Supplementary Online Material

1. Mixed Marriages

Number of mixed marriages are very few in each country. Therefore, we did not included this information in the analysis. However, for interested readers, we looked at the number of fathers and mothers who were born in the survey country. Technically, these mothers and fathers can be themselves second-generation of Turkish immigrants. Although we did not have information about grandparents in the survey, we knew which languages mothers and fathers were raised in. Those mothers and fathers who are local-born but raised in Turkish are probably second-generation, and thus, they should not be considered as mixed marriage. As you see in the Table, the number of mixed marriages vary across countries but they are overall low.

Table 1. Supplementary Material. Estimated numbers of second-generation children from mixed marriages

	Sweden	**Belgium***	**Netherlands**	**Austria**	**Germany**
Local-born fathers	0	42	5	6	12
raised in Turkish (out of local-born)	0	24	0	3	6
Local born Mothers	0	58	15	24	50
raised in Turkish (out of local-born)	0	16	0	3	18
other-origin parent	0	7	0	3	
total estimated native parents and percentage*	0	67 (%12)	20 (%4)	27 (6%)	38(7%)

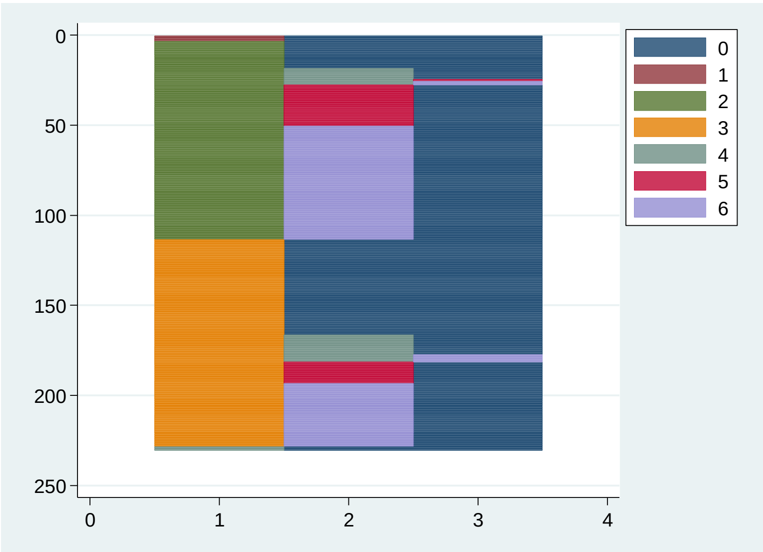
*Total numbers are calculated by summing the total numbers of parents who were local born but not raised in Turkish (subtracting those raised in Turkish from those local-born parents). In parentheses, percentages indicate the percent of mixed marriages within the second-generation samples in each country
*In Belgium, we only knew whether parents were not fluent in native language (instead of whether they were raised in Turkish)

2. Colored sequence index plots per origin group per country.

Here we present the same Figures from the paper but in colors in order to enhance readability for interested readers

Figure 1a. Supplementary Material. Sequence index plot per origin group in Sweden

