

THE FIRST VICTORY: AN EMPIRICAL SURVIVAL STUDY OF CAREER DYNAMICS IN THE ITALIAN JUDICIARY¹

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Abstract. This study investigates judicial career mobility in Italy, focusing on the probability of judges attaining managerial or semi-managerial roles. Using a comprehensive dataset of aspirants and winners of competitions for such roles, we combine exploratory and statistical analyses to uncover structural patterns and differences in career progression.

Demographic, professional, and institutional variables were considered, including gender, age, service length, office of origin/destination, office type and size, regional location, and the availability of positions. Additional variables, such as average evaluation time, annual staff numbers, and judicial district data, were further computed to enrich the analysis and create a unique database.

A detailed descriptive analysis reveals that judges tend to apply for roles within their geographic area and in similarly sized offices. Origin-destination matrices further illustrate these mobility preferences.

A key novelty of this work is the application of survival models to estimate the “survival to victory” curve: the probability that a judge has not yet obtained a managerial or semi-managerial role over time. The curve remains flat for the first 20 years—when such roles are legally inaccessible—then declines sharply, reaching a 50% survival rate at 45 years of service.

The analysis has been carried out also by stratifying by gender providing a novel empirical evidence on how gender and seniority interact to shape career trajectories within the Italian judiciary.

1. Introduction

Understanding the career dynamics of judges is essential for evaluating the functioning and effectiveness of judicial institutions. Yet in Italy, as in many other countries, empirical research on the judiciary has been severely constrained by a lack of systematic data. This paper presents the first comprehensive dataset tracking the careers of employed Italian judges, offering a novel and detailed view into judicial mobility, appointment outcomes, and competition for leadership roles across the system.

¹ The views and opinions expressed are those of the authors and do not necessarily reflect the official policy or position of the Italian National Institute of Statistics - Istat.

Constructed from administrative records and competition notices issued by the High Council of the Judiciary (CSM), the dataset covers more than 55,000 applications for managerial and semi-managerial positions between 2007 and 2022. It includes detailed information on applicants' demographics, positions held, assessment outcomes, application histories, and institutional characteristics of the offices involved. This is, to our knowledge, the first empirical database of its kind in the Italian context, and one of the few in Europe offering such depth and breadth on judicial career paths.

The relevance of judicial career analysis has been increasingly acknowledged in the international empirical research (Ploscowe, 1934; Mayoral *et al.*, 2014; Jäckle, 2016; Banasik *et al.*, 2022). Studies have examined the role of political affiliation, gender, and professional background in judicial appointments and promotions (e.g., Schneider, 2005; Garoupa *et al.*, 2012, Aiello *et al.*, 2024, Giacotti *et al.*, 2024), though such investigations are rare, often due to data constraints (Azaria *et al.*, 2025). Some existing work has looked at career incentives and performance evaluation in judicial systems (Antonucci *et al.*, 2014), but few have had access to detailed, individual-level data. In the Italian case, despite the centrality of the CSM in managing judicial careers, research on how judges move through the ranks, what positions they compete for, and who eventually succeeds has remained mostly descriptive or institutional in nature (Rullo, 2022; Aguiar Aguilar *et al.*, 2024). The dataset presented here makes it possible to go further and engage in rigorous statistical and time-dependent analysis of career dynamics.

This paper makes two distinct contributions. First, we provide a detailed description of the dataset, highlighting its structure, coverage, and the types of information it includes. Through a series of exploratory analyses, we illustrate the richness of the data by documenting patterns in applications, success rates, age and gender dynamics, and institutional mobility across geographic and functional dimensions. Second, we demonstrate the analytical potential of the data by applying a survival model to estimate the probability and timing of a judge's first "victory", defined as the first successful appointment to a managerial or semi-managerial role. Using the Kaplan-Meier method, stratified by position type and gender, we model the temporal dimension of competition outcomes, showing how judges "survive" in the system before achieving promotion. This modeling effort is not only methodologically appropriate for censored career data but also serves as a concrete example of how the dataset can inform questions about access, meritocracy, and advancement in the judiciary.

