

QUANTITATIVE ANALYSIS OF THE IMPACT OF HIGHER PROFESSIONAL TECHNICAL COURSES ON NEET YOUTH FROM VOCATIONAL EDUCATION PATHWAYS

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Abstract

This study examines the role of Higher Technical Professional Courses (CTeSPs) in addressing the NEET (Not in Education, Employment, or Training) issue among young people in Portugal, specifically those aged 16-34. Using data from the National Institute of Statistics (INE) and the Directorate-General for Higher Education (DGES), the research focuses on analyzing how CTeSPs offered by both public and private higher education institutions affect NEET rates. The study employs statistical techniques to explore the correlation between CTeSP participation and the reduction of NEET individuals. The results reveal that the CTeSPs offered by higher education institutions significantly contribute to the reduction of the NEET population. When analyzing the data separately for public and private offerings, it is evident that the reduction in the number of young people in this situation continues to decrease significantly with the increase in the number of available courses. The results suggest that CTeSPs play a crucial role in addressing youth unemployment and disengagement, emphasizing the importance of expanding these programs. The study advocates for the reinforcement of public course offerings within these areas to further reduce NEET rates.

Keywords: *NEET (not in education, employment, or training), CTeSPs (higher professional technical courses), education, youth.*

1. Introduction

In Portugal, the increase in the total number of students in higher education is particularly related to the creation of short higher education courses, such as the Higher Professional Technical Courses - CTeSP (Heitor, 2022).

Higher Professional Technical Courses were initially regulated by Portuguese law with Decree-Law No. 43/2014, of March 18, with the aim of offering an alternative to university education, focused on practical and specialized training. CTeSP is a higher education cycle that does not award an academic degree, with 120 ECTS credits and a duration of two years, the successful completion of which leads to the award of a higher professional technician diploma (DGES, 2024). According to Decree-Law No. 43/2014, this training offer aims to: “a) ensure that the graduate has comprehensive, specialized, factual and theoretical knowledge, in a specific area of study or work, and awareness of the limits of this knowledge; b) provide the graduate with a comprehensive range of cognitive and practical skills necessary to design creative solutions to abstract problems; c) develop the graduate's management and supervision skills, in study or work contexts subject to unpredictable changes, and to review and develop their own performance and that of third parties”.

These courses (CTeSP) can be a viable option for young people who fall into the NEET category, offering them the opportunity to acquire specific skills and improve their employability.

The term NEET - Not in Education, Employment, or Training - demonstrates a complex approach, being a definition studied across various age groups, including those between 15 and 24, 29, or 34 years old (Eurostat, 2024; INEa, 2024). In the context of the Europe 2020 Strategy, the European Commission introduced the NEET rate (Young people Neither in Employment nor in Education and Training) to monitor trends in youth labor market participation and facilitate comparisons between European Union member states (INE, 2013). The NEET term has become increasingly popular in discussions on labor market issues and the challenges of integration and marginalization faced by young people (IOL, 2015; Mussida & Sciulli, 2018; Mussida & Sciulli, 2023). Therefore, NEET refers to young people who are not engaged in education,

employment, or training programs. Over time, the concept has been widely studied in both public policies and academia, undergoing significant changes (Alonso et al., 2022; Mascherini, 2019).

Eurostat (2024) examined the situation of NEET youth in Europe, emphasizing the importance of ensuring a smooth transition from education to work for these young people, while also highlighting the risks of being neither employed nor engaged in education or training. The study concludes that in 2023, 11.2% of young people aged 15 to 29 in the European Union were neither in employment, education, nor training. The situation is more favorable for Portugal, where the lowest rates, already below the 9% target, were also observed in the Netherlands, Sweden, Malta, Slovenia, Ireland, Luxembourg, Denmark, Germany, and Portugal. These countries thus reached the long-term EU target for 2030 as early as 2023 or even earlier.

2. Design

This research follows a quantitative approach, based on analysing secondary data from the National Institute of Statistics and the Directorate-General for Higher Education. The aim is to assess the impact of Higher Technical Professional Courses on reducing the number of young people who neither study nor work.

The data was selected from official statistical databases, considering the number of indicators related to the rate of young NEETs and the implementation of the CTeSP, in a generalised way and then analysing it in terms of public and private higher education provision. For the analysis, descriptive and inferential statistical techniques were used, namely correlations, allowing trends and possible relationships between the expansion of the CTeSP and the variation in the NEET population to be identified.

3. Objectives

The main aim of this study is to analyse the impact of Higher Technical and Professional Courses on reducing the number of young people who neither study nor work in Portugal.

More specifically, the aim is to:

1. Identify the evolution of the rate of young NEETs and the performance of CTeSP courses since their creation in 2014;
2. Assess whether the CTeSP offer contributes to reducing the rate of young NEETs;
3. To assess whether the CTeSP offer in public and private higher education contributes equally to the reduction of young NEETs;
4. Contribute to reflection on the effectiveness of vocational education policies as a promoter of reducing youth unemployment and further education.