Native Young Adults



Turkish second-generation young adults

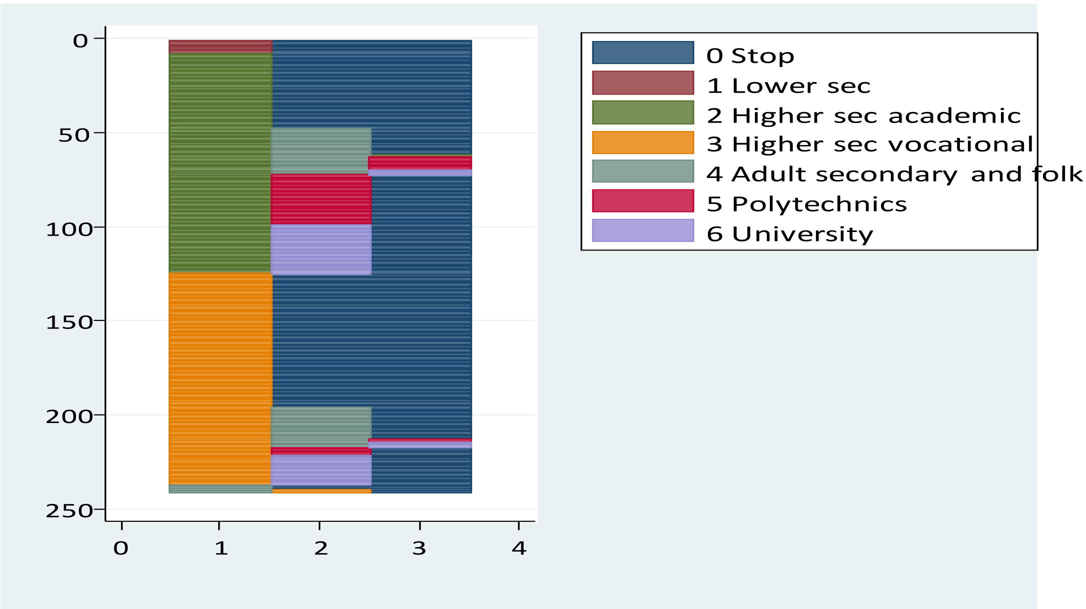
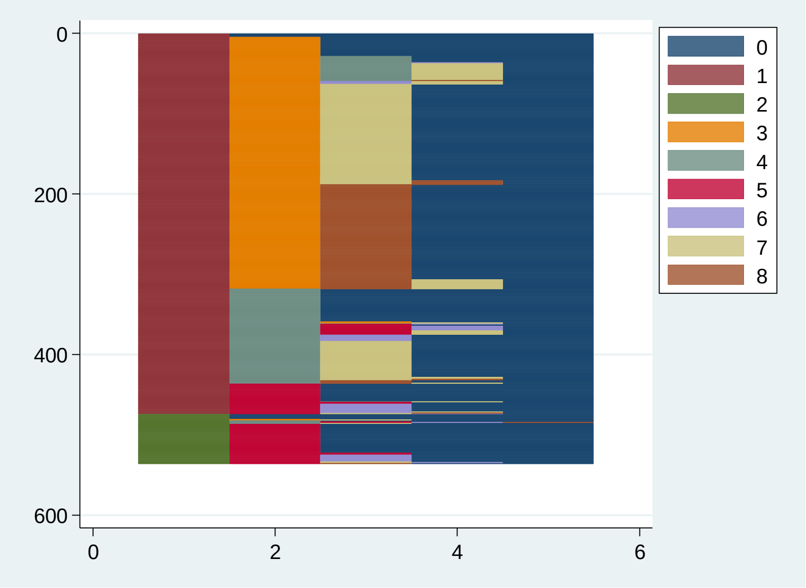


Figure 1b. Supplementary Material. Sequence index plot per origin group in Belgium

Native young adults



Turkish second-generation young adults

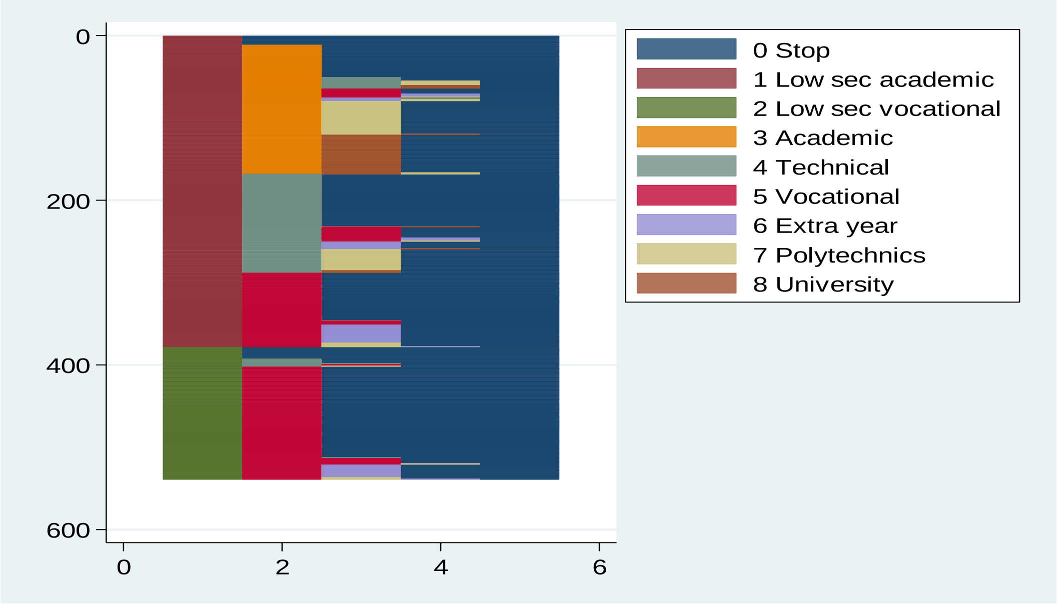
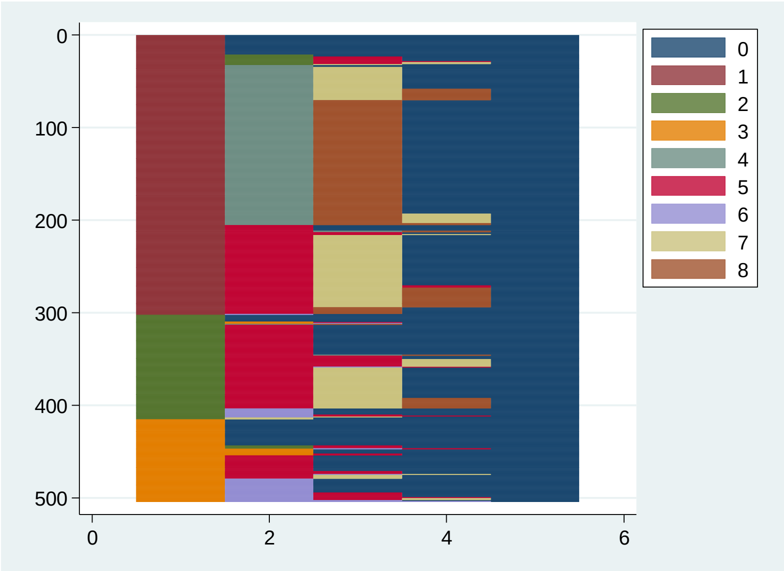


