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The case of Internship Contracts**

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Robust Evidence on the Impact of Active Labour Market Policies for Young People: The case of Internship Contracts

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Abstract

In a context where job stability and quality of employment are central concerns for young people, the high rates of youth unemployment in Europe have caused countries to address this phenomenon through the implementation of Active Employment Policies (PAE). This study investigates an issue of increasing relevance and until now in the field of Public Policy Evaluation of Labor Markets: the impact of Internship Contracts, a PAE aimed at young people, between 2016 and 2019. Using the Continuous Sample of Working Lives (CSWL) and the Propensity Score Analysis, the Average Treatment Effect on the Treated on the average duration of subsequent contracts and salary in the short (1 year) and medium term (2 and 3 years) is estimated. Furthermore, using logistic regression models (Logit models), the probabilities of obtaining a Permanent Contract and of staying in the same company after the end of the contract were calculated. To ensure the robustness of the results, additional estimates were performed by modifying the matching algorithms and with different groups that varied in minimum contract duration, educational level, and previous work experience. The results revealed that Internship Contracts, compared to Temporary Contracts, improved salary prospects in the short and medium term, resulted in longer subsequent contracts and increased the probability of obtaining permanent employment. However, Temporary Contracts showed a greater probability of retention in the same company after their termination. These effects were consistently observed in all samples analyzed, but with differentiated effects by gender, experience, and education.

Keywords: Internship Contracts, Temporary Contract, Active Labour Market Policy (ALMP), Average Treatment Effect on the Treated, Propensity Score

1. Introduction

Labor markets around the world have undergone drastic reconfigurations following the economic crises that shook several countries in the 1970s and 1980s. Spain was no exception; the subsequent measures designed to contain the economic crisis of the 1970s introduced new forms of economic and business organization. This allowed for greater use of temporary forms of employment, which translated into wage moderation and reduced dismissal costs, aiming to create a more flexible labor market (Úbeda et al., 2020).

The reconfiguration of the Spanish labor market brought two important consequences, which, although present in many other European Union (EU) countries, are more pronounced in Spain. The first is high unemployment rates, and the second is the significant percentage of people working under temporary contracts. While these patterns are common across all groups of the Spanish population, young people under 30 years of age have been particularly affected by these phenomena.

According to data from the European Union Statistical Office (EUROSTAT), in 2016, a year in which signs of recovery in the Spanish labor market⁴ were beginning to be seen after the 2008

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⁴ The data on the percentage of unemployed people or those with temporary contracts began to decline starting in 2013; however, since this document analyzes the period from 2016 to 2019, information about the initial year is presented.

financial crisis, 18.8% of the economically active population was unemployed. This figure was double the EU average, which was 9.6% at that time. However, for young people under 30, the unemployment rate reached 32.6%, almost double that of the general population.

As for the employment situation of those employed, in 2016 a quarter of the population (24.4%) worked under a temporary contract, while in the case of young people, nearly 6 out of 10 were employed under this modality (57.4%). These figures contrast with the EU averages reported, which were 15.1% for the general population and 38.7% for young people, indicating that while Europe shows similar trends, they are significantly higher in Spain, especially for young people⁵.

The contractual duality has created two completely diverse groups of workers. The first, protected by high dismissal costs, enjoy job stability (those with a Permanent/Permanent Contract). In contrast, the rest are employed through temporary contracts, whose duration varies depending on the activity but is characterized by being short (with increasingly shorter periods). This generates frequent entries and exits from unemployment for those employed under this modality, resulting in high job instability and worse wage prospects (De la Rica & Gorjón, 2022).

Numerous studies have investigated the effects of current labor market conditions on the career paths of young people. Among the most significant consequences are high unemployment, job instability, forced temporary employment, and low wages (García-López, 2011; González-García, 2013; O'Reilly et al., 2019; Recio, 2007).

In this regard, high unemployment and the low number of young people with permanent jobs not only generate job instability and precariousness but also impact other aspects of the lives of those affected, such as delaying leaving the parental home or forming a family, significantly affecting various social aspects (De la Rica & Gorjón, 2022). Additionally, empirical evidence indicates that entering the labor market under these conditions has long-term negative effects (García-Pérez & Castello, 2015).

These issues have been addressed by the Spanish government through Active and Passive Labor Market Policies. One of them was the creation of Training Contracts, which, as described in the following sections, are an ALMPs aimed at improving the labor insertion of qualified young people and those with low educational levels by reducing the costs employers have to cover to hire these groups.

This study focuses on estimating the effect of the Internship Contract, a modality of Training Contracts aimed at young people with higher education or equivalent qualifications, on four specific outcomes that determine a person's career path: (1) the average duration of their subsequent contracts; (2) the salary received after the end of the contract in the short (1 year) and medium term (2 and 3 years); (3) the probability of staying with the same company after the contractual modality ends; and (4) the probability of obtaining a permanent contract after the contract ends.

The analysis focuses on all those who signed an Internship Contract in 2016, without distinguishing whether the individuals had previous work experience or if this was how they started contributing to Social Security. Although the Internship Contract was designed to provide qualified young people with their first job, in practice, it is more often used to avoid unemployment.

However, to offer a more robust analysis, the outcomes of interest are estimated for several subsamples that distinguish by previous work experience, gender, educational level, duration of the first contract, among others, to demonstrate that the results obtained are applicable to all mentioned subgroups.

⁵ It is important to mention that unemployment figures and the number of people working in temporary jobs in Spain have consistently been above the EU average since EUROSTAT has had available data. The purpose of this section is to demonstrate that both phenomena persist during the analysis period.

The document is structured as follows. Section 2 presents the literature review, including the most recent research on the impact of AEPs on the working lives of young people. Section 3 describes the characteristics of the Internship Contract, as well as the main legislative modifications it has undergone. Section 4 explains the data source used and the sample selection. Section 5 develops the descriptive analysis of the data. Section 6 presents the empirical strategy used in the analysis. Section 7 presents the results. The final section provides the main conclusions of this document.

2. Literature Review

ALMPs focused on young people have been one of the most widely used public policy tools to address the persistent problem of unemployment affecting this group. The main objective of these interventions is to improve the labor market integration of individuals generally under 30 years old, regardless of their educational level, gender, or area of specialization. This is typically achieved through fiscal and financial incentives aimed at companies that hire individuals from this group; training and skills development programs designed to enhance the employability of their beneficiaries; internships or curricular practices promoted by educational institutions, foundations, or governments; and the specific case analyzed in this work, contractual forms exclusive to these groups that can subsidize wages or offer fiscal and financial benefits to the companies that use them.

The literature on the effectiveness of exclusive contracts for young people in Europe is sparse compared to that for other ALMPs, and specifically for Spain, the number of studies in this area remains a significant opportunity for researchers seeking to evaluate ALMPs for individuals under 30 years old. The pioneering article in Spain regarding the impact evaluation of a contractual form exclusively aimed at young people with higher education or its equivalent was the study conducted by De la Rica & Gorjón (2022). The authors evaluated whether Internship Contracts helped improve the labor market trajectories of young people in Spain between 2002 and 2017. Using the Continuous Sample of Working Lives, they compared young people whose work life began with an Internship Contract with a control group whose work life began with a Temporary Contract of at least three months' duration.

The most notable results of the study are as follows: in the short term, the Internship Contract leads to greater subsequent job instability compared to a Temporary Contract unless the beneficiary changes companies. In that case, it appears that those with an Internship Contract are ahead of their peers in terms of employment stability, understood as holding Permanent Contracts. Regarding wages, the Internship Contract seems to have a negative impact, whether for those who stay with the company or for those who move to another company.

When comparing the situation of both groups two and five years later (medium term), the initial disadvantages observed in the short term are mitigated. Specifically, the previously found negative impact on wages disappears, while the employment stability of Internship Contract beneficiaries is greater in terms of having secured Permanent Contracts. One possible interpretation of this result is that, although companies hire young people through Internship Contracts to reduce costs, this group sends a signal of high productivity to the market, which allows them to achieve greater job stability later.

Other studies that have analyzed the effects of contracts exclusively aimed at young people include Sciulli (2013), who studied the effects of the 1997 “Treu Law” in Italy on Work Training Contracts and Apprenticeship Contracts, contractual forms aimed at young people with different conditions depending on the educational level of the beneficiary. The author found that after the reform, workers needed to accumulate more experience in Apprenticeship Contracts to achieve the same probability of future employment. This suggests that Italian companies value the flexibility characteristics of work training contracts more than their training content. The main conclusion of his work is that in labor markets with weak demand for skilled workers, policies aimed at promoting stable employment and avoiding precarious careers should consider the effectiveness of on-the-job training and the levels of financial incentives.

Also included in this classification of research are the works of Troncoso-Ponce et al. (2016); Cueto-Iglesias & López-Rodríguez (2019); Picchio & Staffolani (2019); Albanese et al. (2021), and Vaquero-García et al. (2024). Another pioneering work on the effectiveness of contractual forms aimed at young people in Spain was that of Troncoso-Ponce et al. (2016). Using longitudinal administrative data on young people, the researchers examined whether Training Contracts, aimed at young people without a university education, increased the transition rate to regular employment in Spain. Additionally, they estimated the competing risks and unobserved determinants of transition rates to Permanent Contracts. Their findings indicate that Training Contracts act as a catalyst toward stable employment; they reduce the prevalence of unemployment and significantly increase the proportion of low-skilled young workers who obtain regular employment a few years after entering a Training Contract, compared to those with a Temporary Contract.

For their part, Cueto-Iglesias & López-Rodríguez (2019) contributed to the literature on impact evaluations of Training Contracts in Spain by estimating the effects of the 2011 labor reform on this contractual form on the employment probability of young people. They used the Continuous Sample of Working Lives and Propensity Score Matching methods. They showed with the Average Treatment Effect on the Treated that Training Contracts contribute less to the labor market integration of young people and that, in terms of access to another job, duration of employment relationship, or wages, they perform worse compared to Temporary Contracts, regardless of the age and gender of the beneficiaries. Their main conclusion is that the reform in question had a minimal impact on increasing the effectiveness of the Training and Apprenticeship Contracts compared to a Temporary one.