The focus on managerial and semi-managerial functions is particularly relevant in the Italian context, where these roles are filled through competitive procedures overseen by the CSM, and represent key steps in career advancement. The assignment of such functions is based on evaluations of merit and managerial

aptitude, yet how these criteria translate into outcomes over time — and who tends to succeed — has rarely been analyzed through a statistical lens, where the focus is more on the performance of the judges (e.g., Guerra and Tagliapietra, 2017; Nissi *et al.*, 2019; Mazzocchi *et al.*, 2024; Di Vita *et al.*, 2024). Our approach allows time to quantify delays, bottlenecks, and differences in career trajectories within the judiciary.

This study, therefore, on one side offers a descriptive account or a technical modeling exercise; on the other side, it lays the foundation for a new line of empirical research into judicial careers in Italy — one grounded in data, driven by statistical reasoning, and attentive to institutional realities.

The remainder of this paper is structured as follows. Section 2 describes the dataset and its construction. Section 3 presents key results from the exploratory analysis. Section 4 introduces and discusses the survival model and its findings. Section 5 concludes with reflections on the broader implications of this work and potential future research directions.

2. A primer on the Italian judiciary database

2.1 Data source and description

Empirical research on judicial careers in Italy has long been hampered by the absence of structured and accessible data. In this context, the dataset developed and employed in this study represents a significant and original contribution. Constructed through a detailed integration of administrative records published by the CSM, this dataset offers the first longitudinal and individual-level resource enabling systematic analysis of judges' career trajectories, competition outcomes, and professional characteristics over a fifteen-year period (2007–2022).

The core of the dataset consists of 55,591 application records, corresponding to 3,084 public competition notices published for 3,117 managerial and semi-managerial positions across the judiciary (Table 1). These positions include top roles (e.g. president of court, public prosecutor) as well as semi-managerial roles with intermediate responsibility. Each application record links the candidate to a specific competition, capturing both the demographic and professional attributes of the applicant and details about the office and position being competed for.

Crucially, the dataset identifies whether a candidate won the position, enabling an event-history structure suitable for survival and longitudinal analysis. From these records, a panel of 5,078 unique judges was reconstructed, allowing us to track the professional paths, application histories, and appointment outcomes of individual magistrates over time.

In addition to core application data, the dataset includes a rich array of contextual variables: demographics (date of birth, gender, professional function at the time of

application), career assessments (periodic evaluations, up to seven per judge, with timing and outcomes), institutional variables (size and staffing levels of judicial offices, type and location of each published position, and number of available managerial roles by office and year), application dynamics (number of applications per judge, type of positions applied for managerial/semi-managerial, origin and destination offices, and geographical mobility).

Data construction involved extensive cleaning and harmonization. Applications prior to 2007 were excluded due to regulatory changes in that year (Law 111/2007) affecting eligibility criteria. Positions for which no information was available about the appointed judge (e.g. newly created roles) were also filtered out. Approximately 0.5% of records were excluded due to missing or incomplete career information.

Table 1 – Number of published notices from 2007 to 2022 by office type.

Type of office	Managerial	Semi-managerial	Total
Court of Cassation	191		191
General Prosecutor's Office at the Court of Cassation	33		33
National Anti-Mafia Directorate	3	2	5
Superior Court of Public Waters	8		8
Court of Appeal	74	538	612
General power of attorney	76	52	128
Court of first instance	369	962	1.331
Public Prosecutor's Office at the Court	345	229	574
Juvenile Court	61		61
Public Prosecutor's Office for minors	71		71
Surveillance court	70		70
Total	1301	1783	3084

2.2 Exploratory analysis

This dataset enables multiple levels of analysis. For example, origin-destination matrices capture patterns of mobility between different types of judicial offices; age and gender breakdowns help identify differences in career timing; and application volumes shed light on competitiveness across offices and functions. Moreover, the capacity to compute longitudinal variables — such as time in service before first appointment, frequency of applications, and career interruptions — enables statistical modeling of career dynamics previously inaccessible to researchers. Let us get in detail of the potential information to be drawn from the data.