Figure 1c. Supplementary Material. Sequence index plot per origin group in the Netherlands

Native young adults



Turkish second-generation young adults

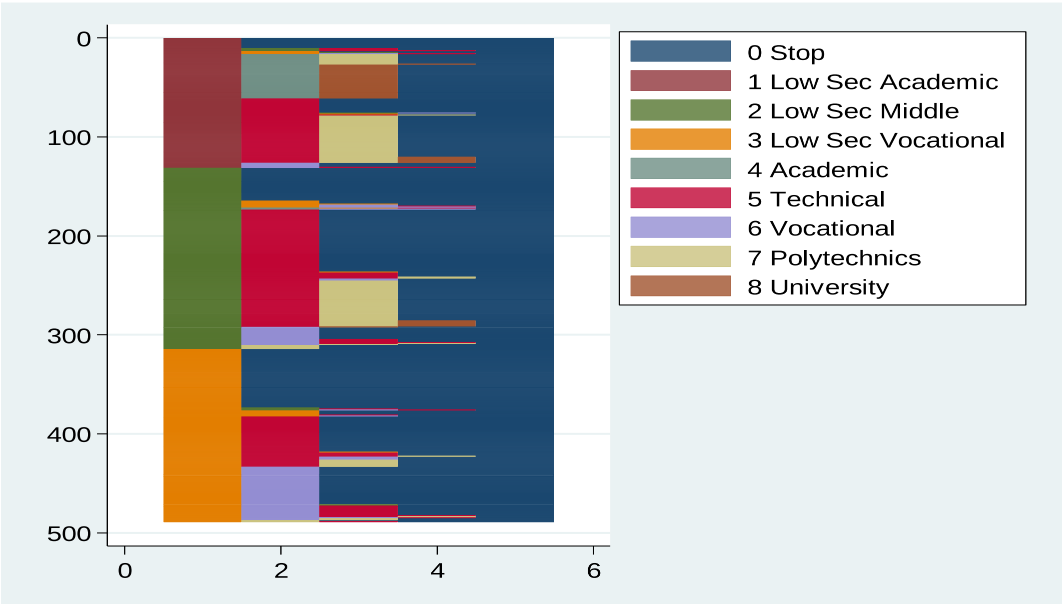
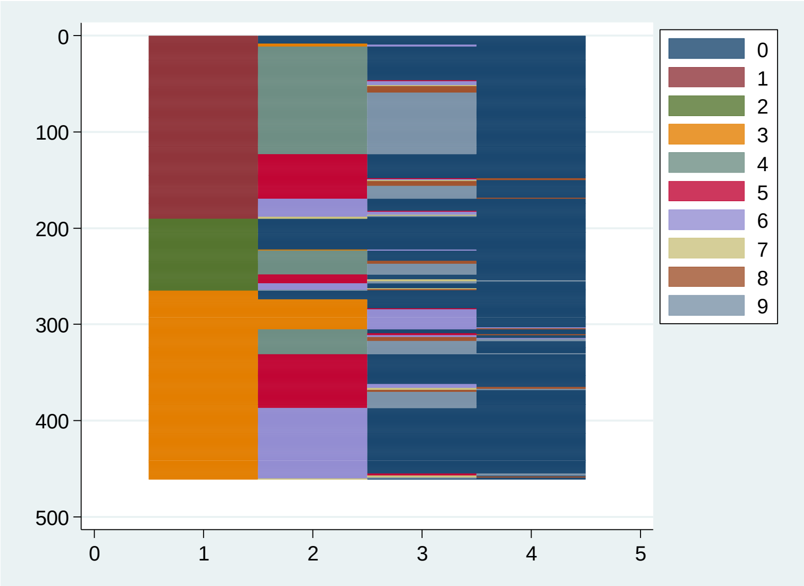