Picchio & Staffolani (2019) evaluated in Italy whether Apprenticeship Contracts were effective pathways to permanent employment compared to other forms of temporary employment. They took a sample of young workers (on average with a low educational level) who started a temporary job in 2009 and followed them over time until they secured a permanent job. They estimated the hazard function for entering permanent employment for temporary workers with and without an Apprenticeship Contract. By estimating a competing risks model that distinguishes transitions to permanent jobs within the same company providing the treatment from those to different companies, they found that: (1) apprentices are more likely to find a permanent job within the same company than outside it; (2) apprentices are always more likely than temporary workers to secure a permanent job within the same company; (3) temporary workers are more likely than apprentices to find a permanent job in a different company, and (4) women and individuals with a university degree are less likely to be hired as apprentices compared to men and individuals without higher education.

Another study on the subject for Italy was by Albanese et al. (2021), who estimated the causal effects of the 2003 reforms to the Apprenticeship Contract in Italy, which increased its legal duration, allowed on-the-job training, and introduced a minimum wage level for apprentices. Using administrative data, they implemented the covariate balancing propensity score method, the Average Treatment Effect on the Treated, and a Differences-in-Differences estimator. The authors found that the new contract improves the chances of an apprentice obtaining a permanent job within the same company five years after hiring. Regarding gender-specific results, the authors estimated similar effects for both men and women. However, they found a differential effect on transitions to stable employment at the end of the apprenticeship, with women showing a significantly greater positive effect in transitions to Permanent Contracts with other companies than men.

Finally, the most recent research on the analysis of contractual forms focused on young people was by Vaquero-García et al. (2024), who studied the different contracts created to combat youth unemployment in Spain, France, and Germany. Their research concludes that for Spain, the measures used to date have not been sufficient to address the high unemployment rates and may even have had negative side effects, such as becoming a way to obtain cheaper and more flexible labor. In this regard, they recommend maintaining the current mechanisms but eliminating the age limit, as has been done in other countries such as France and Germany.

3. The Internship Contract: Context

Spanish labor legislation has undergone multiple modifications throughout its history, with the regulatory framework always aiming to adapt to the changing conditions of the Spanish labor market. In this context, and with the objective of promoting the integration of young people into the labor market, training contracts emerged, regulated under Article 11 of the Workers Statute⁶. The legislation formalized these contracts through two modalities: the Training and Apprenticeship Contract and the Internship Contract. The first was directed towards young people who lacked the professional qualifications recognized by the vocational training system, meaning they did not have higher education or an equivalent. The second, on the other hand, focused on those who held a university degree or a medium or higher-level vocational qualification, or officially recognized equivalent degrees, in accordance with the laws regulating the current educational system.

The Internship Contracts have undergone two major modifications. The first took place in 2010 and came into effect on September 19, 2010. This change allowed individuals with a professional certification to apply for this contractual modality. Additionally, the maximum number of years after the completion of studies to be eligible for this contract was extended from 4 to 5 years. Both changes allowed a greater number of people to benefit from this tool. Another modification, although not aligned with the same approach but aimed at equating labor rights with those of any other contractual modality, consisted of adding a list of conditions that would interrupt the duration of the contract. These circumstances included temporary incapacity, risk during pregnancy, maternity, adoption or fostering, risk during breastfeeding, and paternity.

It is important to note that, following the 2008 economic crisis and considering the situation faced by youth employment in 2013, the Spanish government enacted Law 11/2013, of July 26⁷, on measures to support entrepreneurship, stimulate growth, and create employment. This law included actions related to the Internship Contract, which came into effect on July 28, 2013. Although it did not modify the text of Article 11 of the Workers Statute, it did establish incentives for Internship Contracts, such as the possibility of entering internship contracts with young people under thirty years old, even if five or more years had passed since the completion of their studies. Furthermore, it offered a reduction of between 50% and 100% of the employer's Social Security contribution to companies that entered such contracts between July 7, 2014, and June 30, 2016. Finally, this package of measures was repealed on December 29, 2018.

The second modification occurred with the 2021 Labor Reform, which redefined this type of contract by establishing new Training Contracts⁸ that came into effect on March 31, 2022. From that moment, the terminology of the existing Training Contracts was modified: the Training in Alternation Contract was introduced to replace the Training and Apprenticeship Contract, and the Training Contract for the Acquisition of Professional Practice appropriate to the level of studies was created to replace the Internship Contract.

The Training Contract for the Acquisition of Professional Practice appropriate to the level of studies, like its predecessor, was designed to be entered into with those who held a university degree or a medium or higher-level degree, specialist, professional master's degree, or certificate from the vocational training system. The most relevant differences compared to its predecessor are found in the periods under which a person can benefit from this tool and its duration (for more details, see Table 1).

⁶ For a more detailed view of the content of the article in question, you can consult this link: <https://www.boe.es/buscar/act.php?id=BOE-A-1995-7730&tn=1&p=19950329>. For modifications between 2015 and 2024, you can review the following link: <https://www.boe.es/eli/es/rdlg/2015/10/23/2/con/20151024>.

⁷ For a more detailed view of the content of the Law in question, you can consult this link: <https://www.boe.es/buscar/act.php?id=BOE-A-2013-8187&b=18&tn=1&p=20130727#a13>.

⁸ Royal Decree-Law 32/2021, of December 28, on urgent measures for labor reform, job stability guarantee, and labor market transformation.

In this context, the only requirement for hiring under this modality is that the interested person must apply within three years, or five years if the contract is with a person with a disability, following the completion of their studies. The duration of this contract cannot be less than six months or exceed one year. An additional difference is that from the entry into force of this reform, companies must prepare an individual training plan that specifies the content of the professional practice. They must also appoint a tutor who has the appropriate training or experience to monitor the plan and ensure the proper fulfillment of the contract's objectives.

Despite the modifications over time, the goal of these contracts remains the same: to provide the necessary training and experience to qualified young people to access a first job related to their field of study. Table 1 presents a summary highlighting the main characteristics of Internship Contracts after the 2010 and 2021 reforms. It can be noted that the maximum duration of the modality remained constant until the 2021 modification, which reduced it to one year (compared to the previous upper limit of two years). Another relevant aspect is the period during which one can apply for this type of contract after completing studies, which increased from 4 to 5 years following the 2010 reform. This change was likely driven by the high unemployment rates prevalent at that time and was later reduced by two years (from five to three years and from seven to five years in the case of disability).

These modifications have been aimed at improving the regulatory framework by first reaching all qualified young people ready for their first work experience (including those with a vocational qualification and not just those with university or higher education). They have also worked to eliminate incentives that might lead employers to choose this contractual modality to reduce their labor costs through cheap qualified labor. The most significant change is observed in the salary, as the 2021 labor reform eliminated the possibility of offering lower wages than those stipulated by collective agreements based on the beneficiary's professional category.

Table 1. Basic Characteristics of Internship Contracts in Spain

	Before the Modification published on 09/18/2010	Modification published on 18/09/2010 Effective as of 19/09/2010	Modification published on 12/30/2021 Effective as of 03/30/2022
Target Group	Those holding a university degree or a vocational training degree (intermediate or higher) or officially recognized equivalent qualifications enabling professional practice.	Those holding a university degree or a vocational training degree (intermediate or higher) or officially recognized equivalent qualifications according to current educational system laws, or a vocational qualification certificate as provided by Organic Law 5/2002, of June 19, on Qualifications and Vocational Training.	Those holding a university degree or a degree in intermediate or higher vocational training, specialist, professional master's, or a vocational training system certificate, as provided by Organic Law 5/2002, of June 19, on Qualifications and Vocational Training, as well as those with an equivalent qualification from artistic or sports education within the educational system, enabling or qualifying for labor activity.
Requirements	Must be contracted within four years, or six years if the contract is with a disabled worker, following the completion of the corresponding studies.	Must be contracted within five years, or seven years if the contract is with a worker with a disability, following the completion of the corresponding studies.	Must be contracted within three years, or five years if the contract is with a person with a disability, following the completion of the corresponding studies.
Purpose	To provide professional practice appropriate to the level of studies or training completed.	To provide professional practice appropriate to the level of studies or training completed.	To provide professional practice appropriate to the level of studies or training specified in the contract.
Duration	The contract must not be less than six months or exceed two years.	The contract must not be less than six months or exceed two years.	The contract must not be less than six months or exceed one year.
Salary	There must not be less than 60% of the remuneration established by the sector's collective agreement during the first year and 75% in the second year.	There must not be less than 60% of the remuneration established by the sector's collective agreement during the first year and 75% in the second year.	In no case can the remuneration be less than the minimum wage established for the alternating training contract or the minimum interprofessional salary in proportion to the actual working time.

Source: Compiled by the author based on the Workers Statute.

Historically, the number of people employed under the Training Contracts (both Training and Internship contracts) has been a small proportion compared to the total number of Temporary Contracts registered, according to data from the Ministry of Labor and Social Economy⁹. Since data on the number of contracts has been available from 1985, the trend in the use of both Internship and Training Contracts has been declining (1989 saw the highest number of these contracts recorded).

However, following the 2008 financial crisis, their use became popular again, to the extent that the registration of Training Contracts reached a new peak in 2015, while Internship Contracts peaked in 2019. Nonetheless, their usage has dropped to historic lows in recent years. De la Rica & Gorjón (2022) suggest that the low usage may be due to the minimum duration requirement of at least 6 months for both types of contracts, whereas most Temporary Contracts that young people with similar characteristics access have shorter durations. This requirement might be discouraging companies from hiring through these modalities, as standard Temporary Contracts offer greater flexibility in managing the economic cycle of businesses.

4. Data and Sample Selection

4.1. Continuous Sample of Working Lives (CSWL)

The data used for this study come from the Continuous Sample of Working Lives (CSWL), which is an administrative record compiled by the Ministry of Inclusion, Social Security, and Migration of the Spanish Government. It contains information from Social Security databases, supplemented with data from the Municipal Continuous Register (National Statistics Institute) and the annual summary of withholdings and income tax advances from the Tax Agency.