An initial look at the data reveals a substantial variation in competition intensity across judicial offices and position types. On average, each published position attracts 18 applicants, with a median of 13 and an interquartile range between 8 and

22. However, these numbers conceal significant disparities. The Court of Cassation, for instance, sees the highest applicant-per-position ratio, averaging 47 candidates per managerial position. Among prosecutorial offices, small-sized Public Prosecutor's Offices and large metropolitan ones also stand out, averaging 27 and 22 applicants respectively.

When disaggregating by type of position and type of office, we observe that managerial roles consistently attract more applicants. Besides the Supreme Court (Corte di Cassazione) receives an average of 47 candidates per managerial post, the National Anti-Mafia Directorate (DNA) attracts 25 applicants for semi-managerial positions and 11 for managerial ones. Similar intensities are found in the Public Prosecutor's Offices at the Court, where 25 and 20 candidates compete on average for managerial and semi-managerial roles, respectively.

Geographical breakdowns further confirm this pattern. The central regions of Italy are the most competitive: managerial and semi-managerial roles in Public Prosecutor's Offices in central Italy attract 36 and 28 applicants per position, respectively. Similarly, managerial positions in the Courts of Appeal in this region receive around 25 applicants each.

In the 87% of cases, magistrates apply for positions representing a higher function than their current role, while only 13% apply for equivalent roles. This reflects a strong upward mobility motivation within the judiciary.

To better understand patterns of institutional mobility, we analyse origin-destination matrices (OD) that compare an applicant's office of origin with the type of office to which they are applying. The OD matrix (row percentages) shows that 73% of judges working in Courts of first instance apply for managerial or semi-managerial roles within the same type of court, indicating a preference for internal mobility (change of location or function) over cross-institutional change. Similar patterns emerge for prosecutors: 34% of applicants from the Juvenile Prosecutor's Office apply to the Public Prosecutor's Office at the Court, 13% to the General Prosecutor's Office at the Court of Appeal and 29% to the Juvenile Prosecutors office.

Conversely the OD matrix, column percentages, reveals the composition of applicant pools for each office type. For instance, 73% of applicants for positions in the Public Prosecutor's Office at the Court come from the same type of office, with 11% from the General Prosecutor's Office and 7% from the Courts of first instance. For juvenile prosecutorial positions, 31% of candidates come from Public Prosecutor's Offices at the Court, and 21% from juvenile institutions.

A similar origin-destination matrix was constructed for competition winners, showing that 77% of winners from Courts remained in the same type of institution, while 81% of winners from Juvenile Prosecutor's Offices stayed within their

institutional category. These findings suggest limited cross-institutional promotion, pointing to a segmented structure of career mobility.

Between 2007 and 2022, a total of 3,084 competition notices were published: 1,301 for managerial and 1,783 for semi-managerial positions. Notably, this exceeds the currently active positions (490 managerial and 829 semi-managerial), indicating a high turnover in managerial posts. The Courts of first instance and the Public Prosecutor's Offices at the Court are the most frequent publishers of both types of positions. Overall, 55,591 applications were submitted during this period by 5,078 individual judges, implying an average of 11 applications per magistrate. The majority of applications came from judges with ordinary functions (70%), and most of them targeted managerial positions in central Italy (20%) or semi-managerial positions in the south (22%).

Applicant age is another key dimension of career dynamics. The average age at the time of application is approximately 58 years, both for the total applicant pool and for successful candidates. Unsurprisingly, judges applying for semi-managerial roles tend to be younger than those targeting managerial ones, with a gap of around 4–5 years.

Figure 1 shows that for managerial roles, there is no consistent age gap between applicants and winners across years. By contrast, Figure 2 reveals that for semi-managerial roles, winners are consistently older than the average applicant, suggesting that experience may be a more decisive factor for these roles.

