 49.8 years, (Figure 1a and b), with significant differences among different sectors.

If in 2001, in all sectors, no male and female reached the average age of 50 years, and in fact were quite far from it, in 2021, everyone has crossed this threshold, with except for women in the Healthcare sector who are just below it. Observing also the median age, in the same years, the trend is confirmed. In particular, the median age increases from 43.3 year in 2001 to 51.2 years in 2021. Comparing the average with median age it is possible to observe as the public employees in 2001 belonged to the younger age groups (average age 43.5 vs median 43.3) while across twenty years the employees belonged to the older age groups (average age 49.8 vs median 51.2). The same trend, *mutatis mutandis*, is confirmed also for male and female.

Given the large number of personnel in the older age groups, which provides an implicit representation of future retirements, the entry of new personnel into the PA would allow not only to maintain the personnel replacement rate at levels that enable the functioning of administrations but also the entry of younger individuals and new skills necessary to support the ongoing changes in the public sector. All this, together with the PNRR, represents a great opportunity for the renewal of the PA, which requires careful planning that takes into account present and future needs and allows them to be met through fast and effective competition procedures. For the first time, the process of modernizing the PA - which has its origins in the 1990s - attributes central importance to "people" and invests in generational turnover within the public sector. All these elements have led to the implementation of innovative recruitment policies compared to the past, both in terms of the number of positions offered through competitions, the methods of conducting competition procedures, and the type of candidates sought. Regarding this last aspect, the most novel element is the attempt to incorporate highly specialized technical personnel, especially those with scientific and mathematical skills, into institutions. However, this challenge has proved to be particularly difficult, resulting in a significant lack of coverage for the advertised positions in the mentioned areas, especially in sectors that have been accustomed for years to dealing with legal, administrative, and accounting professions.

3. PA modernization: centrality of recruitment amid uncertainty

In the biennium 2021-2022, after the acute phase of the pandemic events, the focus shifted to launching competitions for the recruitment of specialized personnel

within the Public Administration. Referring to the 124 competition procedures managed by FormezPA (from January 1, 2021, to June 30, 2022), nearly 40,000 positions were advertised, both for legal-administrative profiles and technical-scientific profiles, predominantly for hiring in central administrations (over 76%). The advertised positions, slightly over half of them being fixed-term (21,167, accounting for 53%), mostly pertain to extraordinary recruitment for personnel to implement the Pnrr, characterized—compared to the past—by a high demand for technical profiles (22.9%). For all the published calls during the reference period, in fact, the majority of sought-after professional figures correspond to highly specialized profiles (engineers, computer scientists, statisticians, architects, geologists, economists, cultural experts), thus requiring a university degree as a minimum access requirement (over 78% of the procedures are aimed at graduates).

In order to get a clear picture of the audience actually involved, the demographic and educational characteristics of the candidates participating in the selections and, consequently, of the successful and eligible candidates were analyzed.

In general, the sheer number of applications submitted (over 2 million) seems to highlight the continuing high level of interest in the civil service⁴. There were, however, many "multiple" applications, i.e., applicants who applied for more than one procedure; while 641 thousand were "unique" applications (applicants for only one competition)⁵. In particular, almost 265,000 candidates submitted applications for participation in multiple selection processes, accounting for 41% of the total candidates (of these, approximately 45% participated in two competitions; 32.7% in 3 or 4 competitions, and 23.4% - almost 60,000 candidates - submitted applications for more than 5 competitions). Multiple applications constitute an important factor to consider, given - as described below - the number of withdrawals recorded, which partly involved individuals who emerged as winners in multiple processes.

From the analysis of the demographic characteristics of the target audience, the average age of the competition participants stands out, approximately 40 years, especially in relation to the overall objective of countering the trend of an increasing age among public workers. However, from the distribution of candidates by age groups, a significant percentage of young candidates is evident: over 29% of the candidates are under 30 years old, and over 41% are aged between 30 and 40 years. With regards to gender, there is a notable prevalence of women: 365,000 women (58%) applied for at least one competition, compared to 276,000 male candidates. The gender breakdown of candidates confirms the greater inclination of women to find potential employment opportunities within the Public Administration, a preference also confirmed by the current composition of public workers.

⁴ The number of applications is adopted as an indicator of PA attractiveness; see OECD, *Public employment and management 2021: the future of the public service*.

