

The youth labour market: from education to work before and after the global financial crisis

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Online Appendix

This appendix contains additional figures referred to in the text as well as the multivariate regression model results.

Figure A1: Hierarchical cluster analysis for pre-GFC cohort

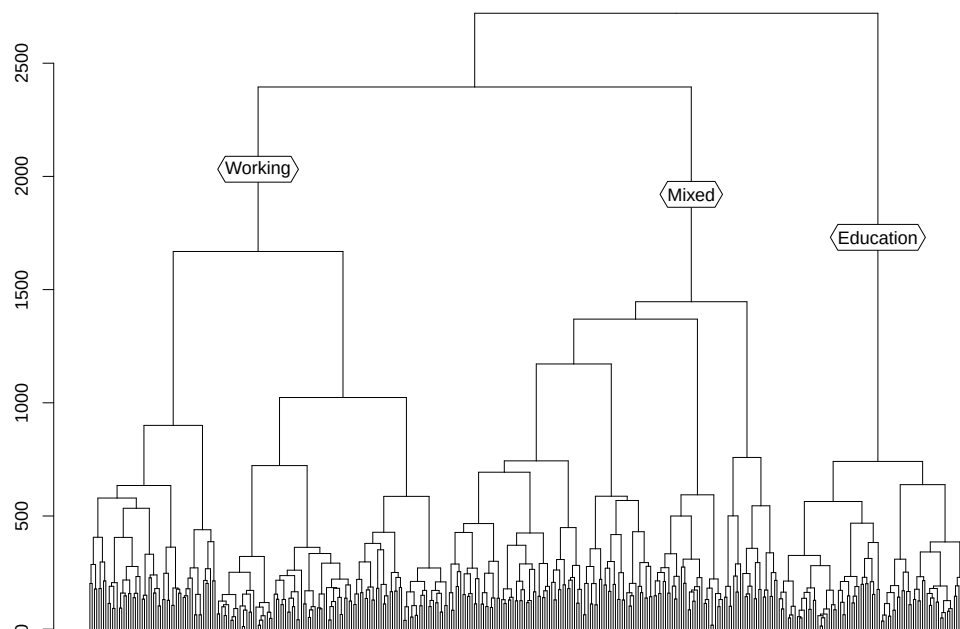


Figure A2: Hierarchical cluster analysis for post-GFC cohort

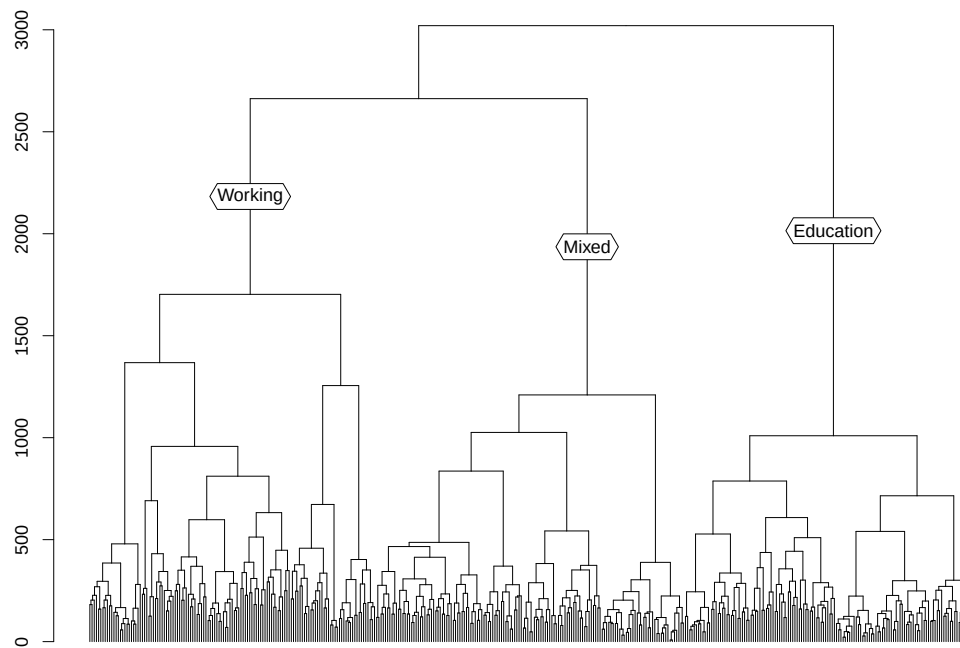


Figure A3: State distribution for pre-GFC cohort

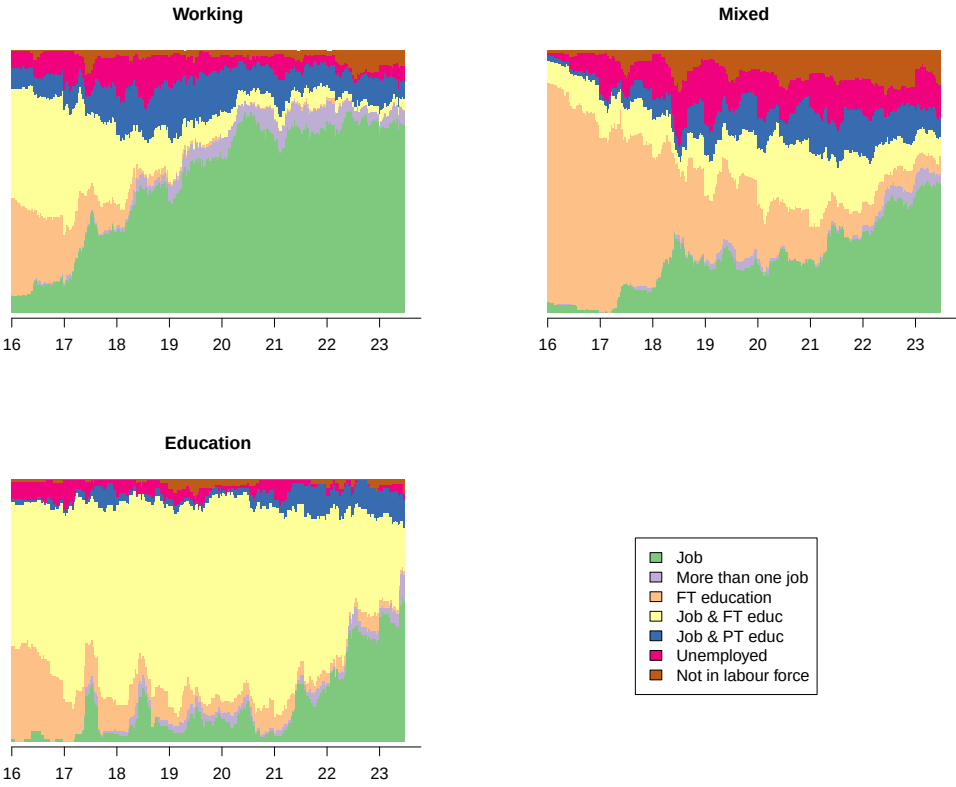


Figure A4: State distribution for post-GFC cohort

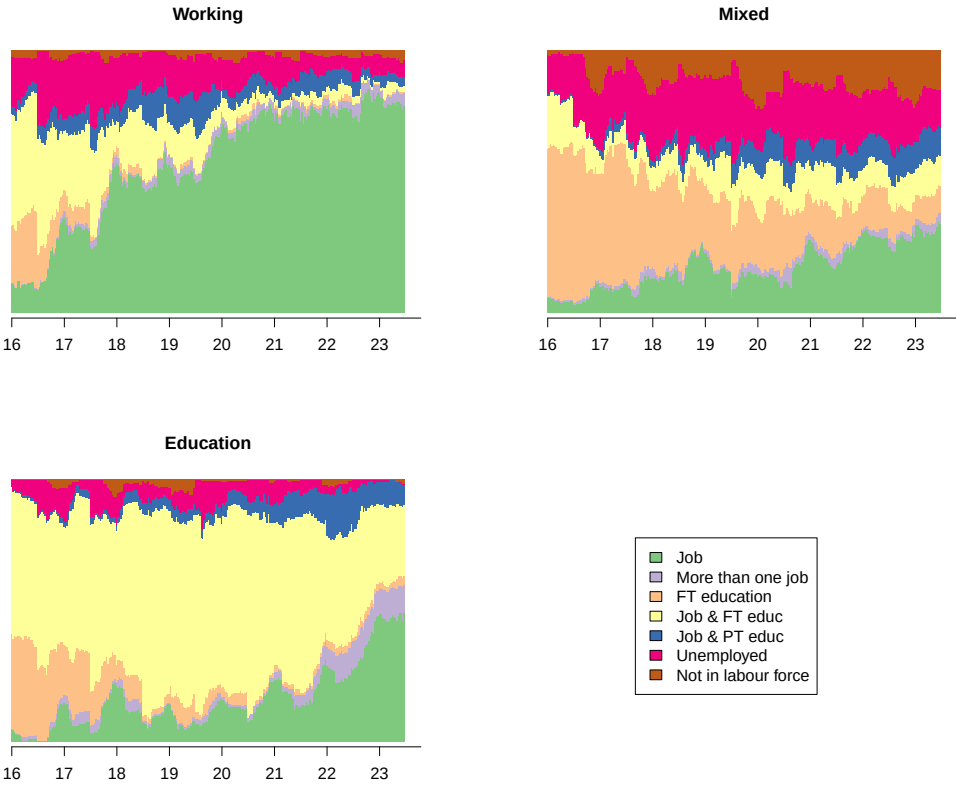


Table A1: Multinomial logistic regression: cluster categories

Variable	Working category			Mixed category		
	Coef	SE	P	Coef	SE	P
Post-GFC	-0.682	0.260	0.01	-0.352	0.244	0.15