Age also varies by gender and function. Women are, on average, younger than men when applying. Judges with out-of-role or ordinary functions tend to be younger than those already holding semi-managerial or managerial roles. Interestingly, this age gradient persists even among winners, reinforcing the idea that career advancement is correlated with seniority and institutional experience.

Mobility patterns also reflect regional preferences. Most judges apply to offices within their own geographical division. For instance, 72% of applicants to central Italian offices originate from the same region, with 18% from the south.

Institutional size is another important factor. Applicants from large or metropolitan offices tend to seek similar-sized institutions, while those from small or medium-small offices often aim to remain within that structure. For example:

- 67% of applicants from large offices apply to large offices.
- 50% of applicants from small offices prefer to remain in small offices, and 21% aim to move to large offices.

This pattern must be interpreted in light of the higher number of positions published in small offices, which structurally shape applicant flows.

Figure 1 – Average age of applicants and winners of managerial positions by year of resolution.

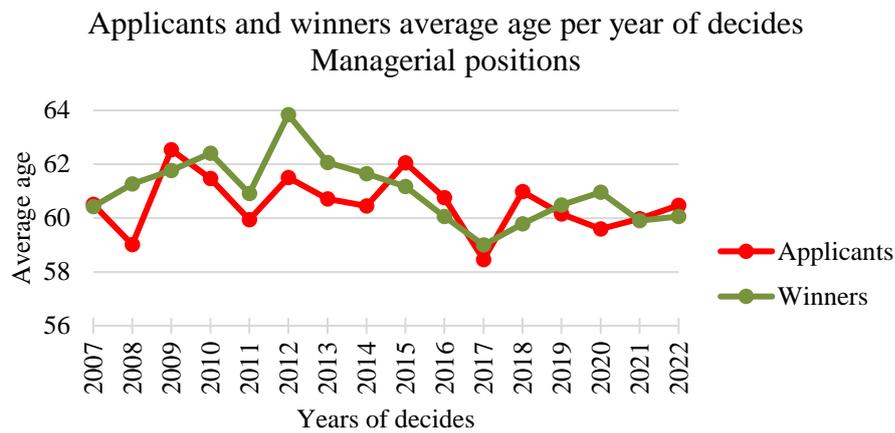
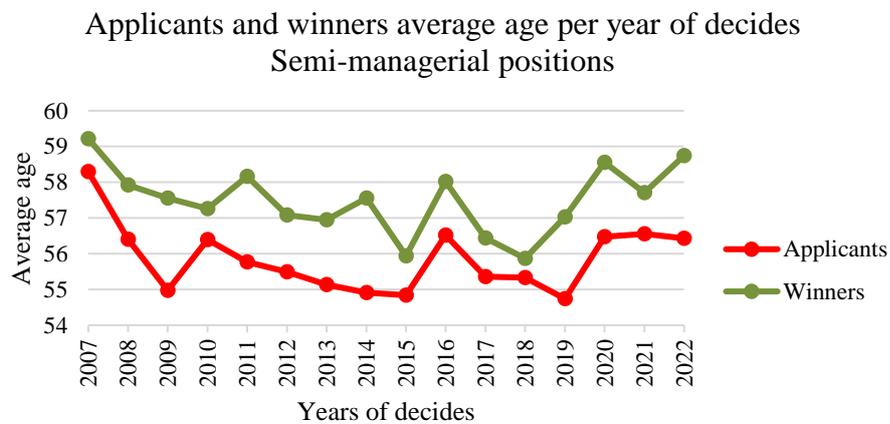


Figure 2 – Average age of applicants and winners of semi-managerial positions by year of resolution.



3. Survival patterns in the race for managerial positions

In order to demonstrate the analytical potential of the newly developed dataset, a survival model was employed to study the timing of judges' first successful applications to managerial or semi-managerial roles. Survival analysis is particularly well-suited to this context, as it allows us to model the “time to event” — in this case, the time between a judge’s entry into the judiciary and their first “victory” in a competitive appointment process. The model accounts for right-censored

observations, such as judges who had not yet won a position by the end of the observation period (31/12/2022) or those who reached retirement age before securing an appointment. Judges already holding managerial or semi-managerial positions at the beginning of the period were excluded from the analysis due to left-censoring.