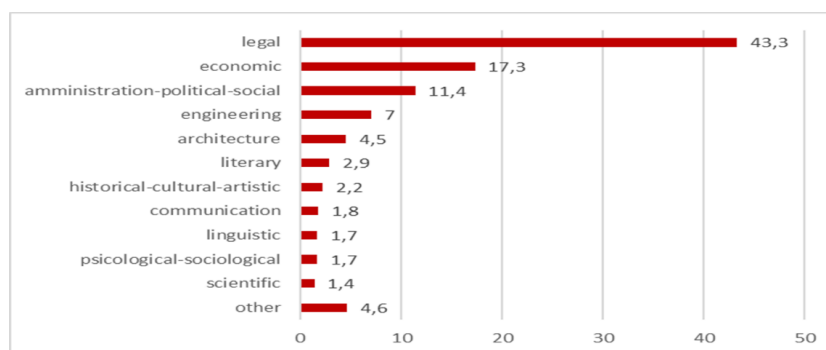
⁵ Cf. FormezPA, Annual Report 2022.

Information on the candidates' residence shows significant territorial differences: the majority of candidates reside in the Southern regions (over 68%); approximately 24% come from the Central regions, with the Lazio region being the most represented, housing around 20% of the candidates. This primacy can be attributed primarily to the fact that the majority of central administrations are located in that region.

Regarding educational qualifications, as mentioned earlier, over 80% of the candidates hold a university degree. For the purpose of this analysis, it is also interesting to focus on the thematic areas of the presented university degrees.

The preponderant field is "Legal" (over 43%), followed by "Economics" (17.3%). Degrees in computer science, statistics and mathematics, on the other hand, seem to represent the "great absentees" among the profiles considered by FormezPA, included under the generic heading "other fields" as they are present with frequencies of less than 1%⁶ (Figure 2).

Figure 2 – Candidates by subject area of undergraduate study (%).



Source: own elaboration on FormezPA data

The analysis of educational qualifications with respect to gender, on the other hand, while highlighting the prevalence of women with high educational qualifications (63% of the candidates hold a master's or specialist or old-school degree), confirms the negative record, already highlighted at the national level, on the low presence of female graduates in Stem (Science, Technology, Engineering and Mathematics) disciplines, who account for only 13%⁷.

⁶ Data on the educational characteristics of the participants in the selections by profile of "Computer Scientist/Statistician" also highlight that the majority of those involved turn out to have a degree in engineering (See FormezPA Report, 2022).

⁷ In 2021, 24% of young adults (aged 25-34) with a tertiary degree have a bachelor's degree in scientific and technological fields, commonly known as STEM (Science, Technology, Engineering, and Mathematics) degrees. The percentage rises to 33.7% among men (one in three graduates) and drops to 17.6% among women (one in six graduates), highlighting a significant gender gap. There are territorial differences for STEM graduates, particularly

With respect to the candidate population, the analysis of the main characteristics of the winners/awardees confirms the trends described, with the exception of the average age of those involved, which, for the winners/awardees, drops to 36 years old compared to the 40 years average age of the candidates. Women continue to represent the largest component (approximately 58.5%); the most common educational qualification is a master's degree, with the legal field remaining predominant (almost 60%). The presence of graduates in STEM disciplines, on the other hand, is quite limited: 3.5% of the eligible candidates have a degree in engineering, 2% in architecture, and only 0.3% in mathematics/statistics⁸.

As a result, it is precisely for these professional areas that the needs of the administrations have not been fully met: for the profile "Computer Statistician" the vacancies are more than 37% of the total available; for the profile "Engineer/Architect" we observe a failure to fill positions for more than 70% of the total. If we take the Cohesion South competition as an example, for about 2,800 fixed-term positions (3 years), we note that the total filling of posts was achieved only for the profiles "Legal Administrative Expert" and "Expert in Territorial Design". There were 1,245 vacancies left for the "Technical Expert" profile (engineers and architects), 722 for the "Management, Reporting and Control Expert" profile, and 12 for the "Expert Computer Analyst" profile⁹.

The failure to achieve the objectives of the recruitment process for technical-scientific skills within central and local administrations leads to an overall reflection that cannot be limited solely to the scarcity of such professional profiles in the job market and the resulting competition from the private sector. These reasons, as we will see in the next paragraph, are not confirmed when observing the competition for the recruitment of personnel at Istat.

4. The specificity of recruitment of specialized profiles: the Istat case

In March 2022, Istat launched a public competition for the permanent recruitment of 100 research institution technical collaborators (CTERs), aimed at individuals with secondary school diplomas possessing appropriate statistical and digital skills, with the aim of placing new staff in the Institute's statistical production and technical support structures. The competitive procedure ended in December 2022, with the publication of the final ranking list.