The CSWL provides highly relevant information about the Spanish labor market as it is a sample of randomly selected individuals who are affiliated with Social Security during the reference year. The CSWL allows tracking the career trajectory of sample individuals from the point they join Social Security, and it is possible to observe their periods of employment and unemployment from the start of their working life until the last available year of data.

For this study, the variables of interest include the type of contract and its actual duration, with exact start and end dates, the economic sector of the Social Security contributor, or the size of the company in which they work. Additionally, the CSWL provides demographic characteristics of individuals such as gender, age, educational level, place of residence, or nationality.

4.2. Sample Selection

The accurate estimation of the effectiveness of an Active Labor Market Policy primarily depends on the proper selection of participants for the Treatment and Control Groups. This means comparing the outcomes of individuals who entered the labor market through an Internship Contract with those of workers who could have started their working life with this type of contract, given that they had similar backgrounds (education, age, sex, nationality) but did not do so, allows for feasible conclusions.

For this study, various Treatment and Control Groups were established. For most of the remaining sections of this document, a Treatment Group and a Control Group were used, which will be referred to as “Treatment Group A” and “Control Group A” hereafter. The “A” samples or cohorts are used for the estimations in sections 6 and 7 (except section 7.3), which correspond to Descriptive Statistics and the Results of the models described in section 5 of Methodology. The remaining Groups, labeled from “B” to “F”, will be used for the Sensitivity Analysis in subsection 7.3. The composition of each treatment group and its respective counterfactuals is described below.

⁹ For more details, you can consult the following link: <https://expinterweb.mites.gob.es/series/>

It is important to highlight that despite the provisions of the Workers Statute and other regulations such as Law 11/2013 concerning the profile of beneficiaries for Internship Contracts, this is not always adhered to in practice, as will be seen later. Therefore, to accurately delineate both the Treatment and Control Groups, it was decided that they should align as closely as possible with the legal framework applicable during the period of interest.

In this sense, Treatment Group A consists of all individuals who signed an Internship Contract in 2016, whose age at the time of signing the contract was under 30 years; with an educational level of at least First Degree Vocational Training, Intermediate Vocational Training, Industrial Official, or Higher Vocational Training, and the actual duration of the contract must be at least 3 months (90 days).

The formation of this Treatment Group was subject to several decisions. First, all observations with a contractual duration of less than 3 months were excluded from the sample. Second, individuals aged 30 years or older were not considered. Finally, individuals with an educational level lower than required by the regulations were excluded, which meant excluding individuals with no education, incomplete/completed primary education, or elementary or higher secondary education. This last category represented about 16% of the sample, indicating that these contracts were not always awarded according to the current regulations.

The reason for not including individuals with secondary education is based on the logic that the Internship Contract is designed for people whose latest studies have prepared them for entering the labor market. Therefore, secondary education is not included in this category but is part of the academic trajectory leading to university education and subsequent labor market insertion.

Thus, the composition of Control Group A follows the guidelines already outlined for the creation of Treatment Group A. Therefore, this group comprises individuals who formalized a Temporary Contract for Works, Services, or Production, henceforth referred to as “Temporary Contracts”, with a minimum duration of 3 months (180 days), whose age at the time of signing the contract was under 30 years, and with an educational level of at least First Degree Vocational Training, Intermediate Vocational Training, Industrial Official, or Higher Vocational Training.

The other Groups used in this document have the same age guidelines. However, depending on the profile of the individual to be analyzed, additional filters may apply. For Groups B and C, they were formed to assess the impact of Internship Contracts on individuals with higher or university education (master’s or doctoral degrees) for whom this contractual modality was originally designed. Accordingly, the minimum duration of their contracts was also set at 3 months, as in the base groups.

To provide more robust results, groups were also designed with a minimum contract duration of at least 6 months, aligning with the legal minimum duration established in the applicable legal framework in 2016. Thus, Treatment and Control Groups C were formed, sharing the same characteristics as the base group. Similarly, Treatment and Control Groups D were designed in the same manner as Groups B and C, with the only difference being the duration of the contract described above.

A noteworthy point, highlighted in the Descriptive Statistics section, is the significant number of individuals who had prior work experience before signing the Internship or Temporary Contract. To offer differentiated results for these subgroups, Treatment and Control Groups E were created, including only individuals without prior work experience before formalizing the Internship or Temporary Contract. Concurrently, Treatment and Control Groups F were created for individuals with prior work experience before signing the contract in question. All four groups share the remaining characteristics, i.e., the maximum age is under 30 years, for young individuals with an educational level of at least First-Degree Vocational Training, Intermediate Vocational Training, Industrial Official, or Higher Vocational Training, and whose contract lasted at least 3 months.

Table 2. Characteristics of the Treatment and Control Groups

Shared Characteristics	Group	Previous Experience	Education Level	Contract Duration
Individuals who signed an Internship Contract in 2016 under 30 years	Treatment Group A	No distinction	Vocational training or higher	At least 3 months
	Treatment Group B	No distinction	University or higher education	At least 3 months
	Treatment Group C	No distinction	Vocational training or higher	At least 6 months
	Treatment Group D	No distinction	University or higher education	At least 6 months
	Treatment Group E	No experience prior to signing the contract	Vocational training or higher	At least 3 months
	Treatment Group F	With experience prior to signing the contract	Vocational training or higher	At least 3 months
Individuals who signed a Temporal Contract in 2016 under 30 years	Control Group A	No distinction	Vocational training or higher	At least 3 months
	Control Group B	No distinction	University or higher education	At least 3 months
	Control Group C	No distinction	Vocational training or higher	At least 6 months
	Control Group D	No distinction	University or higher education	At least 6 months
	Control Group E	No experience prior to signing the contract	Vocational training or higher	At least 3 months
	Control Group F	With experience prior to signing the contract	Vocational training or higher	At least 3 months

Source: Own Elaboration.

5. Methodological Strategy

Accurately estimating the effects of public interventions is essential to provide solid evidence that leaves no doubt about their effectiveness or to identify areas for improvement to achieve the established objectives. To evaluate the effects of Internship Contracts used by young people, it was decided to assess their results on four fundamental variables based on existing literature: (1) the average duration of subsequent contracts; (2) the income of beneficiaries in the short term (1 year) and medium term (3 years); (3) the probability of obtaining a Permanent Contract; or (4) staying employed at the same company¹⁰.

For this document, information from individuals included in the CSWL for the year 2016 and their labor trajectories up to 2019 was used. This decision primarily stems from the need to have a sample not exposed to radical changes that might affect the evaluation of the effectiveness of Internship Contracts, as well as having an analysis period of at least three years to observe the evolution of the variables of interest. Although the CSWL provides more recent information, disruptive events occurring between 2019 and 2021 present obstacles to making robust estimates. For 2019, the removal of reductions on employer social security contributions can be cited as a significant legislative change that likely impacted the effectiveness of this tool. For 2020 and 2021, the COVID-19 pandemic is a major shock that completely altered all public policy evaluations.

Finally, 2022, the most recent year for which information is available, also does not allow for feasible results, particularly considering the legislative change that occurred at the end of 2021 and came into effect from the second quarter of 2022, which leaves insufficient time to estimate the impact of Internship Contracts¹¹.

It is important to note that for this study, the effects of legislative changes prior to 2016, such as the 2010 reform or the creation of incentives under Law 11/2013, were not estimated because it was considered that these modifications did not alter the way Internship Contracts helped young people enter the labor market. These legislative changes primarily increased the number of people who could enter an Internship Contract but did not change the mechanisms by which young people could obtain paid employment after using these contracts.

¹⁰ The variables have been chosen since similar research has already analyzed, for example, variables 1 and 2 by Cueto-Iglesias & Rodríguez-López (2019) and variables 3 and 4 by Picchio & Staffolani (2019) and De la Rica & Gorjón (2022).

¹¹ The legislative changes in question can be seen in greater detail in section 3 of this document or in Vaquero-García et al. (2024).

The methodological strategy to estimate the effect of the Internship Contract on the variables of interest was divided into three basic steps. First, obtaining a control group comparable to the treatment group, i.e., users benefiting from the intervention, consisting of individuals who did not receive the public policy but could have done so based on their characteristics, through Propensity Score Matching (PSM). PSM requires (1) estimating the Propensity Score (PS) for the treatment and control groups; (2) using a propensity score matching method to generate the most similar Treatment and Control Groups for the analysis; (3) choosing the best matching algorithm; and (4) conducting a balance diagnostic to verify the compatibility of both groups (Rosenbaum & Rubin, 1983; Rosenbaum, 1989; Heckman et al., 1997; Dehejia and Wahba, 1999)

Second, once both groups are obtained and verified to be similar, the next step is to estimate the Average Treatment Effect on the Treated (ATT) to assess the first and second outcomes of interest (Cueto-Iglesias & Mato-Díaz, 2008; Caliendo & Kopeinig 2008; Diamond & Sekhon, 2013; Mahalanobis, 2018; Guo et al., 2020; Zhao et al., 2021), which are the difference in (1) wages and (2) days worked between the two groups. Additionally, a Sensitivity Analysis was performed to ensure the most robust possible results.

Third, using a binomial logistic model and assessing the relevance of its parameters (Long, 1997), the probability of transitioning to a Permanent Contract and of continuing to work at the same company after the respective contract ends was calculated for both the treatment and control groups.

6. Descriptive Statistics

This section is intended to describe the beneficiary population of Internship and Temporary Contracts in Spain that are part of the groups of interest. As clarified in Section 4, the group of individuals on which this and the following sections of this document (except for the sensitivity analysis) will focus is Group “A”.