4. Methods

For the analysis carried out, the most recent data (last trimester of 2024) was taken into account, by NUTS II: rate of young people aged between 16 and 34 not in employment who are not in education or training (INE data), employment rate by age group (INE data) and number of Higher Professional Technical Courses registered with the Directorate-General for Higher Education (DGES data). Then, available by institution, were later grouped by NUTS II and by type of offer, i.e. public or private higher education. Finally, descriptive statistics techniques were applied, the normality of the data was checked and the inferential methodology of Spearman and Pearson correlation was used. The NUTS II in Portugal are intermediate-level territorial units for statistical and regional planning purposes, dividing the country into five regions: North, Center, Lisbon Metropolitan Area, Alentejo and Algarve, as well as the Autonomous Regions of the Azores and Madeira.

5. Results and discussion

To answer the question about the evolution of the rate of young NEETs and the performance of CTeSP courses since their creation in 2014, it is necessary to examine a few key points: the evolution of the rate of young NEETs (*Table 1*), the number of students enrolled in CTeSP courses offered by public and private higher education institutions (*Table 2*), as well as the number of CTeSP courses by NUT II- Northern, Centre, Lisbon Metropolitan Area, Alentejo, Algarve, Azores Autonomous Region and Madeira Autonomous Region (*Table 3*).

The analysis of NEET from 2014 to 2024 reveals a national trend of reduction, falling from 15.3% in 2014 to 9.2% in 2024. Regionally, the Centre region stands out, with the lowest NEET rate in 2024 at 7.8%, showing consistent improvement from 12.7% in 2014. The Northern region also saw a significant

reduction, dropping from 15.6% in 2014 to 9% in 2024. However, the Algarve region presents a more challenging reality, with the highest NEET rate in 2024 at 11.4%, possibly reflecting difficulties related to the seasonality of tourism and the lack of stable jobs for young people. The Azores and Madeira regions continue to have the highest NEET rates, with the Azores remaining around 12.9% in 2024, although showing a slight decrease. These data indicate that, despite the progress, there are still significant challenges in some regions of Portugal, particularly in the islands and the Algarve, where access to education and employment opportunities remains a critical factor - *Table 1*.

Between 2014 and 2021, the total number of students enrolled in polytechnic higher education, both public and private, showed continuous and significant growth. Public polytechnic higher education, which started with 345 students in 2014-2015, reached 12.742 students in 2020-2021, demonstrating a substantial increase. On the other hand, private polytechnic higher education, with just 50 students at the beginning, reached 4.348 students in 2021. Despite the growth in the private sector, the public sector still holds a dominant share, although the gradual increase in enrolment in private higher education shows a trend of expansion - *Table 2*.

Table 1. Evolution of the rate of young NEET by place of residence (NUTS II) based on the 4th quarter of each year.

NUT II/ Year	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	2020 (%)	2021 (%)	2022 (%)	2023 (%)	2024 (%)
Portugal	15,3	14,4	13,7	11	10,4	10	10,9	10,4	10,2	10	9,2
Northern	15,6	14,8	13,3	11,6	9,5	8,3	9,9	9,6	10	10,1	9
Centre	12,7	13,6	12,9	9,4	9,8	9,5	9,7	9,9	10,1	9	7,8
Lisbon Metropolitan Area	13,7	11,9	12,8	9,6	9,5	10,4	10,3	10,4	8,8	9,2	9,2
Alentejo	18,1	14,2	13,4	12	14,3	12,6	8,9	10,1	10,5	10,2	11,3
Algarve	18,2	19,8	17,6	12,9	13,4	12,3	18,4	12,8	14,5	13,1	11,4
Azores Autonomous Region	25,7	22,1	21,8	20,9	19,6	17,2	20,7	20	16,5	16,5	12,9
Madeira Autonomous Region	25	23,6	20,4	15,5	14,6		21,2	13,4	14,7	13,3	10,7

Source: INE (2024b)

Table 2. Evolution of the total number of students enrolled in CTeSP, excluding international mobility.

Higher Education Institution/ Years	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Public Higher Education – Polytechnic	345	5369	9168	10169	11753	12998	12742
Private Higher Education – Polytechnic	50	1061	1880	2608	3668	4383	4348
Total	395	6430	11048	12777	15421	17381	17090

Source: DGEEC- RAIDES (2017-2018; 2019-2020)

To address objectives 2 and the remaining ones, we need to analyze *Table 2* and the following. As can be seen in *Table 2*, there are 1.109 CTeSPs spread across the country, with the highest concentration of courses in the Northern region (35%), followed by the Centre (31.1%), Lisbon Metropolitan Area (17.6%), Alentejo (10.4%), Algarve (3%), Madeira Autonomous Region (2.3%), and Azores Autonomous Region (0.5%). Regarding public higher education, the Centre (40%) has the highest prevalence of CTeSP offerings, while the Azores Autonomous Region (0.8%) has the lowest. In the private sector, the distribution is notably different, with the northern region (52.4%) offering the highest number of CTeSPs, contrasted by 8.6% in the Centre, and no offerings in the Azores Autonomous Region. As for the NEET rate, the Azores Autonomous Region has the highest rate (12.9%), while the Centre has the lowest (7.8%). It is worth noting that four regions (Alentejo, Algarve, Azores Autonomous Region, and Madeira Autonomous Region) have NEET rates above 9%, which is the national average for Portugal.

