

# Sequences of labour market entry of higher education graduates in Poland

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## **Extended abstract**

Almost half of the young people in Poland have a tertiary education degree. The fast expansion of higher education, observed after the economic transition in Poland, led to the decline of the premium for tertiary education, observed at the labour market. Transition from education to labour market can take different paths, as employers may take into account differences in fields of study upon hiring labour market entrants (i.e. Klein, 2016).

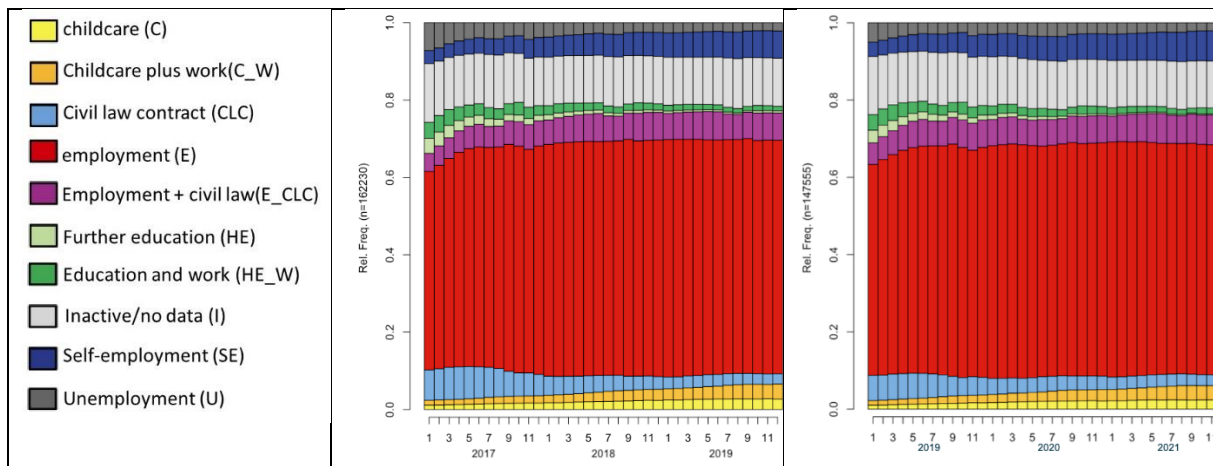
The aim of our study is to investigate the gender relevance of graduates' labour market entry patterns taking into account the individual characteristics of the graduate, characteristics of the completed studies completed, as well demographic, economic and epidemiological characteristics of the place of residence. We also analyse the relevance of the Covid-19 pandemic to graduates' labour market entry pathways, that is if there is a distinct pattern of labour market entry during the COVID-19 pandemic.

Our analysis is based on three sources of data. First, we use the seventh edition of the nationwide system of graduate tracking in Poland (ela.nauka.gov.pl), from which we use information on individual data, including sex, age, field of study, work experience before graduation, county of residence, and if graduate had experience of maternity/parental leaves. We also use demographic and economic characteristics of the county from Statistics Poland data, as well as health data from the e-Health Centre, including COVID-19 related deaths in the county and COVID-19 vaccination rate in the county. We also use the Oxford Covid-19 Government Response Tracker data - Covid-19 Stringency Index.

We study the population of graduates from 2016 and 2018 and their respective careers in periods 2017-2019 (before pandemic) and 2019-2021 (during pandemic). We analyse their monthly status at the labour market, based on the social insurance data using sequence analysis. The construct distance (dissimilarity) matrices between activity sequences during labour market entry (36-element vectors) using optimal-matching (equal weights assumed). Then, we classify by similarity of labour market entry patterns by applying hierarchical cluster analysis. Finally, we use multinomial logistic regression to investigate individual, local and time-related determinants of labour market entry.

Figure 1. Sequences of labour market status in cohorts 2016 and 2018

	2016	2018
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Source: own analysis

Using the cluster analysis, we identified 10 distinct clusters characterising labour market entry. The comparison of the pre-Covid and Covid graduates indicates that during the pandemic, slightly less graduates were in the dominant sector of the stable employment contract, while there was a higher share of those that experienced long-term inactivity.

Table1. Composition of clusters of labour market entry – comparing graduates from 2016 and 2018

Cluster	Share of graduates from 2016	Share of graduates from 2018
Childcare	3.6%	3.4%
Childcare and work	2.0%	3.1%
Increasing self-employment	7.9%	8.3%
Work and civil law contracts	7.8%	6.2%
Long-term inactivity	6.6%	11.4%
Further studies	3.0%	3.2%
Slower transition to employment contract	4.0%	3.8%
Stable employment contract	59.1%	56.9%
Instable employment (civil law)	4.0%	2.6%
Periods of unemployment	2.0%	1.0%

In order to investigate, how individual and local characteristics are associated with different paths of labour market entry we performed a multinomial logistic regression. We explained belonging to the selected cluster (with reference cluster of stable employment contract) with the following individual and local characteristics:

- Gender (ref: male)
- Foreigner (ref. Polish citizen)
- Work experience before graduation(ref: work experience before studies)
- Form of study (part-time vs. full-time; ref: part-time)
- Field of study (ref: humanities)
- Class of locality of residence (more than 500,000 inhabitants (large cities); other cities with county rights (medium-sized cities); other localities; ref: other localities)
- Unemployment rate in county of residence
- Number of deaths from Covid-19 in the county of residence per 1,000 inhabitants
- Number of vaccinations against Covid-19 in the county of residence per 1,000 inhabitants

Our results indicate that there are little differences in the obtained regression coefficients for 2016 and 2018 cohorts. This means that the labour market entry during the Covid-19 pandemic was not much different when taking into account the identified clusters (differences in the size of clusters are still noted).

Women were more likely in the childcare related clusters, while less likely in the one that was linked to transition to self-employment. Foreigners were less likely to use maternity leave, they also less frequently registered as unemployed (which is due to the legal provisions in Poland). Lack of work experience before or during studies increased chances to have more atypical transitions to the employment status, especially through non-stable employment or unemployment periods. Graduates from medical studies were more likely to be self-employed or have parallel contracts. Graduates from technical or exact sciences were less likely to experience less stable employment or unemployment. Those living in large cities were less likely to experience maternity/paternity and childcare periods. Higher unemployment in the county level also resulted in higher probability of experiencing unemployment.

In conclusion, our results indicate that the individual characteristics, including also fields of study affect labour market entry paths. Covid-19 pandemic also affected the composition of different paths of labour market entry.

#### References:

Klein, Markus (2016) The association between graduates' field of study and occupational attainment in West Germany, 1980–2008, *Journal of Labour Market Research* 49: 43-58