Figure 1d. Supplementary Material. Sequence index plot per origin group in Austria

Native young adults



Turkish second-generation young adults

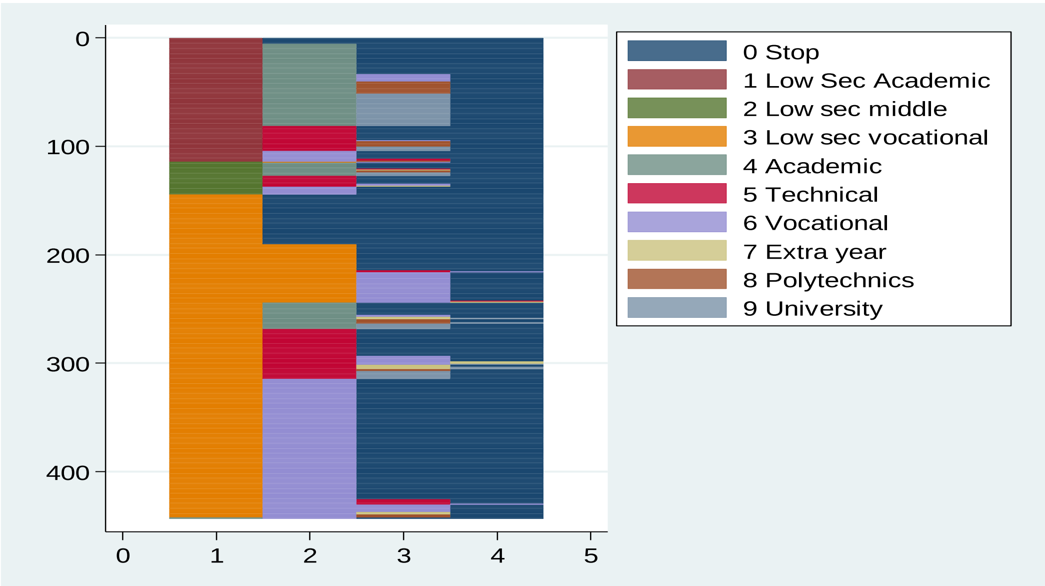
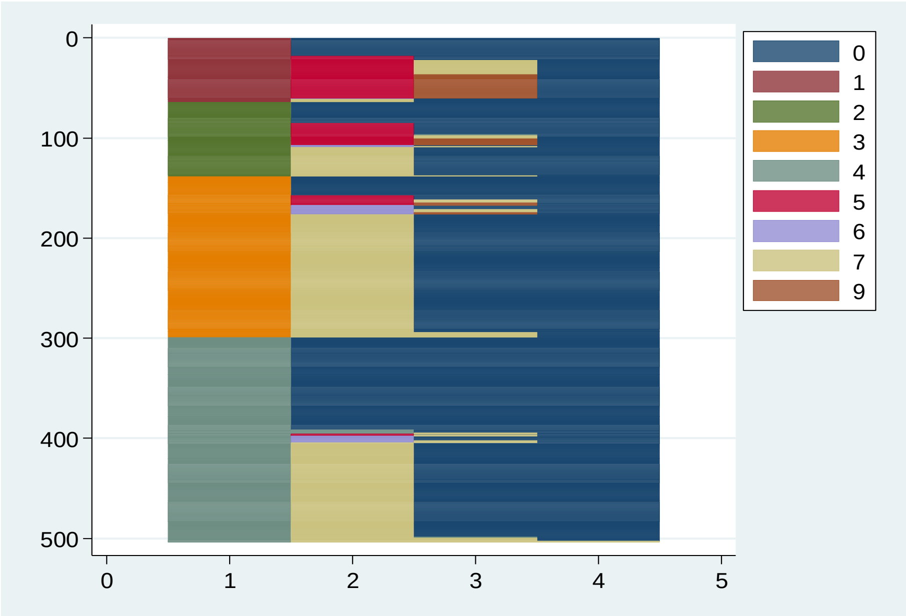
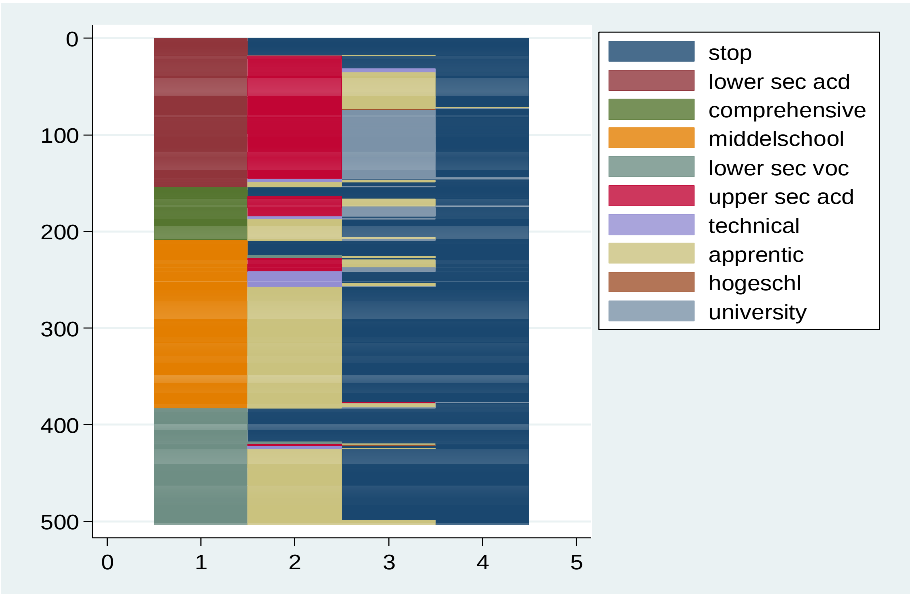