The most relevant aspect of the sample used is the experience of the subjects, as 70.3% of the sample had previous work experience before formalizing the Internship Contract in 2016, while the remaining 29.7% were entering the Spanish labor market for the first time through this contractual modality. A similar situation is observed with Temporary Contracts (67.4% and 32.6%, respectively). This suggests that this modality might not be used as originally intended, as instead of promoting the labor market insertion of young people who have just finished their studies, it appears to be an alternative for this group when they cannot secure permanent employment. Another possibility is that those individuals with prior experience before signing the Internship Contract had worked in activities unrelated to their studies. Unfortunately, the information from the CSWL does not allow us to determine the area of specialization of the individuals in the sample. However, as will be discussed later in the Sensitivity Analysis section, the results obtained for the entire sample are generally extrapolable to the subgroups with and without prior experience.

Regarding the duration of the 2016 Internship Contract, approximately 10% of the sample did not complete the minimum duration of 6 months, while 20% were employed under this modality for its legal maximum of 2 years. This may reflect the stability of these contracts compared to Temporary Contracts, as the percentage of people with a Temporary Contract lasting less than 1 month is 53% of the sample, while only 33% of individuals had a Temporary Contract lasting at least 6 months. Another aspect related to job stability is the number of contracts signed after the Internship/Temporary Contract in 2016. While 35% of the Control Group signed more than 7 contracts between 2016 and 2019, only 19% of the Treatment Group found themselves in this situation. In contrast, 31% of this group signed a maximum of two contracts during the same period (the Contract of Interest plus one), compared to 22% of the Control Group. Additionally, the average duration of contracts is higher (more than 4 months or 130 days) for those who were part of the Treatment Group compared to the members of the Control Group.

Other relevant aspects regarding the use of these types of contracts include the amount of time worked since 2016. The proportion of people who have worked throughout the entire period is higher for those who signed an Internship Contract versus a Temporary Contract. Similarly, the percentage of individuals who signed a Permanent Contract after completing the contract in question is also higher in the Treatment Group. In the same vein, the average monthly salary for the years 2017, 2018, and 2019 is also higher for those who signed an Internship Contract in 2016.

Regarding the economic activity in which people who signed Internship and Temporary Contracts are employed, we can find some key differences between the two groups. On the one hand, those who had an Internship Contract are more likely to work in Professional, Scientific, and Technical Activities (25.7%), Administrative and Support Services (13.8%), Manufacturing Industry (12.2%), or Healthcare and Social Services Activities (10.8%). On the other hand, individuals who had a Temporary Contract were also employed in Administrative and Support Services (16.5%), Commerce (15.5%), and Hospitality (11.6%).

It is difficult to observe significant differences between the Treatment and Control Groups in demographic variables such as age. However, regarding gender, there are more women in the control group (53.6%), while men predominate in the treatment group (51.1%). Another category where differences are observed is in the percentage of individuals of Spanish nationality who signed Internship Contracts. While 80.1% of those who signed a Temporary Contract are Spanish, this figure rises to 93.9% for Internship Contracts. Although there is no clear reason for this, one possible hypothesis is that the percentage of the migrant population with higher education or equivalent (necessary to benefit from this contractual modality) is not very high in Spain. Another substantial difference can be found in the educational level of both groups. While 66% of the Treatment Group has a University Education, only 47% of the Control Group has the same educational level.

In summary, in addition to what has been mentioned, it is important to note that this initial approach to the data indicates that those who were hired under the internship modality in 2016 might have greater chances of securing stable employment with better salary conditions compared to those who were hired with a Temporary Contract. This suggests that, although Internship Contracts are not fulfilling their initial objective of facilitating the first job insertion, they could provide a pathway to job stability for those who already had prior experience and for those whose first work experience was under this contractual modality. One initial explanation for this possible trend could be that a larger proportion of the Treatment Group sample consists of young people with university education, a condition that could ensure them better future job prospects. Additionally, the distribution of economic sectors towards less stable activities, such as hospitality, for those with Temporary Contracts could affect the job stability of individuals. These potential biases are corrected through the Propensity Score Analysis estimated in the following section, which allows us to see the effects of the Internship Contract for groups with the same magnitudes in their covariates.

Table 3. Descriptive Statistics

Characteristic	Control Group	Treatment Group	Characteristic	Control Group	Treatment Group
Sample	1592	491	Sample	1592	491
Experience			Permanent Contract		
Without prior experience	32.60%	29.74%	The next contract was not permanent	93.00%	84.90%
With prior experience	67.40%	70.26%	The next contract was permanent	7.00%	15.10%
Gender			Stayed at the Same Company		
Female	53.60%	48.90%	The next contract was not with the same company	71.00%	81.90%
Male	46.40%	51.10%	The next contract was with the same company	29.00%	18.10%
Age			Education		
Up to 22 years	17.30%	14.10%	Vocational Training	52.10%	33.80%
Older than 22 years	82.70%	85.90%	University	47.90%	66.20%
Contracts Signed			Average Monthly Salary		
Up to 2	22.90%	31.40%	2017	\$1,147.52	\$1,332.24
Between 3 and 6	41.80%	49.30%	2018	\$1,255.27	\$1,493.10
More than 7	35.30%	19.30%	2019	\$1,417.15	\$1,700.98
Days Worked			Nationality		
Up to 1 year	10.20%	4.30%	Non-Spanish	19.90%	6.10%
More than 1 and up to 2 years	10.30%	9.80%	Spanish	80.10%	93.90%
Between 2 and 3 years	20.30%	14.70%	Average Contract Duration		
More than 3 years	59.20%	71.30%	After the end of the Temporary / Internship Contract	553	683
Autonomous Community			Economic Activity		
Andalucía	14.60%	14.10%	Primary Sector	4.00%	0.00%
Aragón	3.00%	1.80%	Extractive Industry	0.00%	0.00%
Asturias	1.80%	4.90%	Manufacturing Industry	7.90%	12.20%
Islas Baleares	4.50%	0.80%	Electric Power, Gas, Steam and Air Conditioning Supply	0.20%	0.20%
Canarias	4.80%	2.90%	Water Supply, Sewerage Activities	0.10%	1.40%
Cantabria	1.40%	1.20%	Construction	2.60%	5.70%
Castilla y León	5.30%	3.70%	Commerce	15.50%	9.60%
Castilla-La Mancha	3.80%	4.10%	Transportation and Storage	3.30%	2.00%
Cataluña	18.70%	20.40%	Hospitality	11.60%	1.60%
Comunidad Valenciana	10.50%	10.20%	Information and Communications	4.10%	6.10%
Extremadura	2.80%	2.20%	Financial Activities	0.60%	3.10%
Galicia	5.60%	6.90%	Real Estate Activities	0.50%	0.20%
Comunidad de Madrid	14.30%	15.70%	Professional, Scientific, and Technical Activities	9.50%	25.70%
Murcia	2.20%	1.80%	Administrative and Support Services	16.50%	13.80%
Navarra	1.10%	2.60%	Education	8.90%	5.30%
País Vasco	5.20%	6.30%	Healthcare and Social Services	8.80%	10.80%
La Rioja	0.40%	0.40%	Arts, Recreation and Entertainment Activities	3.00%	0.20%
Ceuta	0.10%	0.00%	Other Services	2.80%	2.00%
Melilla	0.13%	0.00%			

Note: The Average Monthly Salary corresponds to the contribution base for CSWL individuals, which according to the documentation available at: <https://www.seg-social.es/wps/portal/wss/internet/EstadisticasPresupuestosEstudios/Estadisticas/EST211/1429> mentions that, except for exceptions, it must coincide with the actual monthly remuneration.

Source: Own elaboration with information from CSWL.

7. Results

7.1. Propensity Score Matching

Creating comparable Treatment and Control Groups across all observable covariates is the foundation on which the validity of any estimation regarding the effects of a treatment on any of the interest groups rests. Accordingly, Table 4 presents the composition of the sets of individuals who signed a Temporary Contract (Control) or an Internship Contract (Treatment) in 2016, matched by the “optimal” PS algorithm. The choice of this method follows multiple estimations (detailed in the sensitivity analysis section) with similar results. In this case, the decision is driven by this method’s ability to automatically optimize PS distances between observations, unlike others such as the “Nearest Neighbor” and its variants, and without losing a significant portion of the sample as happens with “Coercion” or “Exact” matching.

Thus, each observation in the Treatment Group has a unique, ideal counterfactual with a similar Propensity Score in the Control Group. The Propensity Score was estimated through a logistic model where the dependent variable was the condition of belonging to the Treatment Group versus being part of the Control Group. Independent variables included observable covariates such as gender, age, level of education, whether the individual was Spanish, the economic activity under which they were registered with Social Security, the Autonomous Community to which they belonged at the time of signing the Internship/Temporary Contract, and the reported salary in 2016.

Table 4 shows the composition of both groups, which includes 978 individuals (489 in each group)¹². This means that 1,101 subjects from the Control Group and 2 from the Treatment Group were excluded from the analysis. The same table also shows the distribution of individuals for each subclass, along with the estimation of the Standardized Mean Difference for each covariate, with a p-value evaluated at a 95 percent confidence level, indicating that all observable demographic characteristics for both groups are balanced.

Additionally, to better illustrate this, Panel 1 includes the distribution of observable covariates before and after using Propensity Score Matching. This Panel shows how the distributions improve considerably for all variables used, thus helping to reduce the selection bias that could be present in both groups.

¹² This data set corresponds to the Treatment and Control Groups “A” with which the estimations of sections 7.2 and 7.3 were made.