Female	-0.391	0.246	0.11	-0.299	0.228	0.19
Child of sole parent	0.359	0.318	0.26	0.150	0.293	0.61
Migrant	-0.196	0.485	0.69	0.077	0.397	0.85
FT student	-1.818	0.359	0.00	-0.520	0.270	0.05
HIGHEST EDUCATIONAL LEVEL						
Postgrad	-3.381	1.199	0.01	-3.103	1.192	0.01
Tertiary	-5.294	1.091	0.00	-3.254	1.064	0.00
Vocational	-2.134	1.063	0.04	-2.074	1.069	0.05
Year 12	-2.493	1.056	0.02	-2.024	1.060	0.06
AGE LEFT SCHOOL						
Left at 16 or before	2.509	0.692	0.00	1.103	0.566	0.05
Left at 17 or 18	1.917	0.504	0.00	0.321	0.352	0.36
FATHER'S OCCUPATION						
Managerial/professional	-0.360	0.464	0.44	-0.578	0.417	0.17
White/pink collar	0.273	0.524	0.60	0.099	0.486	0.84
Blue collar	0.364	0.478	0.45	-0.073	0.444	0.87
MOTHER'S OCCUPATION						
Managerial/professional	-0.415	0.410	0.31	-0.376	0.367	0.31
White/pink collar	0.315	0.397	0.43	-0.721	0.375	0.05
Blue collar	0.113	0.502	0.82	-0.404	0.464	0.38
GEOGRAPHICAL LOCATION						
Melbourne	0.096	0.402	0.81	-0.119	0.365	0.74
Other cities	-0.087	0.397	0.83	-0.126	0.364	0.73
Outside cities	0.223	0.370	0.55	0.125	0.341	0.71
SEIFA DECILE						
Lowest decile	1.070	0.671	0.11	1.329	0.619	0.03
2nd decile	1.263	0.608	0.04	1.074	0.560	0.06
3rd decile	1.282	0.594	0.03	0.845	0.543	0.12
4th decile	0.770	0.633	0.22	0.648	0.567	0.25
6th decile	1.154	0.601	0.06	0.898	0.543	0.10
7th decile	0.144	0.539	0.79	-0.338	0.499	0.50
8th decile	0.818	0.547	0.14	-0.226	0.520	0.67
9th decile	0.060	0.529	0.91	-0.250	0.462	0.59
Highest decile	0.605	0.577	0.29	-0.031	0.501	0.95
Intercept	1.383	1.321	0.29	3.174	1.240	0.01

Notes: Coef = coefficient; SE = standard error; P = P-value (95% level). SEIFA = ABS socio-economic indicators for areas.