Figure 1e. Supplementary Material. Sequence index plot per origin group in Germany

Native young adults



Turkish second-generation young adults



3. Balancing in the Propensity Score Matching

The variables used in the propensity score matching need to be balanced. Table 1 shows the standardized % bias between the Turkish second-generation and the natives for the selected individual and family background variables before and after matching. The standardized % bias is the percentage difference of the sample means in the Turkish and native (full or matched) sub-samples as a percentage of the square root of the average of the sample variances in the Turkish and native groups (see `pstest` command in Stata for more detail). After matching, the bias should no longer be significant. Another indicator of balance is the variance ratio of continuous variables of treated over control (V(T)/ V(C)); if it equals 1, there is perfect balance. Variables of concern in this regard are indicated in the Table with superscript letters. As summary statistics, we also present pseudo R2 (from probit estimation of the conditional treatment probability on all the variables), mean and median bias as summary indicators of the distribution of the bias, Rubins' B (the absolute standardized difference of the means of the linear index of the propensity score in the treated and (matched) non-treated group) and Rubin's R (the ratio of treated to (matched) non-treated variances of the propensity score index). B less than 25 and R between 0.5 and 2 indicate sufficiently balanced samples. An asterisk is displayed next to B and R values that fall outside those limits.

Using all four indicators, Austria and Netherlands seem to be sufficiently balanced. For the other countries, there is a reduction in overall bias from unmatched to matched samples and some (but not all) indicators suggest balance. Looking at individual variables and Rubin’s B, Sweden, Belgium and Germany do not seem to be sufficiently balanced due to parental employment in all the countries, age in Sweden and age of going to school for the first time in Belgium and Germany. This should be taken into account while interpreting the results after matching.

Table 2. Supplementary Material. Balancing of Individual Background Characteristics Before and After Matching