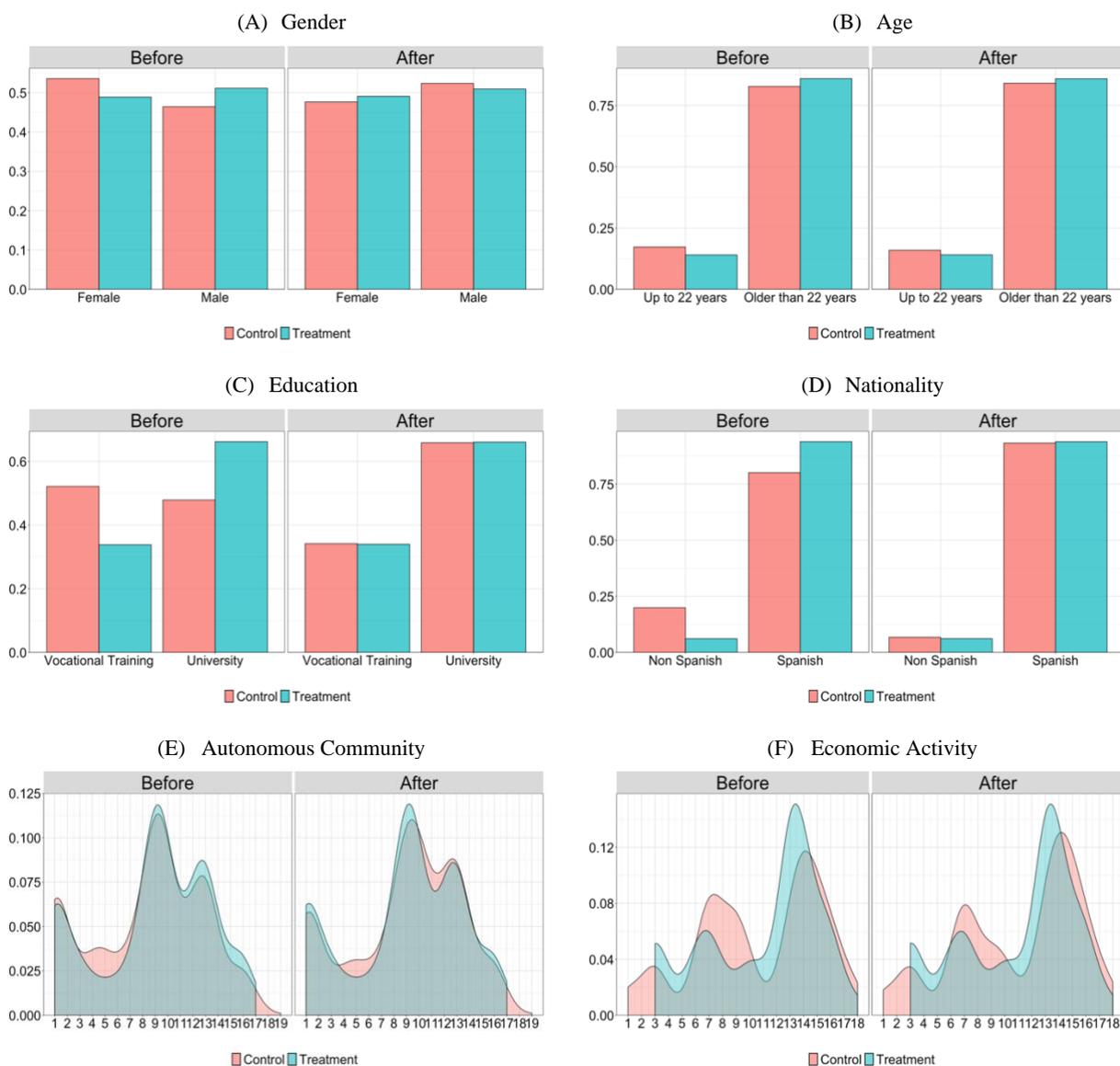
Table 4. Covariate Equilibrium Diagnostics

Characteristic (%)	Control Group	Treatment Group	P	Standardized Mean Difference	Condition
Sample	489	489	""	""	""
Gender			0.701	0.029	Balanced
Male	256 (52.4)	249 (50.9)	""	""	""
Age			0.474	0.052	Balanced
Older than 22 years	411 (84.0)	420 (85.9)	""	""	""
Education			1	0.004	Balanced
University	322 (65.8)	323 (66.1)	""	""	""
Nationality			0.794	0.025	Balanced
Spanish	456 (93.3)	459 (93.9)	""	""	""
Autonomous Community			0.074	0.369	Balanced
Andalucía	60 (12.3)	69 (14.1)	""	""	""
Aragón	17 (3.5)	9 (1.8)	""	""	""
Asturias	8 (1.6)	24 (4.9)	""	""	""
Islas Baleares	13 (2.7)	4 (0.8)	""	""	""
Canarias	22 (4.5)	14 (2.9)	""	""	""
Cantabria	7 (1.4)	6 (1.2)	""	""	""
Castilla y León	21 (4.3)	18 (3.7)	""	""	""
Castilla-La Mancha	22 (4.5)	20 (4.1)	""	""	""
Cataluña	77 (15.7)	100 (20.4)	""	""	""
Comunidad Valenciana	57 (11.7)	50 (10.2)	""	""	""
Extremadura	27 (5.5)	11 (2.2)	""	""	""
Galicia	30 (6.1)	34 (7.0)	""	""	""
Comunidad de Madrid	74 (15.1)	75 (15.3)	""	""	""
Murcia	15 (3.1)	9 (1.8)	""	""	""
Navarra	9 (1.8)	13 (2.7)	""	""	""
País Vasco	28 (5.7)	31 (6.3)	""	""	""
La Rioja	1 (0.2)	2 (0.4)	""	""	""
Ceuta	1 (0.2)	0 (0.0)	""	""	""
Economic Activity			0.060	0.733	Balanced
Primary Sector	17 (3.5)	0 (0.0)	""	""	""
Manufacturing Industry	38 (7.8)	60 (12.3)	""	""	""
Energy Supply \1	2 (0.4)	1 (0.2)	""	""	""
Water Supply \2	0 (0.0)	7 (1.4)	""	""	""
Construction	16 (3.3)	28 (5.7)	""	""	""
Commerce	75 (15.3)	46 (9.4)	""	""	""
Transportation and Storage	10 (2.0)	10 (2.0)	""	""	""
Hospitality	31 (6.3)	8 (1.6)	""	""	""
Information and Communications	26 (5.3)	30 (6.1)	""	""	""
Financial Activities	6 (1.2)	15 (3.1)	""	""	""
Real Estate Activities	2 (0.4)	1 (0.2)	""	""	""
Professional, Scientific, and Technical Activities	55 (11.2)	126 (25.8)	""	""	""
Administrative and Support Services	83 (17.0)	67 (13.7)	""	""	""
Education	58 (11.9)	26 (5.3)	""	""	""
Healthcare and Social Services	40 (8.2)	53 (10.8)	""	""	""
Artistic activities \3	17 (3.5)	1 (0.2)	""	""	""
Other Services	13 (2.7)	10 (2.0)	""	""	""

Note: Full name of activity \1 Electric Power, Gas, Steam and Air Conditioning Supply, \2 Water Supply, Sewerage Activities and \3 Arts, Recreation and Entertainment Activities.

Source: Own elaboration with information from CSWL.

Panel 1. Distribution of Covariables



Note: The codes to identify the Autonomous Community are as follows: (1) Andalucía, (2) Aragón, (3) Asturias, (4) Islas Baleares, (5) Canarias, (6) Cantabria, (7) Castilla y León, (8) Castilla-La Mancha, (9) Cataluña, (10) Comunidad Valenciana, (11) Extremadura, (12) Galicia, (13) Comunidad de Madrid, (14) Murcia, (15) Navarra, (16) País Vasco, (17) La Rioja y (18) Ceuta. Note1: The codes to identify the Economic Activity are the following: (1) Primary Sector, (2) Extractive Industry, (3) Manufacturing Industry, (4) Electric Power, Gas, Steam and Air Conditioning Supply, (5) Water Supply, Sewerage Activities, (6) Construction, (7) Commerce, (8) Transportation and Storage, (9) Accommodation, (10) Information and Communications, (11) Financial Activities, (12) Real Estate Activities, (13) Professional, Scientific and Technical Activities, (14) Administrative and Supporting Services Activities, (15) Education, (16) Health and Social Work Activities, (17) Arts, Recreation and Entertainment Activities, and (18) Other Services.

Source: Own elaboration with information from the CSWL.

7.2. Average Treatment Effect on the Treated (ATT)

This section presents the results of estimating the Average Treatment Effect on the Treated (ATT) for individuals who signed an Internship Contract in 2016, compared to those who signed a Temporary Contract in the same year. The estimates, shown in Table 5, are broken down for a series of variables (rows): (1) Average Duration of Contracts following the completion of the Internship/Temporary Contract, as well as the Average Monthly Salary in euros for the years (2) 2017, (3) 2018, and (4) 2019.

Additionally, this analysis aims to understand the impact of the Internship Contract on priority subgroups within the sample. Therefore, the coefficients of the estimates are presented, classified by gender (female and male), age (up to 22 years old and over 22 years old), and educational level (individuals with Vocational Training or University Education).

The estimate of the Average Duration of Contracts following the completion of the Internship/Temporary Contract in 2016 shows that those who signed an Internship Contract had contracts that were 106 days longer than those who signed a Temporary Contract for the full sample. This result is statistically significant at a 99 percent confidence interval. In this regard, when disaggregating the data, it is observed that this difference is more pronounced in men than in women, 120 compared to 91 days, both coefficients being significant at a 99% significance level.

Significant differences can also be observed between subgroups by age and educational level, with stronger effects for individuals aged 22 years or younger and those with Vocational Training (152 and 145 versus 87.24 and 87.15 days, respectively). However, the coefficients for those over 22 years old and young people with university education are also positive, though lower, around 87 days. In all cases, the values are always positive, reflecting the trend that the Internship Contract is associated with longer subsequent contracts compared to individuals who signed a Temporary Contract.

**Table 5. Average Treatment Effect on the Treated
Complete Sample and Specific Groups**

	Complete Sample	Gender		Age		Education	
		Female	Male	Up to 22 years	Older than 22 years	Vocational Training	University
Average Contract Duration	106.72*** (20.97)	91.35*** (29.78)	120.78*** (29.74)	152.19*** (50.19)	87.24*** (23.35)	145.56*** (33.06)	87.15*** (27.33)
Average Monthly Salary in 2017	174.67*** (39.00)	191.19*** (54.97)	160.17*** (55.49)	198.26*** (79.97)	153.27*** (44.35)	182.80*** (56.02)	172.16*** (52.58)
Average Monthly Salary in 2018	189.86*** (46.12)	187.85*** (63.59)	191.28*** (67.01)	196.40** (100.25)	169.69*** (52.21)	235.12*** (68.16)	171.21*** (61.55)
Average Monthly Salary in 2019	194.74*** (47.82)	167.15*** (66.19)	210.68*** (69.00)	164.63* (110.55)	185.48*** (53.75)	179.35*** (72.53)	194.47*** (63.22)

Note: Standard errors for each coefficient are in parentheses.