In accordance with the recommendations of the OECD¹⁰, the selection procedure was guided by the criteria of specificity and speed of the process. Regarding the first

among males: the percentage ranges from 30.8% in the South to 36.4% in the North. (Istat, Levels of Education and Occupational Returns - 2021).

⁸ See FornezPA, Annual Report 2022.

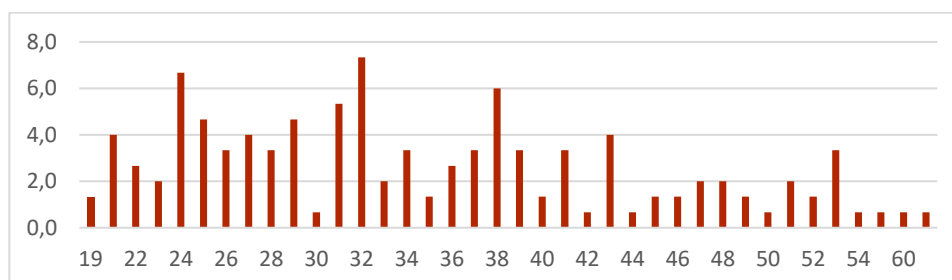
⁹ See FornezPA, Annual Report 2022

¹⁰ See OECD, Recommendation of the Council on Public Service Leadership and Capability, OECD/LEGAL/0445

criterion, a more suitable recruitment system has been outlined to assess the required specialized skills, giving priority to sector-specific selection tests (focused on subjects related to the required specializations: computer science, statistics, public and digital communication, old and new media, organization and activities of Istat), which are more capable of identifying the necessary abilities and competencies. As for the second aspect, priority has been given to the speed of the competition procedure and the subsequent hiring process, considering the general tendency of individuals with specialized skills to abandon the recruitment process when competitors offer job positions more quickly. The competition was conducted online, allowing for a reduction in completion times, cost management, logistical facilitations for candidates, and the efficient handling of a large number of participants. Approximately 17,000 applications were submitted; the number of candidates attending the written test exceeded 1,600; 100 candidates were successful and 50 were eligible.

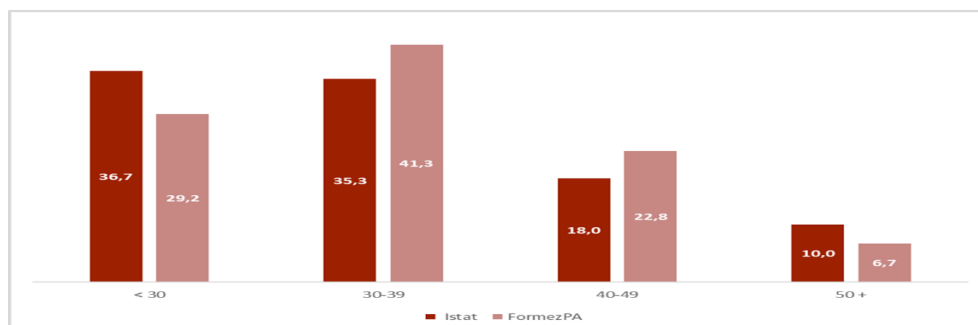
The winners and eligible candidates are mostly young: they have an average age of less than 35 years. In particular, 55% of them are between 19 and 35 years old, with higher frequencies at 32 and 24 years old (7.3% and 6.7% respectively) (Figure 3).

Figure 3 - Winners/eligible candidates by individual age (%).



Source: own elaboration on Istat data

Comparing the data from the Istat competition with FormezPA, there is a higher presence of young individuals among the winners/eligible candidates at Istat compared to those observed by FormezPA (Figure 4). In the case of the Istat competition, the most numerous age group is the youngest one, from 19 to 29 years old, while for the procedures managed by FormezPA, the largest number of candidates falls between the ages of 30 and 39.

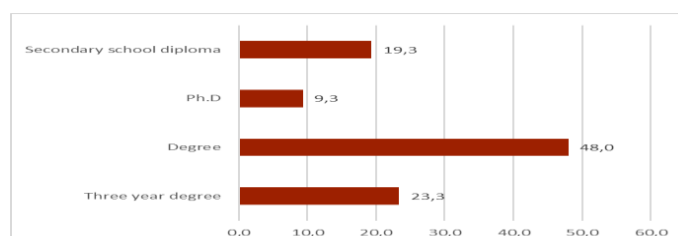
Figure 4 – Winners/eligible candidates by age groups (%).