	Before Matching						After Matching					
SWEDEN	Mean		t-test			V(T)/ V(C)	Mean		t-test			V(T)/ V(C)
Variable	Turkish	Native	%bias	t	p>t		Turkish	Native	%bias	t	p>t	
student	0.20	0.19	2.80	0.32	0.75	.	0.20	0.15	12.60	1.70	0.09	.
age	25.69	28.04	-48.10	-5.39	0.00	0.78[a]	25.69	28.72	-62.20	-7.78	0.00	0.77[a]
gender	0.49	0.49	0.40	0.05	0.96	.	0.49	0.50	-0.80	-0.10	0.92	.
age first school	3.15	3.68	-32.20	-3.23	0.00	0.94	3.15	3.40	-15.40	-1.47	0.14	1.03
change primary	0.62	0.71	-18.40	-2.05	0.04	.	0.62	0.66	-7.40	-0.93	0.35	.
sibling no diploma	0.21	0.13	21.30	2.38	0.02	.	0.21	0.15	14.40	1.80	0.07	.
sibling edu: high	0.22	0.28	-14.10	-1.58	0.12	.	0.22	0.24	-5.90	-0.76	0.45	.
parental education	0.43	0.88	-106.10	-11.87	0.00	.	0.43	0.78	-81.20	-9.70	0.00	.
parental employ	1.46	1.80	-60.70	-6.79	0.00	2.18[a]	1.46	1.75	-52.70	-6.67	0.00	1.68[a]
Summary stats	Pseudo R^2= .266. Mean bias = 33.8. Median bias= 21.3. Rubin's B= 134.5*. R = 2.03**						Pseudo R^2= .057. Mean bias = 28.1. Median bias= 14.4. Rubin's B= 58.2*. R = 2.21**					
BELGIUM	Turkish	Native	%bias	t	p>t		Turkish	Native	%bias	t	p>t	
student	0.22	0.26	-8.00	-1.37	0.17	.	0.22	0.27	-12.20	-1.96	0.05	.
age	24.83	25.83	-20.00	-3.43	0.00	0.93	24.83	24.49	6.90	1.13	0.26	0.97
gender	0.56	0.49	13.30	2.28	0.02	.	0.56	0.55	2.30	0.37	0.71	.
age first school	3.03	2.93	14.40	2.46	0.01	1.80[b]	3.03	3.02	0.80	0.13	0.90	1.65[b]
change primary	0.60	0.71	-22.70	-3.90	0.00	.	0.60	0.64	-8.20	-1.29	0.20	.
sibling no diploma	0.43	0.21	50.20	8.60	0.00	.	0.43	0.34	21.50	3.23	0.00	.
sibling edu: high	0.37	0.49	-25.00	-4.30	0.00	.	0.37	0.32	9.40	1.57	0.12	.
parental education	0.38	0.92	-137.70	-23.48	0.00	.	0.38	0.53	-38.90	-5.04	0.00	.
parental employ	1.12	1.62	-83.40	-14.29	0.00	1.46[b]	1.12	1.30	-29.60	-4.48	0.00	1.09
Summary statistics:	Pseudo R^2= .341. Mean bias = 41.6. Median bias= 22.7. Rubin's B= 162.5*. R = 2.01**						Pseudo R^2= .036. Mean bias = 14.4. Median bias= 9.4. Rubin's B= 45.6*. R = 1.53**					
NETHERLANDS	Turkish	Native	%bias	t	p>t		Turkish	Native	%bias	t	p>t	
student	0.26	0.25	2.80	0.44	0.66	.	0.26	0.26	0.90	0.13	0.90	.
age	24.60	27.52	-64.00	-10.07	0.00	0.85	24.60	24.84	-5.30	-0.78	0.44	0.88
gender	0.49	0.49	0.00	-0.01	0.99	.	0.49	0.50	-1.90	-0.28	0.78	.
age first school	3.95	3.62	46.90	7.39	0.00	0.79[c]	3.95	3.84	15.60	2.37	0.02	0.91

Table 2. Supplementary Material. Balancing of Individual Background Characteristics Before and After Matching