The survival probability at time t is defined as

$$S(\hat{t}) = \prod_{i \leq t} \hat{p}_i = \prod_{i \leq t} (n_i - d_i) / n_i$$

where

- d_i represents the number of individuals experimenting the event at time i , thus the number of judges who won a competition, managerial or semi-managerial, at time i ;
- n_i is the number of judges at risk at time i (not having experimented the event victory before that time);
- \hat{p}_i is the estimated conditional survival probability at time i , in formula $P(T > i | T > i - 1)$ where T is the observed survival time;
- obviously d_i/n_i is the conditional probability that a judge experiments the victory event in the i th interval, given that he did not experiment it in the just precedent interval.

Different survival models have been carried out by stratifying also by type of published positions, corresponding to the higher number of applications made by each aspirant. A Survival analysis stratified by gender has been carried out as well. The log rank test has been used to compare the curves and to test if the eventual difference between them is statistically significant or is due to change. The log rank test is no longer indicated when the survival curves cross each other path.

The survival function was estimated using the Kaplan-Meier method, producing a curve that tracks the probability of not yet having obtained a managerial or semi-managerial position over time. This approach enables a visual and statistical assessment of how long judges remain in the system before achieving their first promotion and how this likelihood varies depending on personal and institutional characteristics.

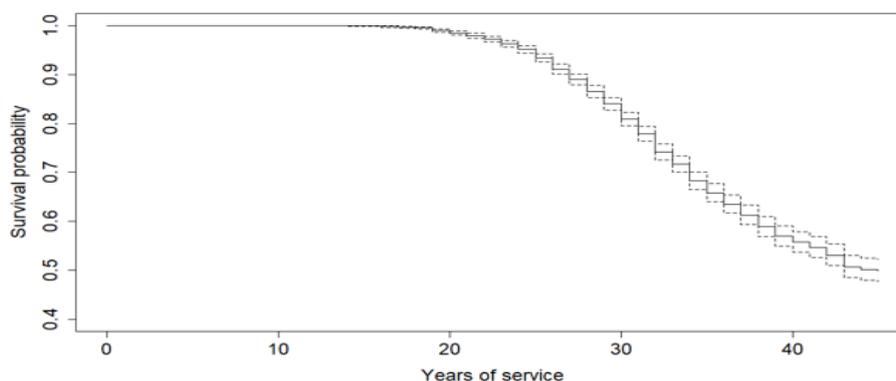
The overall survival curve shows that the probability of obtaining a managerial or semi-managerial role remains close to unity for the first 20 years of service, indicating that such appointments are virtually non-existent during the early stages of a judge's career. Between 20 and 40 years of service, the survival curve declines more steeply, suggesting that this is the critical period in which most judges who will obtain such roles actually do so. By 45 years of service, only about half of the judges in the sample had experienced a "victory," highlighting the relatively selective and competitive nature of the appointment process (see Figure 3).

To explore variation in these trajectories, the analysis stratified judges by the type of position they most frequently applied for — managerial or semi-managerial. The results reveal a clear divergence: judges who predominantly applied for managerial positions tend to experience longer waiting times and lower overall success probabilities compared to those targeting semi-managerial roles. Around the 35th year of service, only 22 percent of managerial-track applicants had won a position, compared to 42 percent of those pursuing semi-managerial roles. At 40 years of service, this gap remains substantial, with 34 percent of managerial applicants and 50 percent of semi-managerial applicants having obtained their desired role. A log-rank test confirms that these differences are statistically significant (see Figure 4).

Gender-based differences in career trajectories were also assessed through a survival analysis stratified by sex. The results show that women, although fewer in number, tend to experience shorter waiting times before achieving their first appointment. By 35 years of service, 41 percent of female applicants had won a managerial or semi-managerial position, compared to just 30 percent of male applicants. This trend persists over time: at 42 years of service, the share of women experiencing a victory reaches 52 percent, while the corresponding figure for men is 44 percent. The observed difference is statistically significant, suggesting gender-based variation in competition outcomes (see Figure 5).