Note 1: Significance levels are as follows: 99% (***); 95% (**); 90% (*).

Source: Own elaboration with information from CSWL.

The analysis of average monthly salaries in 2017, 2018, and 2019 reveals interesting patterns regarding the impact of the Internship Contract compared to the Temporary Contract. The estimation showed that individuals in the Treatment Group earned, on average, 106.72 euros more per month than those in the Control Group for the complete sample. When results are broken down by subgroups, two different trends are observed by gender: on the one hand, the effect of the Internship Contracts on women decreases over time, while for men, the opposite is true.

In the short term (one year later), the impact on earnings is greater for women than for men. While the wage differential for women is 191.19 euros in 2017, for men, it was 160.17 euros. However, in the medium term (2 and 3 years later), the effect decreases for women, dropping to 187.85 euros in 2018 and 167.15 euros in 2019, while for men, the coefficients increase to 191.28 and 210.68 euros for the same years.

These results, which are positive and significant at a 99% confidence level, may indicate that there are unobservable factors that reduce the benefits of the Internship Contract for women, which do not seem to affect men. Thus, these values suggest the existence of a gender gap in the magnitude of the effect that the Internship Contract has on salary improvement.

Regarding the estimates by age, a pattern similar to that detected in gender can be observed. The effect of the Internship Contracts on the wage differential compared to Temporary Contracts decreases for individuals up to 22 years old and increases for those over 22 years old. The largest coefficient in magnitude for the first group is observed in the short term (198.26 vs. 153.27 euros in 2017). In contrast, for the second subgroup, the strongest effects are only seen three years later (164.63 vs. 185.48 euros in 2019). After two years, the impact remains greater for young people up to 22 years old (196.40 vs. 169.69 euros in 2018). The previous trend can be interpreted (and later tested in the Sensitivity Analysis section) as older individuals over 22 years old, who likely already have experience, enjoying higher wages simply because they have been in the labor market longer. In this sense, these differences may be explained by factors external to the treatment.

Regarding the subgroups formed based on educational level, two distinct trends can be observed regarding the effect of the treatment in the short and medium term. On the one hand, for those with only Vocational Training, the magnitude of the effect increases after one and two years, but after three years, it decreases to levels below those of the first year. On the other hand, for individuals with university education, the trend is upward; however, the coefficient in 2017 and 2018 is practically similar, being relatively lower in the second year. Nonetheless, the upward trend is clearly observed.

The overall results indicate that individuals who signed an Internship Contract in 2017 experienced sustained salary growth in the short and medium term, as well as in the duration of their subsequent contracts. This suggests that the benefits of this type of contract are not transitory but persist and, in some specific groups, expand over time.

This pattern of positive wage differentials over the years and the duration of post-treatment contracts may indicate that the Internship Contract provides skills and experience that led to greater job stability and higher earnings for its participants. From the first year to three years later, all groups achieve better outcomes than the Control Group, regardless of gender, age, or educational level. Despite this, emphasis should be placed on groups such as women and those under 22 years old, probably without prior work experience, who benefit less, with the latter group being the primary target of this ALMPs.

7.3. Probability of Obtaining a Permanent Contract or Staying with the Same Company

This section is dedicated to analyzing the effect of Internship Contracts on other aspects of career paths that are not related to future earnings. The results presented confirm the trends regarding job stability that these contracts may generate, as outlined in previous sections. While the estimation of the Average Treatment Effect on the Treated showed favorable results for those who signed such contracts, there are other outcomes of interest.

A preliminary approach was presented in the descriptive statistics section, where it was observed that people who signed an Internship Contract had a more stable career path compared to those who signed a Temporary Contract (more days worked, fewer contracts signed, and longer contract durations). This section presents the results of a more robust quantitative analysis, which consisted of estimating two binomial logistic models for the Treatment and Control “A” Groups matched by Propensity Score, as used in the previous section. The results of these estimations are found in rows 1 and 4 of Table 6.

The calculated models use dependent variables whether (1) the next contract of the individual in the sample who signed an Internship/Temporary Contract was permanent or (2) they continued working with the same company (regardless of the type of contract) after the completion of their respective contract. The first variable allows us to understand, from the individual’s perspective, the extent to which this policy helps its beneficiaries generate sufficient experience/knowledge to access more stable employment. The second variable helps us understand the extent to which companies value this form of contracting as an incentive to integrate young people into their workforce, train them, and then retain them as an asset in which they have invested to enhance their human capital.

Both models were estimated with demographic variables such as age, gender, education level, economic activity, and the duration of the reference contract, which help control unobservable effects that could bias the results.

Regarding the probability of obtaining a Permanent Contract, it was found that, for the complete sample, those who signed an Internship Contract are 7.8% more likely to obtain a Permanent Contract compared to those who signed a Temporary Contract. Additionally, gender-differentiated effects were found, with women (10.4%) having a higher probability than men (6%).

Differences by age were also observed, where individuals over 22 years old had an 8.5% probability of obtaining a Permanent Contract compared to 4.7% for those 22 years old or younger. In the case of education, the probabilities are the same, with 8%, regardless of the educational level.

When estimating the impact of the Internship Contract on the probability of staying with the same company after it ends, a negative effect was found for both the complete sample and the subgroups created. Those who signed such contracts have an 8.6% lower probability of staying with the same company compared to individuals with a Temporary Contract.

The impact is clearly uneven by gender, with women having up to a 14.3% lower probability, versus men who have a 3.7% lower probability. Regarding age, individuals over 22 years old have a -7.2% probability, while those 22 years old or younger have a -12% probability. Finally, the difference between those with Vocational Training and University Education is up to fourfold, with the former having a -16.7% probability of staying with the same company, compared to -4.5% for university graduates.

These results suggest that companies may be using this type of contract as a cost-cutting measure and that, unable to have the flexibility of a Temporary Contract, they prefer to use Internship Contracts. Furthermore, there appears to be a certain predisposition for men, older individuals (likely with work experience), and those with higher education levels.

As described in previous sections, the use of Internship Contracts has positive effects on job stability. It is likely that the knowledge, experience, and skills gained through these contracts send a signal that allows beneficiaries to obtain Permanent Contracts more easily than those who signed Temporary Contracts. However, it should be noted that the highly volatile nature of Temporary Contracts may keep their users in a cycle of job instability, a situation that is not typically associated with Internship Contracts.

Table 6. Probability of obtaining a Permanent Contract / Staying with the Same Company

	Complete Sample	Gender		Age		Education	
		Female	Male	Up to 22 years	Older than 22 years	Vocational Training	University
Obtained an Permanent Contract	0.078 (0.242)	0.104 (0.407)	0.060 (0.307)	0.047 (0.818)	0.085 (0.260)	0.080 (0.619)	0.080 (0.273)
Maximum Likelihood	0.002	0.005	0.051	0.040	0.003	0.017	0.005
Wald Test	0.000	0.002	0.007	0.005	0.000	0.024	0.001
Stayed at the Same Company	-0.086 (0.167)	-0.143 (0.249)	-0.037 (0.230)	-0.120 (0.479)	-0.072 (0.182)	-0.167 (0.319)	-0.045 (0.203)
Maximum Likelihood	0.002	0.006	0.037	0.015	0.020	0.0010	0.202
Wald Test	0.000	0.009	0.004	0.048	0.008	0.027	0.003

Note: The coefficients presented correspond to the marginal effects on the mean for each variable.

Note 1: Standard errors for each coefficient are in parentheses.

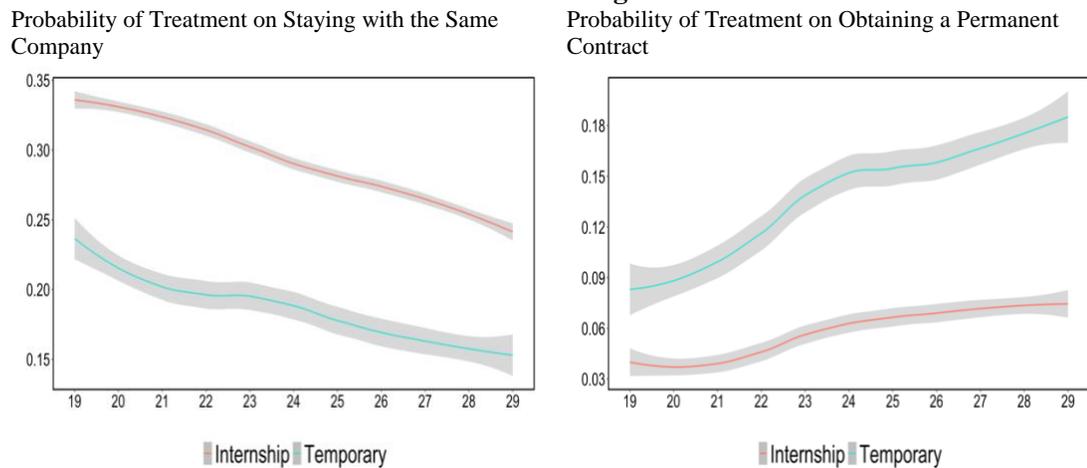
Note 2: Significance levels are as follows: 99% (***) ; 95% (**); 90% (*).

Source: Own elaboration with information from CSWL.

In this regard, and with the aim of providing robust results, both models were subjected to two joint significance tests of the variables: the Likelihood Ratio Test and the Wald Test. The results of the tests for the probability of obtaining a Permanent Contract are found in rows 2 and 3 of Table 6, while those related to estimating the chances of staying in the same company are in rows 5 and 6 of the same Table. All joint significance estimates of the variables at a 99% confidence level indicated that the coefficients are jointly relevant for explaining the target variables, both for the full sample and for the various subsamples created.