change primary	0.71	0.71	-1.20	-0.18	0.86	.	0.71	0.73	-4.10	-0.60	0.55	.
sibling no diploma	0.33	0.14	45.90	7.24	0.00	.	0.33	0.27	12.40	1.61	0.11	.
sibling edu: high	0.37	0.42	-9.30	-1.47	0.14	.	0.37	0.34	6.90	1.03	0.30	.
parental education	0.23	0.73	-115.90	-18.26	0.00	.	0.23	0.31	-16.70	-2.40	0.02	.
parental employ	0.93	1.47	-85.70	-13.52	0.00	1.26[c]	0.93	1.14	-33.70	-4.80	0.00	1.16
Summary statistics:	Pseudo R^2= .369. Mean bias = 41.3. Median bias= 45.9. Rubin's B= 170.6*. R = 1.16						Pseudo R^2= .032. Mean bias = 10.8. Median bias= 6.9. Rubin's B= 42.8*. R = 1.54					
AUSTRIA	Turkish	Native	%bias	t	p>t		Turkish	Native	%bias	t	p>t	
student	0.27	0.30	-7.30	-1.12	0.26	.	0.27	0.23	9.70	1.46	0.14	.
age	23.92	25.57	-33.50	-5.14	0.00	0.86	23.92	24.58	-13.50	-1.95	0.05	0.87
gender	0.46	0.47	-1.70	-0.26	0.80	.	0.46	0.53	-13.70	-1.97	0.05	.
age first school	4.90	4.24	47.90	7.35	0.00	1.01	4.90	4.66	17.70	2.55	0.01	1.00
change primary	0.86	0.92	-17.00	-2.61	0.01	.	0.86	0.86	2.20	0.28	0.78	.
sibling no diploma	0.20	0.05	45.70	7.07	0.00	.	0.20	0.13	22.60	2.84	0.01	.
sibling edu: high	0.15	0.15	-1.30	-0.20	0.85	.	0.15	0.14	1.60	0.23	0.82	.
parental education	0.40	0.91	-127.20	-19.64	0.00	.	0.40	0.47	-18.10	-2.13	0.03	.
parental employ	1.39	1.56	-30.10	-4.63	0.00	1.12	1.39	1.40	-1.20	-0.16	0.87	0.94
Summary statistics:	Pseudo R^2= .280. Mean bias = 34.6. Median bias= 30.1. Rubin's B= 142.8*. R = 2.30**						Pseudo R^2= .027. Mean bias = 11.1. Median bias= 13.5. Rubin's B= 39.1*. R = 1.41					
GERMANY	Turkish	Native	%bias	t	p>t		Turkish	Native	%bias	t	p>t	
student	0.05	0.04	3.90	0.60	0.55	.	0.05	0.04	2.50	0.38	0.70	.
age	26.09	27.65	-31.30	-4.85	0.00	1.05	26.09	25.60	9.70	1.48	0.14	1.01
gender	0.48	0.47	0.70	0.10	0.92	.	0.48	0.50	-4.20	-0.64	0.52	.
age first school	4.27	3.83	36.10	5.59	0.00	1.72[e]	4.27	3.99	23.10	3.52	0.00	1.58[e]
change primary	0.94	0.96	-13.20	-2.04	0.04	.	0.94	0.97	-15.40	-2.44	0.02	.
sibling no diploma	0.17	0.06	35.60	5.49	0.00	.	0.17	0.15	6.10	0.81	0.42	.
sibling edu: high	0.07	0.17	-28.20	-4.37	0.00	.	0.07	0.07	1.40	0.26	0.80	.
parental education	0.16	0.80	-169.60	-26.23	0.00	.	0.16	0.18	-4.60	-0.74	0.46	.
parental employ	1.04	1.34	-51.70	-7.99	0.00	0.81[e]	1.04	1.02	2.40	0.32	0.75	0.53[e]
Summary statistics:	Pseudo R^2= .373. Mean bias = 41.1. Median bias= 31.3. Rubin's B= 181.7*. R = 0.80						Pseudo R^2= .014. Mean bias = 7.7. Median bias= 4.6. Rubin's B= 27.6*. R = 1.68					

*if B> 25%; ** R outside [0.5; 2]; If variance ratio V(T)/V(C) outside a [0.78; 1.28] b [0.85; 1.17] c [0.84; 1.19] d [0.83; 1.20] e [0.84; 1.20]

4. The results from the weighted multinomial logistic regression of trajectories on ethnic origin (using matching weights).

Here we present the multinomial logistic regression results with trajectories as the outcome and ethnic origin as the predictor using matching weights. These tables show which ethnic gaps are still significant in each country after propensity score weighting including individual and family background. In Table 4, we also present the confidence intervals for the probabilities of being in different trajectories for the unmatched and matched samples. For instance, for Sweden for the short trajectory, Table3a shows a significant ethnic gap even after the matching. Similarly, Table 4 shows that there was a significant ethnic gap in the short trajectory in the unmatched sample, and this remained significant after the matching.

Table 3a. Multinomial logistic regression of trajectories on ethnic origin in Sweden

	short	voc+adult	vocational	academic+adult	academic†
	b/se	b/se	b/se	b/se	b/se
Turkish	2.564**	1.365	0.595	6.842**	1
	-0.903	-0.816	-0.304	-4.824	(.)
Constant	1.051	0.200***	0.592	0.081***	1
	-0.265	-0.094	-0.181	-0.05	(.)
ll	-1083.94				
chi2	17.802				
N	444				

Note. * $p < .05$, ** $p < .01$, *** $p < .001$ †Base outcome (Reference category)

Table 3b. Multinomial logistic regression of trajectories on ethnic origin in Belgium

	short	academic†	bumpy road	vocational	voc long
	b/se	b/se	b/se	b/se	b/se
Turkish	2.092**	1	3.386**	3.288***	3.089*
	-0.493	(.)	-1.329	-0.936	-1.574
Constant	0.509**	1	0.096***	0.261***	0.048***
	-0.105	(.)	-0.034	-0.067	-0.022
ll	-1253.85				
chi2	27.969				
N	1059				

Note. * $p < .05$, ** $p < .01$, *** $p < .001$ †Base outcome (Reference category)

Table 3c. Multinomial logistic regression of trajectories on ethnic origin in Netherlands

	short	vocational	middle	technical HAVO	academic†
	b/se	b/se	b/se	b/se	b/se
Turkish	2.505**	2.667*	2.004	1.355	1
	-0.74	-1.241	-0.77	-0.475	(.)
Constant	2.116***	0.292**	0.629	0.797	1
	-0.48	-0.116	-0.199	-0.215	(.)
ll	-1137.27				
chi2	12.299				
N	970				