Source: own elaboration on Istat data and FormezPA data

Regarding gender, the winners/eligible candidates at Istat are predominantly men (66%), in contrast to the composition of all public employees and the previously mentioned FormezPA data (42% men). This divergence is partly attributed to the predominant fields of study in different procedures: in the case of Istat, as described below, there is a prevalence of graduates in STEM disciplines, in which the number of female graduates is lower compared to males. On the other hand, in the case of FormezPA competitions, STEM disciplines are marginally represented.

Regarding geographical origin, information about the residence of the winners/eligible candidates of the Istat competition highlights a predominance of Central Italy (slightly less than 53% of the individuals), influenced, however, by a strong presence of residents in the metropolitan area of Rome. This data is striking both when compared to the evidence from the data released by FormezPA (where 61% of the eligible candidates reside in the South of Italy) and in relation to the expected possibility for new hires at Istat to be assigned to the territorial offices of the organization, present throughout the national territory. However, considering that the central headquarters of the Institute is located in the city of Rome, there is undoubtedly a strong correlation between the work location and the residence of the individuals involved. Lastly, it is worth noting that Northern Italy continues to show the least interest in public employment, with 11.3% of the winners/eligible candidates in the Istat competition and only 8% in the FormezPA competitions.

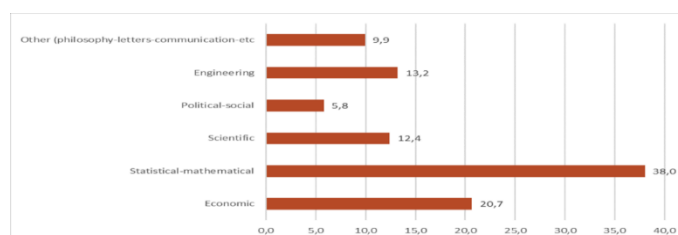
Regarding educational qualifications, as previously mentioned, the Istat competition required candidates to have a high school diploma. However, the analysis reveals that over 80% of the winners/eligible candidates hold a higher educational qualification than what was required for the competition. In particular, when examining all the educational degrees presented by the individuals, it emerges that the majority of winners/eligible candidates (48%) have a master's degree, specialist degree, or an equivalent degree under the old education system (Figure 5).

Figure 5 – Winners/eligible candidates by educational qualification (%).

Source: own elaboration on Istat data

In absolute values, 86 individuals among the winners/eligible candidates have completed their university studies, and out of these, 14 have obtained a doctoral degree. The high level of education compared to what is required for the CTER (Technical-Scientific Researcher) position is also confirmed by the description of the main professional experiences of the candidates. Many of the winners/eligible candidates have gained experience in research (in public institutions, universities, and private organizations); many have had teaching experiences in secondary schools (mainly in scientific fields); many come from data analyst roles in the private sector. In particular, about 30% have reported previous experiences in other public administrations, and over 37% come from private research organizations and institutions.

Furthermore, concerning the thematic areas of the degrees obtained by the winners/eligible candidates, there is homogeneity among the individuals. The most frequent university study field is "statistics-mathematics" (38%), followed by the "economic" field (figure 6). However, there is no representation of the legal field among the winners/eligible candidates; none of them hold degrees in legal disciplines.

Figure 6 – Subject areas of degrees awarded (80% of winners/eligible).

Source: own elaboration on Istat data

In particular, it is interesting to highlight the preponderance of scientific profiles: overall, graduates in Stem disciplines accounted for more than 63% of Istat competition winners/eligible candidates ("statistical-mathematical", "engineering" and "scientific" fields). This is a very important figure, both with regard to the

achievement of the expected results of the competition and with regard to the overall trend of national competitions, in which, on the contrary, the recruitment of specialized professional profiles showed - as described - significant criticalities.

5. Recruitment in the Public Administration: a branding issue as well

The analysis carried out so far shows how the factors influencing the dynamics of public employee recruitment are diverse and heterogeneous. An allusion to how the Public Administration presents itself cannot be overlooked. Therefore, it is necessary to ask whether the Public Administration, as a preferred employer, is doing enough to enhance the attractiveness of public work. Probably not. Too little attention is paid to promoting a brand that appeals to potential candidates with values, motivation, and pride in contributing to the public good. There is almost no definition and dissemination of the factors that contribute to attracting and retaining qualified employees, which, according to the OECD, are areas that need investment in order to develop an effective and reliable public service¹¹. Private organizations have long understood the importance of building a positive image of their activities, which is a minority approach in the public sector. The public sector is not accustomed to considering competition in the job market as a foundational element of organizational success¹². The interest of Public Administrations in branding, understood as a strategy aimed at making the organization's identity attractive, is indeed a relatively recent phenomenon¹³, connected to changes in the role of the State and the increased involvement of third parties in public action, as well as the scarcity of certain specific professional skills, there is emerging interest in forms of branding related to human resources management. This is because a positive perception of the institution encourages high-quality and high-quantity applications. The modernization of the Public Administration, therefore, requires the development of common branding strategies for the entire public sector, while at the same time differentiating them based on the individual institutions involved. The starting point is understanding what candidates might find attractive in working for a particular organization (*attraction*) and using it to communicate an employer brand.