Population: all observations. Omitted dependent variable: Education cluster category. Omitted independent variables: Before GFC; Male; Not child of sole parent; Not a migrant; Year 11; Left after 18; Not employed; Not employed; Sydney; 5th decile.

No. obs = 688; Log likelihood = -587.811; Pseudo R-squared = 0.216.

Table A2: Logistic regression: full-time employment at age 23

Variable	Coefficient	SE	P-value
Post-GFC	-0.853	0.228	0.00
Area unemployment rate	-0.264	0.110	0.02
Migrant	0.167	0.365	0.65
Female	-0.923	0.212	0.00
Child of sole parent	0.033	0.254	0.90
FT student	-2.841	0.332	0.00
Has parental responsibilities	-0.064	0.615	0.92
Female by Has parental responsibilities	-3.458	0.911	0.00
HIGHEST LEVEL EDUCATION			
Postgrad	1.430	0.679	0.04
Tertiary	1.282	0.420	0.00
Vocational	0.858	0.360	0.02
Year 12	0.327	0.355	0.36
AGE LEFT SCHOOL			
Left at 16 or before	-0.358	0.463	0.44
Left at 17 or 18	0.312	0.368	0.40
FATHER'S OCCUPATION			
Managerial/professional	0.413	0.350	0.24
White/pink collar	0.407	0.387	0.29
Blue collar	0.509	0.344	0.14
MOTHERS'S OCCUPATION			
Managerial/professional	0.157	0.321	0.62
White/pink collar	0.376	0.306	0.22
Blue collar	0.697	0.385	0.07
SEIFA DECILE			
Lowest decile	-0.177	0.461	0.70
2nd decile	0.328	0.463	0.48
3rd decile	0.283	0.464	0.54
4th decile	1.236	0.535	0.02
6th decile	0.053	0.466	0.91
7th decile	0.143	0.442	0.75
8th decile	0.429	0.480	0.37
9th decile	0.243	0.435	0.58
Highest decile	-0.125	0.477	0.79
CLUSTER CATEGORY			
Mixed	-1.159	0.246	0.00
Education	-0.386	0.302	0.20
Intercept	1.905	0.880	0.03

Notes: SE = standard error; FT = full-time; PT = part-time. SEIFA = ABS socio-economic indicators for areas.

Population: All observations. Dependent variable is being in full-time employment at age 23. Omitted independent variables: Not a migrant; Male; Not child of sole parent; Not FT student; No parental responsibilities; Male with no parental responsibilities; Year 11; Left after 18; Not employed; Not employed; 5th decile; Working category.

No. obs = 688; Log likelihood = -323.052; Pseudo R-squared = 0.318.

