



The impact of training duration on employment outcomes: Evidence from LATE estimates[☆]



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HIGHLIGHTS

- This paper estimates the causal effect of training duration on employment outcomes.
- We use planned duration as an instrument for endogenous observed training duration.
- Our estimates indicate that an increase in duration has a positive impact for short durations.
- And we find an increase in duration has a negative impact for long durations.

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ABSTRACT

We analyze the causal effect of training duration on employment outcomes of unemployed workers. Observed training durations might be endogenous. We use planned duration as an instrument for actual duration. LATE estimates indicate that an increase in duration has a positive impact for short programs and a negative impact for long programs.

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1. Introduction

The provision of training for unemployed workers can be heterogeneous in terms of treatment duration. Durations differ across individuals either because participants were assigned to different treatment durations or because some individuals leave programs early or stay longer in the treatment than initially planned.

Recent contributions analyzing the impact of continuous training durations include Flores et al. (2012) and Kluge et al.

(2012). Both studies apply generalized propensity score methods based on the assumption of unconfoundedness. They find a slightly positive program impact on employment outcomes that gradually increases with training duration, especially for shorter durations.

However, dropouts from training programs might be endogenously determined. Heckman et al. (1998) and Heckman et al. (2000) provide evidence that not taking this into account might lead to biased estimates. In the context of continuous training durations, participants may leave the program early because they find employment or expect no further benefits. Participants could also stay longer than planned, e.g., to prolong benefit entitlement. In this paper, we analyze the causal impact of actual training duration on the subsequent employment probability, taking potential endogeneity due to reverse causality into account.

Our analysis is based on German administrative data containing both actual and planned training durations. This allows us to use the planned duration as an instrumental variable for the actual duration and to estimate local average treatment effects (LATE) for the impact of training duration on employment outcomes.

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Table 1
Summary statistics.

	Full sample	Early exits	Late exits	Planned exits
Male	0.51	0.58	0.54	0.48
Age	37.49	36.14	37.88	37.81
<i>Disability</i>				
Low degree	0.06	0.08	0.03	0.06
Medium degree	0.00	0.00	0.00	0.00
High degree	0.00	0.00	0.00	0.01
<i>Citizenship</i>				
Foreigner EU	0.02	0.02	0.01	0.01
Foreigner non-EU	0.08	0.09	0.11	0.08
<i>Educational attainment</i>				
No graduation	0.09	0.13	0.07	0.09
First stage of secondary level	0.44	0.50	0.44	0.43
Second stage of secondary level	0.33	0.29	0.34	0.34
Advanced tech. college entrance qualification	0.04	0.03	0.05	0.04
General qualification for university entrance	0.09	0.06	0.10	0.10
<i>Vocational attainment</i>				
No vocational degree	0.31	0.41	0.28	0.29
In-plant training	0.56	0.50	0.58	0.57
Off-the-job training, voc. school, tech. school	0.07	0.06	0.07	0.07
University, advanced technical college	0.06	0.03	0.07	0.07
<i>Employment history</i>				
Previous unemployment duration in months	9.43	9.05	9.08	9.58
Duration of last employment in months	20.76	16.95	23.26	21.50
Log (wage) last employment	3.38	3.35	3.39	3.39
No last employment observed	0.11	0.10	0.12	0.11
<i>Share of days in employment before program entry</i>				
1st year	0.18	0.18	0.19	0.18
2nd year	0.36	0.36	0.38	0.36
3rd year	0.39	0.39	0.39	0.39
4th year	0.41	0.39	0.41	0.41
<i>Share of days in unemployment before program entry</i>				
1st year	0.66	0.66	0.64	0.66
2nd year	0.37	0.39	0.34	0.36
3rd year	0.31	0.33	0.31	0.30
4th year	0.27	0.29	0.27	0.26
<i>Regional characteristics</i>				
Local unemployment rate	0.11	0.10	0.12	0.11
Number of observations	5825	1138	489	4198

2. Institutional background and data

We use a sample of a rich administrative data set, the Integrated Employment Biographies (IEB). The data contain daily information on labor force status, in particular employment subject to social security contributions, receipt of transfer payments during periods of unemployment, and participation in active labor market programs. Covariates include age, education, disability, nationality and regional characteristics. We know both the initial length of the treatment participants were assigned to and the actual program duration. Access to training programs is based on the decision of the caseworker. In our data period (2000–2002) the caseworker specifies the type, the content and the duration of the training.

We consider classroom oriented training and more practically oriented programs with only a few theoretical parts. The median program duration is around 6 months. Participants in these programs either learn specific skills required for a certain vocation or receive qualifications of general vocational use (see Kluve et al., 2012, who use the same data).

Most participants in our sample stay in the program exactly as long as planned (72.1%). Early exits are more than twice as common as late exits (19.5% and 8.4%, respectively). Table 1 shows that the covariate distributions appear similar across these subgroups. However, if we estimate a multinomial probit model for leaving the program before, exactly at, or after the planned exit, observed factors do seem important for the selection into early exits. Early dropouts are negatively correlated with age, vocational attainment, previous unemployment duration and local unemployment rates. For late exits we observe that male

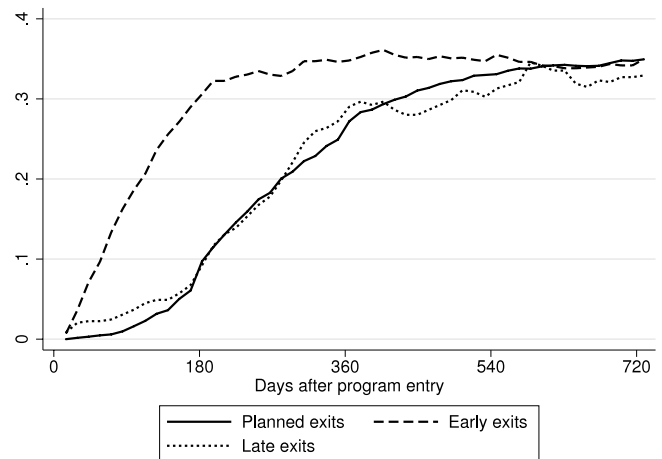


Fig. 1. Unadjusted employment probabilities after program entry.

participants are more likely to stay in the program longer than planned.

Our outcome variable is the employment probability two years after program entry. Fig. 1 shows that at this point in time about 35% of participants are employed, and early exits, planned exits and late exits exhibit almost the same employment probabilities.

However, Fig. 1 also illustrates that employment probabilities develop differently with time. For planned exits and late exits, after a period of about 180 days in which participants appear “locked-in” (van Ours, 2004), employment probabilities increase relatively

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