Panel 2 presents graphs “A” and “B”, which show the predicted probability for people with Internship and Temporary Contracts to obtain a Permanent Contract or to stay in the same company as their age increases. An important fact in both graphs is that, although the trend is the same for both groups (decreasing in “A” and increasing in “B”), there is a marked gap that widens in the case of the Permanent Contract and narrows in the chances of staying in the same company for the treated and controlled groups. Both images allow us to confirm what was estimated by the probabilities and presented in the descriptive statistics section, indicating that Internship Contracts might serve as a means for young people to acquire the knowledge and experience necessary to continue their working lives in other companies, but not the specific skills required by the companies where these contracts were made to continue in them.

Panel 2. Main results of the Logistics Model



Source: Own elaboration with information from CSWL.

7.4. Sensitivity Analysis

This section has two objectives. The first is to verify that the estimated coefficients for the ATT on the average duration of contracts and wages in the short and medium term, as well as the probabilities of obtaining a Permanent Contract and staying with the same company, are not sensitive to changes in the Propensity Score (PS) matching method. The second objective focuses on quantifying and confirming that the results are generalized to different treatment and control groups, which aim to characterize populations of interest for this analysis.

The first objective is important because different matching methods can generate samples with significant differences in the magnitudes, relevance, and directionality of the variables of interest. If this does not occur, it ensures that the positive effects of the Internship Contract are independent of the full sample used.

On the other hand, the second objective is relevant because, if it is certain that the choice of matching method does not affect the outcome, it is important to know if the results are valid when modifying key characteristics of the original sample, such as the minimum contract duration of individuals, the educational level by only selecting those with university education as the Internship Contract was originally designed, or whether individuals have prior work experience or not.

Table 7 presents the ATT and estimated probabilities from different PS matching methods. The matching algorithms used were "Optimal", "Genetic", "Nearest Neighbor" with its variables with caliper, with and without replacement. Most methods showed similar coefficients in both the ATT estimation and the probabilities. These achieved matched samples ranging from 467 (Nearest Neighbor with caliper) to 489 observations (Optimal, Genetic, Nearest Neighbor with and without replacement) out of the 491 available in the Treatment Group.

Regarding Average Contract Duration, the coefficient values range from 65.24 (Genetic) to 108.75 days (Nearest Neighbor with replacement) with a standard deviation between 20.97 and 22.90 days. The Average Monthly Wage in 2017 has values ranging between 135.48 (Genetic) and 174.67 euros (Optimal) with a standard deviation between 38.16 and 42.17 euros. For the Average Monthly Wage in 2018, the values vary between 135.48 (Genetic) and 174.67 euros (Optimal) with a standard deviation between 46.12 and 49.53 euros. Meanwhile, the Average Monthly Wage in 2019 shows values between 158.49 (Genetic) and 194.74 euros (Optimal) with a standard deviation between 47.82 and 51.36 euros.

On the probability of obtaining an open-ended contract, the lowest value was 5% (Nearest Neighbor with Caliper) and the highest was 7.8% (Optimal), with standard deviations ranging from 22.7 to 24.2 percent. As for the odds of staying with the same company, the coefficients hover between -8.6% and -12.6% with standard deviations between 16.4 and 16.7 percent. This situation could even place the probability in positive and negative values, depending on the case.

Except for Average Contract Duration, the rest of the variables have values for any matching method that fall within their respective standard deviations. The decision to use Optimal matching, as already mentioned, is because it automatically estimates the optimal difference between PS for observations, which the other algorithms do not. However, it is important to emphasize that the choice of any of these would have been indifferent since they offer similar results. The decision not to use the "Exact" or "Coercion" matching methods is exclusively due to the loss of observations (and valuable information) that their use entailed. It was considered that the loss of information (about 25% of the total sample) outweighed the potential efficiency derived from their use (since both methods minimize the heterogeneity between observable covariates)¹³.

¹³ The results derived from matching the propensity scores of the individuals in the sample with either of these methods lead to the conclusion that Internship Contracts have no effect on Average Contract Duration and Wages but do have an effect on the probabilities (in magnitude, significance and direction). While this could be a real possibility, it is considered that only a larger sample size would help to address this concern. However, the rest of the methods are robust enough to support the findings found in this paper.

The second part of this section presents the results regarding the Propensity Score Analysis, estimation of the ATT, and calculation of probabilities for other Groups “B”, “C”, “D”, “E”, and “F”. These samples were created for different purposes. Group “” aims to see the effects of the Internship Contract on young people with university education. Groups “C” and “D” aim to measure the sensitivity of the results of Groups “A” and “B” to modify contract duration. The training of Group “E” intends to see the effects of the Internship Contract on young people without work experience and Group “F” on individuals with previous experience. The propensity scores of the different groups were estimated with the specification of Group “A” and matched using the “Optimal” algorithm.

Table 7. Average Treatment Effect on the Treated and Probabilities. Different Propensity Score Matching Methods

Variable	Matching method						
	Optimal	Nearest neighbor with calibrator	Nearest neighbor without replacement	Nearest neighbor with replacement	Exact	Coercion	Genetic
Matched observations	489	467	489	489	360	243	489
Covariate Condition	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced	Balanced
Average Treatment Effect on the Treated							
Average Contract Duration	106.72*** (20.97)	101.70*** (21.44)	99.67*** (22.90)	108.75*** (21.03)	50.12 (22.51)	39.77 (29.03)	65.24*** (21.93)
Average Monthly Salary in 2017	174.67*** (39.00)	141.60*** (40.36)	146.65*** (42.17)	151.32*** (39.24)	22.82 (42.94)	32.81 (52.72)	135.48*** (38.16)
Average Monthly Salary in 2018	189.86*** (46.12)	164.95*** (46.99)	140.56*** (49.53)	167.37*** (45.92)	34.86 (50.11)	30.44 (62.93)	150.42*** (46.55)
Average Monthly Salary in 2019	194.74*** (47.82)	187.21*** (49.36)	158.49*** (51.36)	190.57*** (48.11)	56.73 (52.74)	67.53 (67.21)	162.66*** (48.12)
Probabilities							
Obtained an Permanent Contract	0.078*** (0.242)	0.050** (0.227)	0.053** (0.239)	0.056** (0.223)	0.080*** (0.225)	0.087*** (0.295)	0.069*** (0.235)
Stayed at the Same Company	-0.086*** (0.167)	-0.125*** (0.167)	-0.126*** (0.174)	-0.121*** (0.164)	-0.130*** (0.177)	-0.147*** (0.242)	-0.092*** (0.166)

Note: The coefficients presented in the “Probabilities” part correspond to the marginal effects on the mean for each variable.

Note 1: The standard errors for each coefficient are in parentheses.

Note 2: The significance level is 99% (***); 95% (**), 90% (*).

Note 3: The default calibrator value for the nearest neighbor method is 0.1, for method (3) the value chosen was 0.01.

Source: Own elaboration with information from CSWL.

Panel 3 visually presents the difference in the mean for each of the covariates before and after matching. As can be seen, all the observable variables included in the PS estimation for all groups improve their mean difference after using the matching algorithm. Additionally, the p-value of the Standardized Mean Difference confirms that they are balanced at a 95 percent confidence level.

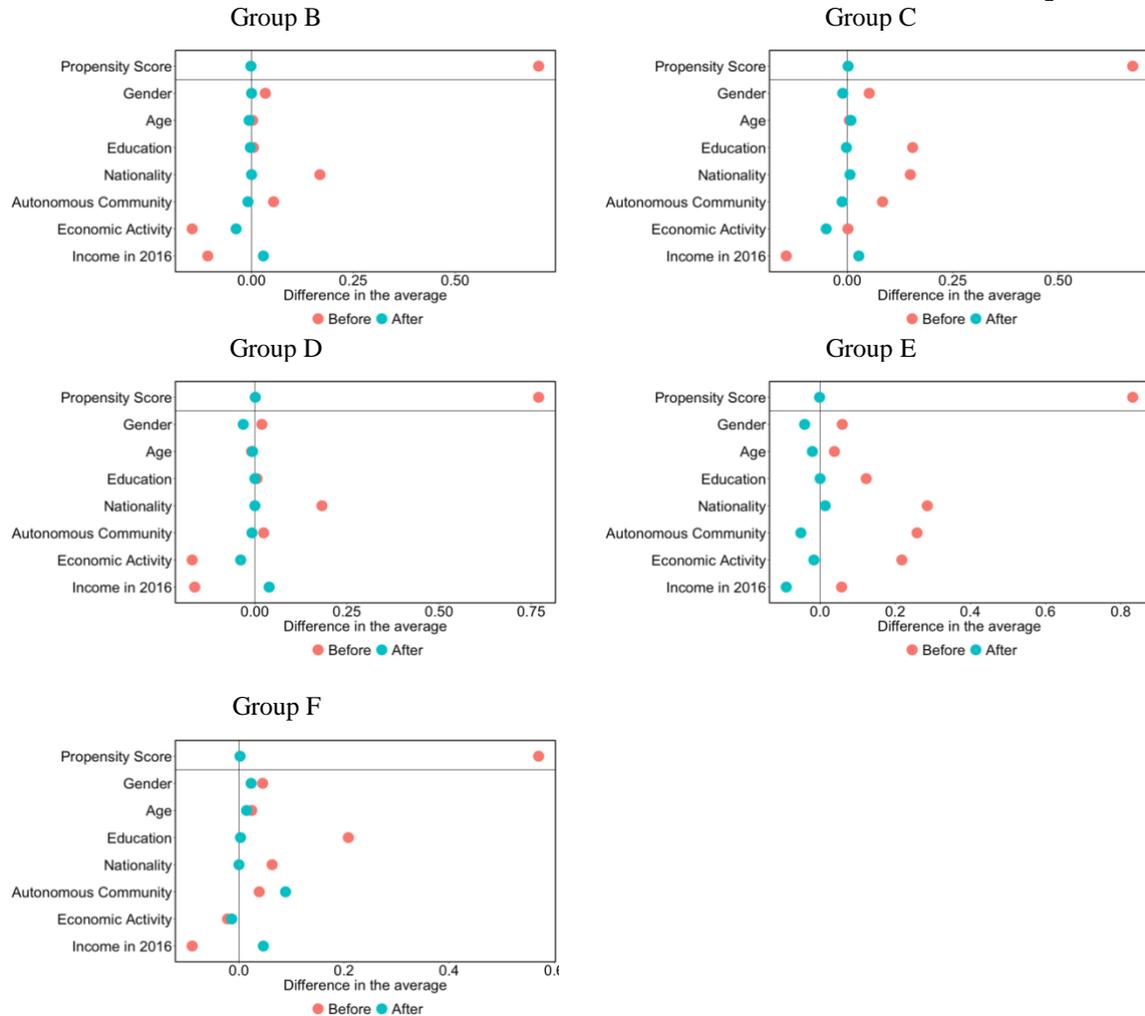
Table 9 shows the estimated coefficients for the ATT and the probabilities for the different formed Groups, with the results of Group “A” included as a reference to better appreciate the differences or similarities between Groups.