Note. * p < .05, ** p < .01, *** p < .001 †Base outcome (Reference category)

Table 3d. Multinomial logistic regression of trajectories on ethnic origin in Austria

	short	academic†	middle	vocational	vocational upward
	b/se	b/se	b/se	b/se	b/se
Turkish	0.911	1	0.676	1.129	0.787
	-0.223	(.)	-0.214	-0.403	-0.402
Constant	4.659***	1	0.728	0.958	0.313**
	-0.927	(.)	-0.163	-0.296	-0.132
ll	-942.118				
chi2	2.315				
N	892				

Note. * p < .05, ** p < .01, *** p < .001 †Base outcome (Reference category)

Table 3e. Multinomial logistic regression of trajectories on ethnic origin in Germany

	academic†	comprehensive	vocational	middle
	b/se	b/se	b/se	b/se
Turkish	1	2.908*	1.563	1.887
	(.)	-1.261	-0.514	-0.645
Constant	1	0.549	2.763***	1.714*
	(.)	-0.201	-0.721	-0.47
ll	-1184.96			
chi2	6.704			
N	943			
* p<0.05,	** p<0.01, *** p<0.001			

Note. * p < .05, ** p < .01, *** p < .001 †Base outcome (Reference category)

Table 4. Supplementary Material. Confidence Intervals for the probabilities

	Unweighted				Family weighted (Model 2)			
SWEDEN	Turkish		Native		Turkish		Native	
N	241		230		214		230	
short	51%	[.44, .57]	32%	[.26, .38]	55%	[.46, .65]	36%	[.26, .46]
voc+adult	9%	[.05, .12]	7%	[.03, .10]	6%	[.02, .09]	7%	[.01, .12]
voc	9%	[.05, .12]	20%	[.15, .26]	7%	[.02, .12]	20%	[.12, .29]
academic+adult	10%	[.07, .14]	4%	[.01, .06]	11%	[.05, .18]	3%	[.00, .06]
academic	22%	[.16, .27]	37%	[.31, .44]	21%	[.13, 28]	34%	[.24, .44]
BELGIUM								
N	539		536		523		536	
short	32%	[.28, .36]	17%	[.14, .21]	31%	[.27, .35]	27%	[.19, .34]
academic	29%	[.25, .33]	66%	[.62, .70]	29%	[.26, .33]	52%	[.44, .60]
bumpy road	9%	[.07, .12]	5%	[.03, .07]	10%	[.07, .12]	5%	[.02, .08]
vocational	25%	[.22, .29]	9%	[.07, .12]	25%	[.22, .29]	14%	[.08, .19]
voc long	4%	[.03, .06]	2%	[.01, .04]	4%	[.03, .06]	3%	[.003, .05]
NETHERLANDS								
N	489		504		466		504	
short	58%	[.54, .62]	29%	[.25, .33]	56%	[.52, .61]	44%	[.35, .53]
vocational	8%	[.06, .11]	5%	[.03, .07]	8%	[.06, .11]	6%	[.02, .10]
middle technical	13%	[.10, .16]	13%	[.10, .15]	13%	[.10, .17]	13%	[.07, .19]
HAVO	11%	[.09, .14]	19%	[.16, .23]	11%	[.09, .14]	16%	[.10,.23]
academic	9%	[.07, .12]	34%	[.30, .39]	11%	[.07, .14]	21%	[.14,.27]
AUSTRIA								
N	443		461		431		461	
short	61%	[.56,.66]	45%	[.41, .49]	60%	[.56,.65]	61%	[.53, .69]
academic	14%	[.11, .17]	23%	[.19, .27]	14%	[.11, .18]	13%	[.09, .17]
middle	7%	[.05, .09]	16%	[.13, .20]	7%	[.05, .09]	10%	[.06, .13]
vocational	15%	[.12, .18]	11%	[.08, .14]	15%	[.12, .19]	13%	[.06, .19]
voc upward	3%	[.02, .05]	5%	[.03, .07]	3%	[.02, .05]	4%	[.01, .07]
GERMANY								
N	481		476		467		476	
academic	9%	[.07, .12]	28%	[.24, .32]	10%	[.07, .13]	17%	[.10, .23]
comprehensive	15%	[.12, .18]	11%	[.08, .14]	16%	[.12,.20]	9%	[.04, .14]
vocational	43%	[.39, .48]	26%	[.22, .30]	43%	[.38, .47)	46%	[.37, .55]
middle	32%	[.28, .37]	36%	[.31, .40]	32%	[.28, .36]	28%	[.20, .37]