In the case of Istat, the construction of an attractive reputation as an employer is now a key element in the organization's recruitment strategy. In this regard, interesting insights emerge from Irma De Marco's research¹⁴, launched in April 2023 and conducted on a sample of students from public and private universities, aimed

¹¹ See OECD, cit.

¹² R. Ingrassia, *L'employer branding nelle organizzazioni pubbliche*, 2017.

¹³ A. Wareaas, *Can public sector organizations be coherent corporate brands?*, Marketing Theory, 8, 2008.

¹⁴ I. De Marco, "Employer branding in Public Administration. The Istat case study" graduate thesis in Public Administration Economics and Management, Bocconi University.

at identifying possible dimensions of attractiveness of the Istat¹⁵. The initial data highlights Istat's excellent placement as the reference institution for statistical production in our country. In fact, 96% of the respondents stated that they were aware of the Institute and its activities. Among them, 72% have used Istat data, and 14% have participated in initiatives/activities organized by the organization, such as training internships, seminars, and conferences. 70% of the interviewees believe that working at Istat can be interesting due to the relevance of the Institute's activities to their educational background, as well as their expectations regarding the development of skills and competencies in a research-oriented organization. When evaluating the attractiveness of the organization, dimensions such as *development value* (attractiveness related to growth opportunities within the organization and future career prospects), *application value* (attractiveness linked to the opportunity to apply one's knowledge), and *interest value* (attractiveness of an organization associated with the job content, innovative work methods, and the stimulating nature of the work environment) prevail.

The findings described in the survey are also confirmed by the evidence from the Istat competition experience, which shows a high participation of technical-scientific profiles. In contrast to the overall disinterest observed at the national level in the procedures managed by FormezPA, there is a greater engagement of young individuals, a high involvement of people with STEM degrees, even for positions that require qualifications lower than a university degree, and full coverage of available positions. The Istat experience highlights that the specificity of the organization seems to have attracted an audience that identifies with the core activities of the Institute. This audience exhibits diverse professional experiences but shows great homogeneity in terms of educational profiles. On the other hand, the disinterest towards other Public Administrations appears to stem from an image of a public sector founded solely on administrative and legal professions and tasks, as evidenced by the predominant educational and training profiles among candidates in competitions managed by FormezPA, rather than a wider variety of roles and functions that characterize current public institutions.

6. Conclusions

The need to meet specialist requirements has compelled the Public Administration to engage with the private sector. The initial results achieved through procedures for recruiting technical profiles necessary for the implementation of the

¹⁵ The questionnaire is structured in 4 sections and captures information about the respondent and study background, knowledge of Istat, and interest in working at the Institute. As of July 2023, about 600 students from 18 public and private universities had participated in the survey. The sample consists of 55.3 percent females and 44.7 percent males. The average age of the respondents is 22 years old. The most represented degree programs are Economics and Statistical Science.

National Recovery and Resilience Plan (PNRR) have not been positive. However, these difficulties cannot be solely attributed to the lack of such professionals within our society, and it is overly simplistic to identify competition from the private sector as the sole cause of the lack of attractiveness of the public sector.

To achieve the objectives of public sector renewal, it is necessary to develop proactive branding and recruitment strategies that effectively communicate the purpose, activities, and reliability of a work environment capable of meeting the recognition needs of the various professional profiles present within it. To overcome the emerged challenges and improve the planning capacity of the public sector, it is also crucial to understand the relevant contexts and analyze the data available to administrations. This includes data concerning internal personnel as well as ongoing selection procedures, which can provide valuable information for adopting data-driven strategies. In this way, recruitment processes can be aligned with the real functional needs of administrations and the changes taking place in the public sector during this transition period.

Acknowledgment

We would like to thank Dr. Antonella Bianchino (Istat) for helpful suggestions and support in the data analysis of the research *Employer branding in Public Administration. The Istat case study*.

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