Table 3. Number of CTeSPs; Number of CTeSPs by Public and Private Higher Education; NEET Rate; Youth Employment Rate.

	CTeSP (total offer)		CTeSP (Public H. E.)		CTeSP (Private H.E.)		NEET	Youth Employment
	N°	%	N°	%	N°	%		
Northern	389	35.08%	225	28.27%	164	52.40%	9%	56,3%
Centre	345	31.11%	318	39.95%	27	8.63%	7.8%	54%
Lisbon Metropolitan Area	195	17.58%	100	12.56%	95	30.35%	9.2%	58,8%
Alentejo	115	10.37%	99	12.44%	16	5.11%	11.3%	54,6%
Algarve	33	2.98%	30	3.77%	3	0.96%	11.4%	57,8%
Azores Autonomous Region	6	0.54%	6	0.75%	0	0.00%	12.9%	58,8%
Madeira Autonomous Region	26	2.34%	18	2.26%	8	2.56%	10.7%	56,3%

Source: DGES (2024); INE (2024a)

The results obtained through Pearson's and Spearman's correlations indicate a significant association between the offer of CTeSPs and the reduction of the NEET rate. The negative correlation observed between the number of available CTeSPs and the NEET rate suggests that as the offer of these courses increases, the number of young people in this situation decreases. Specifically, the correlation between the total number of CTeSPs and the NEET rate showed a value of $R_P = -0.875$, with a p-value of 0.010, indicating a strong and statistically significant association between these two variables. This suggests that an increase in the offer of CTeSPs may have a considerable positive impact on reducing the NEET rate, supporting the idea that vocational education can serve as an effective tool to reintegrate young people into the educational system or the labor market. When analyzing the public and private offers of CTeSPs separately, it is observed that both sectors significantly contribute to the reduction of the NEET rate. For public higher education institutions, the correlation was $R_P = -0.869$ with a p-value of 0.011, showing a strong and significant relationship between the increase in the offer of CTeSPs and the reduction of the NEET rate. This result suggests that public institutions play a crucial role in decreasing educational and professional exclusion among young people. On the other hand, the correlation for private institutions, with $R_S = -0.857$ and p-value of 0.014, also showed a significant relationship, albeit slightly weaker, indicating that the private offer of CTeSPs also plays a relevant role, but with a somewhat smaller impact compared to the public sector- *Table 4*.

Table 4. Correlation between the NEET rate and the offer of CTeSP courses.

Total Number of CTeSPs	$R_P = -0,875$ $p = 0,010$
Number of CTeSPs (Public Higher Education)	$R_P = -0,869$ $p = 0,011$
Number of CTeSPs (Private Higher Education)	$R_S = -0,857$ $p = 0,014$

Source: own elaboration

6. Conclusions

The term NEET has been widely debated by both academia and various governments, as young people play a crucial role in ensuring the functioning of the economy and the sustainability of the state. Their relationship with short-duration training programs within higher education in Portugal, although recent, needs to be increasingly explored. This type of offer presents an important opportunity to reduce the rate of young people who are not engaged in education or the labor market, serving as an incentive for their reintegration into education or productive activities.

These findings reinforce the idea that the expansion of higher professional technical courses, both in the public and private sectors, could be an effective strategy for reducing the NEET rate. The strong association between the offer of CTeSPs and the reduction of this rate suggests that higher vocational education could be an effective response to mitigate youth unemployment and promote the qualification of young people for the labor market, while also offering opportunities for continuous education.

However, it is important to highlight that, although the correlations show a significant relationship, other factors may influence the results, such as the quality of the courses offered, the alignment of training

with labor market needs, accessibility, and the support provided to students. Therefore, public policies aimed at vocational education should be accompanied by ongoing analysis of the supply and demand for skills in the labor market to ensure that CTeSPs are aligned with the socio-economic context and contribute effectively to reducing the NEET rate.

Based on the results presented, it can be concluded that the offer of CTeSPs plays a crucial role in reducing the NEET rate, both in public and private higher education. The strong correlation between the offer of courses and the decrease in educational and professional exclusion suggests that public policies encouraging the expansion of higher vocational education could be an important tool in combating youth unemployment and promoting the qualification of young people for the labor market.

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