These findings can be partly explained by differences in the type of positions won by male and female judges. Women are more likely to win semi-managerial positions, which tend to have higher success rates and lower barriers to entry. In contrast, men dominate managerial appointments, which are more competitive and often require a longer career trajectory. While these results may reflect broader institutional dynamics and role preferences, they also point to underlying gender-based differences in judicial careers.

Figure 3 – *Distribution of the percentage of aspirants who have not (yet) experienced a victory event by year of service (Victory Survival Curve by Years of Service).*



Note: The three lines represent respectively the survival one and the Confident Intervals related.

Figure 4 – Distribution of the percentage of applicants who have not (yet) experienced a victory event by year of service and by type of position for which they most competed (Victory survival curve by years of service, stratified by type of position aspirants apply most).

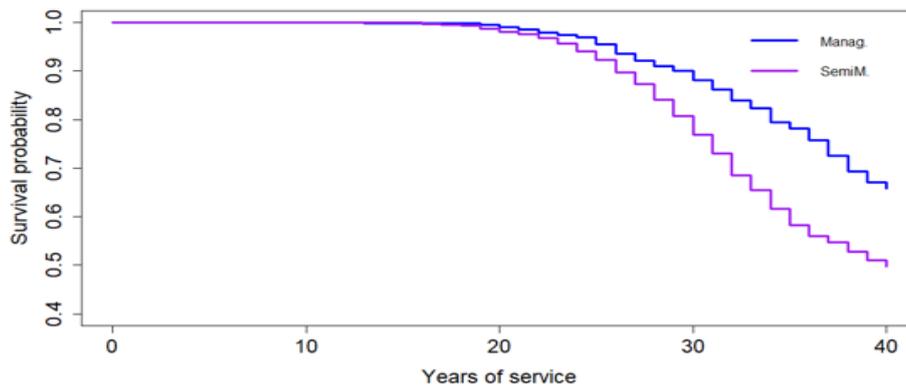
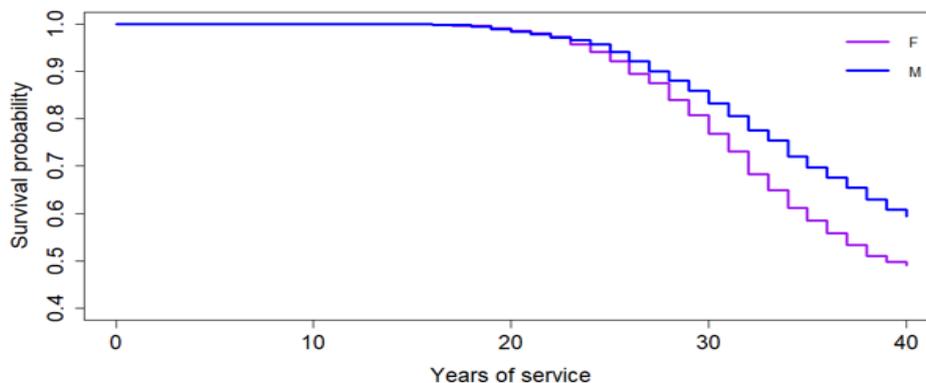


Figure 5 – Distribution of the percentage of applicants who have not (yet) experienced a victory event by year of service and by their gender (Victory survival curve by years of service, stratified by aspirants' gender).



4. Conclusions and future research

Overall, the survival analysis confirms that the path to a first managerial or semi-managerial position in the Italian judiciary is lengthy, highly selective, and shaped by both structural and demographic factors. The results complement the descriptive findings presented earlier and illustrate how the dataset can be leveraged to uncover systematic patterns in judicial career development. Although this first application focuses on the initial “victory,” the longitudinal structure of the data also makes it

possible to study repeated events, conditional probabilities of advancement, and time-dependent covariates — all promising directions for future research.