The magnitudes of the estimated coefficients for Group “B”, composed of individuals with university education, are positive but lower than those of Group “A”, indicating that the benefits for this group are not as strong concerning contract duration and future earnings. However, their

probability of transitioning to a permanent job is higher, although their chances of staying with the same company are also worse than those of the original Group.

As for the coefficients of Groups “C” and “D”, which aim to determine if the results of Groups “A” and “B” can be extrapolated to individuals whose internship contract lasted the legal minimum (6 months), the main finding can be summarized as follows: the magnitudes of the four groups are quite similar, but there is a significant difference. Unlike Groups “A” and “B,” where the effect of the Internship Contract was less intense for university graduates, it appears that when the time spent working under this contract increases, the effect becomes more potent.

Panel 3. Difference in Covariate Means between Treatment and Control Groups



Source: Own elaboration with CSWL data.

In this line, the probability of moving to an open-ended contract is the same, and the probability of staying in the same company are close to positive values for both groups, but especially for university students.

The results for young people with no previous work experience are particularly interesting. Even though all the coefficients for both contract duration and wages are positive and significant and are in line with those obtained for the other groups, the effect of the internship contract for this group does not have an increasing trend in wages in the medium term.

On the other hand, their probability of staying in the same company is even lower than that of the other groups, while the treatment does not seem to affect the probability of moving towards a Permanent Contract. These results are extremely important since, in theory, internship contracts are designed for this profile of beneficiary and are precisely where their effects are less clear.

Finally, the effects of Internship Contracts for young people with work experience are quite similar to those estimated for the original Group. It can be seen how the effect on wages seems to be permanent and increasing as the years go by (being the highest of all the groups). Likewise, they have a higher probability of obtaining a Permanent Contract and a higher probability of staying in the same company than young people without experience. These differences in the coefficients could be due to how employers perceive experience in the labor market; this aspect along with several others are discussed in depth in the last section of this paper.

**Table 9. Average Treatment Effect on the Treated and Probabilities
Different Treatment and Control Groups**

	Group "A"	Group "B"	Group "C"	Group "D"	Group "E"	Group "F"
Average Treatment Effect on the Treated						
Average Contract Duration	106.72*** (20.97)	80.32*** (27.20)	68.87*** (22.45)	65.83** (27.93)	136.38*** (40.60)	102.80*** (24.59)
Average Monthly Salary in 2017	174.67*** (39.00)	164.18*** (49.52)	141.61*** (38.71)	154.69*** (50.26)	164.33** (73.06)	174.46*** (45.50)
Average Monthly Salary in 2018	189.86*** (46.12)	151.55** (59.38)	177.39*** (46.41)	184.27*** (60.99)	153.85* (87.73)	176.60*** (53.35)
Average Monthly Salary in 2019	194.74*** (47.82)	157.90** (62.12)	185.80*** (47.89)	197.14*** (63.06)	166.51* (91.46)	200.85*** (56.88)
Probabilities						
Obtained an Permanent Contract	0.078*** (0.24)	0.104*** (0.29)	0.068*** (0.229)	0.069** (0.262)	0.043 (0.447)	0.077*** (0.269)
Stayed at the Same Company	-0.086*** (0.17)	-0.12*** (0.20)	-0.064** (0.167)	-0.029 (0.202)	-0.136** (0.288)	-0.074*** (0.207)

Note: The coefficients presented in the "Probabilities" part correspond to the marginal effects on the mean for each variable.

Note 1: The standard errors for each coefficient are in parentheses.

Note 2: The significance level is 99% (***); 95% (**), 90% (*).

Source: Own elaboration with information from CSWL.

8. Conclusions

This study aimed to expand the literature on the evaluation of public policies in labor markets by providing empirical evidence on the effects of ALMPs on qualified European youth. To achieve this, the impact of Internship Contracts—an ALMP tool whose consequences have been little studied both in Europe and in Spain—on the income and job stability of young people between 2016 and 2019 was estimated, in comparison to Temporary Contracts, the second most used employment relationship in Spain.

Using data from the Continuous Sample of Working Lives and Propensity Score Analysis to eliminate potential selection biases, the Average Treatment Effect on the Treated was estimated regarding the average duration of subsequent contracts and wages in the short (1 year) and medium term (2 and 3 years).

Additionally, Logit models were used to calculate the probability of obtaining a Permanent Contract and staying with the same company after the contract's termination. The analysis focused on a baseline group and various sub-samples that varied by gender, education, and age.

To ensure that the results obtained were not sensitive to modifications, the corresponding estimates were made by altering the matching algorithms and with different groups that varied the minimum duration for which the contract was used, educational level, and previous work experience of the participants.

In general terms, it was found that for all the samples used, the use of Internship Contracts as opposed to Temporary Contracts allowed their beneficiaries to achieve better wage prospects in the short and medium term, longer subsequent contracts, and greater chances of obtaining a permanent job after the contract's termination. In contrast, those with a Temporary Contract showed a higher likelihood of staying with the same company after its termination. While these results held for all samples used in this analysis, differentiated effects were found based on gender, experience, and education, which are described below.

The average duration of subsequent contracts is 30% higher for men compared to women. Additionally, although the short-term wage differential is stronger for women than for men, evidence shows that as years pass, the magnitude decreases for women and increases for men. This indicates the existence of external gender factors that prevent women from capitalizing on the effects of the Internship Contract in the medium term. Regarding the likelihood of staying with the same company, although negative for both groups compared to those who signed Temporary Contracts, women are up to five times less likely than their male counterparts.

The duration of the first contract and the educational level are relevant. The effect of Internship Contracts on young people with university education increases as the time spent under the contract increases. This result is reciprocal for young people whose education is limited to Vocational Training, as shorter contract durations had a greater impact. This also allowed confirmation that the results of the original groups held regardless of the contract's duration.

Previous experience also plays an important role. If the analysis is conducted based on participants' age, it is observed that among young people aged 22 or less, who are likely to have little or no work experience, the wage difference tends to decrease over time. Conversely, for those over 22 years old, who presumably have had other jobs, a growing wage trend is observed. Additionally, these individuals are almost twice as likely to stay with the same company and to obtain a Permanent Contract compared to those under 22 years old.

The findings are confirmed when analyzing the Groups by prior work experience before signing the contract. A constant wage differential is found in the short and medium term for individuals without experience, contrasting with the growing trend present in those with prior experience. Moreover, the likelihood of staying with the same company is nearly double, while no significant effect is found on the probability of obtaining a Permanent Contract if there is no prior work experience.

As a result, the most benefited groups from the current Internship Contract are men with university education and prior work experience who fulfilled the contract's minimum legal duration. These results suggest, on one hand, that employers prefer men after the contract's termination, making it a better choice for women to change companies, where they have a higher probability of obtaining a Permanent Contract.

Finally, some clarifications about this work are important. First, although the results show positive effects and it is certain that potential selection biases derived from the individuals' observable covariates were controlled, some aspects still need to be mentioned. The first focuses on individuals' unobservable characteristics, which, if sufficiently large, could affect the composition of the Treatment and Control Groups and consequently the estimates.

The most prominent in the literature are "soft skills," which can have an effect both on labor market entry with an internship or Temporary Contract and on outcomes in wages, contract duration, and the likelihood of obtaining a Permanent Contract or staying with the same company. Regarding this limitation, there is full awareness of the potential effects of this and other unobservable characteristics, which are difficult to record by the CSWL and are not entirely controllable. However, in this study, estimates were made using all possible observable characteristics, which sought to minimize the likelihood of these unobservable covariates affecting the results.

Secondly, there could also be some concern about how effective it is to create an ALMP for population groups who, due to their age and educational level, could enter the labor market independently of the ALMP, especially knowing that the most benefited groups are those who generally have better employment opportunities. In this regard, it can be argued that the results, although smaller, are positive and significant for women, individuals with only Vocational Training, or without experience, allowing the conclusion that this ALMP is effective.

Another related issue is the chosen counterfactual. Ideally, this should have consisted of people who could have signed an Internship Contract but did not; however, creating such a group is impossible with available information. The choice of individuals with Temporary Contracts as the Control Group emerges as a good alternative. This group has been used in other similar studies, but it should be noted that, due to the characteristics of this type of contract, such as short duration and employers' marked preference for them, the results should be treated with caution. In response to this potential concern, the best answer is that given the available information sources and the methods that sought to work with the most similar samples, there is no more suitable control group.

Despite these potential limitations, the presented results demonstrate that Internship Contracts have significant positive effects on young people. These effects are not only long-term but also provide substantial help for young people to develop more stable and promising career paths. The job stability offered by these contracts allows them to acquire essential experience and skills that enhance their future employability. Therefore, a strong recommendation would be to continue promoting and encouraging the use of Internship Contracts over Temporary Contracts, especially among groups such as women, individuals without experience, or with only Vocational Training. Such policies would not only benefit those under 30 but also contribute to creating a more robust and dynamic labor market with better-prepared and more confident professionals.

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