

Studying During a Pandemic: the Impact of Covid19 on Higher Education Choices in the Netherlands

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Extended Abstract

Following the outbreak of the COVID-19 pandemic, more than 60 million EU students were temporarily sent home due to school closures aimed at limiting the spread of the virus. Following the first wave of the pandemic, schools remained fully open only for one third of the regular instruction periods. During periods of partial and full school closure, learning was replaced by distance learning. Diverse forms of hybrid learning and online tools and platforms became the delivery mode of lessons and learning materials for students undertaking their education at home.

Against this background, the literature on the impacts of school closures and distance learning on student achievement has been growing rapidly. At the national level, several studies have employed student test score results from before and during the pandemic to conduct a comparison that serves to quantify potential learning losses. Results generally point towards negative effects of the pandemic ([Maldonado and De Witte, 2022](#); [Engzell et al., 2021](#); [Schult et al., 2022](#); [Contini et al., 2021](#)). Moreover, many of these studies document a pattern of rising inequality along pre-existing socioeconomic gaps as learning loss is minor among students benefitting from a good learning environment at home with access to internet, physical space as well as parental support.

Another important related question is to what extent the negative effects are permanent. A number of studies have analysed to what extent the learning losses were reversed as students continued with regular education after the most intense lockdown period(s) ([Gambi et al., 2021](#); [Gortazar and Arenas, 2022](#)). On the other hand, for students who experienced the pandemic crisis towards the end of their study cycle, the negative effects are potentially reflected in further stages of their career paths. The literature investigating the short-term impact of schools closure on educational and labour market paths of students exiting from education in the midst of the pandemic is still relatively scarce ([Bulman and Fairlie, 2021](#); [Bussink et al., 2022](#)).

This paper aims at filling this gap by providing new evidence on how the COVID-19 pandemic influenced the decision of pupils at the end of secondary education on their

future educational path. On the one hand, less promising labour-market prospects could lead to the decision to stay in education and start a new study to add more capital to the already acquired stock of human capital. At the same time, the prospect of undertaking higher education with remote learning modes might make continuing studies more affordable for students from financial constrained households. On the other hand, learning losses caused by school closures might decrease the probability of being admitted to tertiary education.

We take advantage of population administrative data for the Netherlands, with rich info on students' educational paths and socio-economic background, to analyse the educational choices of the 2020 cohort of Dutch high school graduates. Thanks to the richness of the dataset used, we are able to assess to what extent any observed difference in the choices of students belonging to the graduation cohort affected by the pandemic relative to an unaffected counterfactual cohort are attributed to the school closures caused by the Covid19 crisis. Furthermore, we are able to explore the heterogeneity of our results along characteristics that have been shown to be highly relevant in determining the unequal impact of Covid19, including students' socio-economic background.

Secondary education in the Netherlands encompasses schools providing: pre-vocational secondary education (VMBO, duration of 4 years); senior general secondary education (HAVO, duration of 5 years); pre-university education (VWO, duration of 6 years). Pre-vocational secondary education leads to secondary vocational education (MBO), which provides both theoretical instruction and practical training in preparation for the practice of a wide range of occupations for which a vocational qualification is necessary or useful. Senior general secondary education provides a general education and is intended to prepare pupils for entry to higher professional education/university of applied sciences (HBO). The purpose of pre-university education is to prepare pupils for university entry (WO). In our study we focus on pupils from senior general secondary education and pre-university education in order to investigate their choices of enrolment in tertiary education.

We use administrative data from the Dutch *Centraal Bureau voor de Statistiek* (CBS). CBS collects information on all individuals residing (or that have resided) in the Netherlands. We use the latest available municipal population registers (2021), which contain anonymised demographic information on all persons ever appearing in the municipal population registers starting 1 January 1995. Our primary sample of interest is composed of two cohorts of secondary school graduates who finished their study cycle just before (the 2019 cohort) and during (the 2020 cohort) the COVID-19 crisis. We restrict the analysis to individuals who have finished senior general secondary education and pre-university education and who have received a diploma before the end of October in the year of graduation.

We match this sample with data on registration and achievement in primary school, in order to retrieve information on secondary school graduates' previous educational per-

formance. Furthermore, we match individuals with data on parents and grandparents annual gross income and highest educational attainment. Income microdata is collected from Dutch public administrations, of which the most important data provider is the Tax and Customs Administration. This provides information on the persons belonging to the population of the Netherlands on 1 January of each year. Education microdata is instead provided by combining information on education levels from various registers and the Labor Force Survey. Finally, we match our sample to a set of neighborhood (*buurt*) and city (*gemeente*) characteristics on income and ethnic segregation. CBS records the addresses of each individual appearing in their municipal population registers. To identify the location where individuals grew up, we search for their parents' most recurrent address between the individuals' year of birth and their year of graduation from high school. We then assign to each address a neighbourhood and a city and compute a set of income and ethnic segregation indicators, which are correlated with educational paths.

We use this rich set of characteristics to match individuals who experienced the pandemic during their last year of secondary school –the “treated” cohort of 2020 high school graduates– with similar students finishing secondary education before the pandemic in 2019 –the “control” cohort. This matching is performed by using a propensity score matching approach, as formalized by [Rosenbaum and Rubin \(1983\)](#).

Our primary outcomes of interest are measures of students' decisions regarding the educational path they take upon exit from secondary school. A first outcome is a binary indicator for enrolling in tertiary education. Additional outcomes include indicators of whether students from different secondary education tracks continue their studies along the common path envisaged for the respective track, or rather a downgrade is observed. In other words, taking pre-university secondary education as an example: conditional on continuing studies, do students graduating from this high school track enrol in university, or do we see them choosing professional higher professional education?

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