More broadly, this study underscores the importance of data-driven approaches to understanding judicial careers, particularly in civil law systems. By constructing and analyzing a rich, individual-level dataset that spans more than a decade and includes over 55,000 applications by currently employed judges, this paper provides the first large-scale statistical portrait of career mobility in the Italian judiciary. It demonstrates the value of integrating administrative data with statistical modeling to assess not only how judicial careers unfold, but also where barriers and asymmetries may exist.

References

- AGUIAR AGUILAR AZUL A. 2024. The Internal Dynamics of the Judiciary: Recruitment and Judicial Career. *Legal Culture, Sociopolitical Origins and Professional Careers of Judges in Mexico*. Cham: Springer Nature Switzerland, pp. 89–109.
- AIELLO F., BONANNO G., FOGLIA F. 2024. A meta-regression analysis on judicial efficiency literature: the role of methodological and courts diversity. *Journal of Applied Economics*, Vol. 27, No 1.
- ANTONUCCI L., CROCCETTA C., D'OVIDIO F. D. 2014. Evaluation of Italian judicial system. *Procedia Economics and Finance*, Vol. 17, pp. 121–130.
- AZARIA S., ALEXANDER C., BARON O., KRASS, D. 2025. Access to Data for Access to Justice: Unpacking Judicial Congestion Using an Event Log. *Available at SSRN 5254276*.
- BANASIK P., METELSKA-SZANIAWSKA K., GODLEWSKA M., MORAWSKA S. 2022. Determinants of judges' career choices and productivity: a Polish case study. *European Journal of Law and Economics*, Vol. 53, No 1, pp. 81–107.
- DI VITA, G., FERRARA, P.L., PATTI, A. 2024. An empirical study of administrative justice at times of COVID-19 in Italy. *Regional Studies, Regional Science*, Vol. 11, No 1, pp. 558–582.
- GAROUPA N., GILI M., GÓMEZ-POMAR F. 2012. Political influence and career judges: an empirical analysis of administrative review by the Spanish supreme court. *Journal of Empirical Legal Studies*, Vol. 9, No 4, pp. 795–826.
- GIANCOTTI M., ROTUNDO G., MAURO M. 2024. Factors affecting judicial system efficiency: A systematic mapping review with a focus on Italy. *International Journal of Productivity and Performance Management*, Vol. 73, No 9, pp. 2951–2971.

- GUERRA A., TAGLIAPIETRA, C. 2017. Does judge turnover affect judicial performance? Evidence from Italian court records. *Justice System Journal*, Vol. 38, No 1, pp. 52–77.
- JÄCKLE S. 2016. Pathways to Karlsruhe: A sequence analysis of the careers of German Federal Constitutional Court Judges. *German Politics*, Vol. 25, No 1, pp. 25–53.
- MAYORAL J. A., JAREMBA U., NOWAK T. 2014. Creating EU law judges: the role of generational differences, legal education and judicial career paths in national judges' assessment regarding EU law knowledge. *Journal of European Public Policy*, Vol. 21, No 8, pp. 1120–1141.
- MAZZOCCHI P., QUINTANO C., ROCCA A. 2024. Efficiency analysis using SBM and PLS-SEM: insights from the Italian judicial system. *Quality & Quantity*, Vol. 58, No 6, pp. 5621–5654.
- NISSI E., GIACALONE M., CUSATELLI C. 2019. The efficiency of the Italian judicial system: A two stage data envelopment analysis approach. *Social Indicators Research*, Vol. 146, No 1, pp. 395–407.
- PLOSCOWE M. 1934. The Career of Judges and Prosecutors in Continental Countries. *Yale LJ*, Vol. 44, pp. 268–291.
- RULLO L. 2022. The Road to Palazzo della Consulta: Profiles and Careers of Italian Constitutional Judges. *Italian Political Science*, Vol. 17, No 3, pp. 226–245.
- SCHNEIDER M. R. 2005. Judicial career incentives and court performance: an empirical study of the German labour courts of appeal. *European Journal of Law and Economics*, Vol. 20, pp. 127–144.

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