Table A3: Multilevel logistic regression: underemployment

Variable	Coefficient	SE	P-value
Post-GFC	0.183	0.162	0.26
Area unemployment rate	-0.030	0.064	0.64
Job tenure	-0.038	0.043	0.38
Age	-0.051	0.035	0.15
Female	-0.341	0.178	0.06
Migrant	-0.082	0.320	0.80
AGE LEFT SCHOOL			
Left at 16 or before	-0.549	0.380	0.15
Left at 17 or 18	-0.250	0.341	0.47
JOB STATUS			
Casual PT	2.731	0.202	0.00
Casual FT	0.537	0.208	0.01
Fixed-term	0.090	0.236	0.70
Permanent PT	2.481	0.240	0.00
OCCUPATION			
Professionals	-0.055	0.441	0.90
Technicians / Trades	0.935	0.385	0.01
Community / Personal Serv	0.958	0.388	0.01
Clerical / Administrative	0.072	0.399	0.86
Sales Workers	0.836	0.373	0.03
Machine Operators / Drivers	0.711	0.459	0.12
Labourers	0.866	0.388	0.03
INDUSTRY			
Manufacturing	0.763	0.435	0.08
Utilities / construction	0.611	0.431	0.16
Retail	0.788	0.425	0.06
Wholesale / Transport	0.952	0.455	0.04
Accommodation / Food	0.776	0.419	0.06
Inform / Finance / Real estate	0.878	0.510	0.09
Professional etc Services	0.343	0.515	0.51
Administrative Services	0.403	0.528	0.45
Public Administration	1.131	0.502	0.02
Education / Training	0.300	0.539	0.58
Health Care / Social Assistance	0.716	0.467	0.12
Arts etc / Other Services	0.476	0.450	0.29
CLUSTER CATEGORY			
Working	0.133	0.217	0.54
Mixed	0.024	0.235	0.92
Intercept	-1.887	1.051	0.07
SD of panel level variance	1.094	0.112	
Rho	0.267	0.040	

Notes: SE = standard error; SD = standard deviation; FT = full-time; PT = part-time.

Population: Employees who were not full-time students. Rho is proportion of total variance attributed to panel (ie. subject) variance. Note that a shortened version of ANZSIC is used for industry. Omitted independent variables: Before GFC; Male; Not a migrant; Left after 18; Permanent FT; Managers; Agriculture / mining; Education category.

No. obs = 2301 in 680 groups (ie. subjects); Log likelihood = -1094.017; LR test that rho=0 = 63 and P-value for LR test = 0.000 (test comparing the panel data with pooled data).

Table A4: Multilevel multinomial logistic regression: job status

Variable	Casual PT		Casual FT		Fixed-term		Perm PT	
	Coef	P	Coef	P	Coef	P	Coef	P
Post-GFC	0.220	0.299	0.038	0.839	0.398	0.026	0.478	0.029
Age	-0.322	0.000	-0.111	0.004	-0.157	0.000	-0.057	0.242
Area unemployment rate	0.184	0.015	0.094	0.194	0.122	0.090	0.006	0.945
Female	0.866	0.000	0.067	0.745	0.228	0.232	0.727	0.002
Migrant	0.227	0.580	0.130	0.723	-0.802	0.061	0.443	0.253
AGE LEFT SCHOOL								
Left at 16 or before	-0.512	0.298	-0.129	0.769	-0.979	0.012	-0.015	0.976
Left at 17 or 18	-0.133	0.762	0.034	0.932	-0.443	0.192	0.073	0.872
OCCUPATION								
Professionals	2.321	0.001	0.552	0.302	0.825	0.037	0.267	0.611
Technicians / Trades	2.461	0.000	1.122	0.016	1.032	0.006	0.285	0.585
Community / Personal Serv	4.703	0.000	2.857	0.000	1.012	0.014	1.495	0.002
Clerical / Admininstrative	2.457	0.000	1.191	0.012	0.474	0.215	0.556	0.248
Sales Workers	4.270	0.000	2.239	0.000	0.829	0.036	2.497	0.000
Machine Operators / Drivers	4.183	0.000	2.708	0.000	0.331	0.537	1.437	0.026
Labourers	5.319	0.000	3.003	0.000	0.176	0.706	2.295	0.000
INDUSTRY								
Manufacturing	0.074	0.881	-0.616	0.101	-0.298	0.504	-0.075	0.913
Utilities / construction	-0.261	0.599	-0.769	0.036	-0.942	0.033	-0.838	0.260
Retail	1.414	0.003	-0.973	0.015	-0.477	0.304	0.604	0.348
Wholesale / Transport	0.693	0.176	-0.780	0.058	-0.789	0.138	0.389	0.573
Accommodation / Food	2.461	0.000	0.438	0.258	-0.472	0.335	1.847	0.004
Inform / Finance / Real estate	0.557	0.323	-1.788	0.001	-0.523	0.293	-0.227	0.762
Professional etc Services	0.652	0.256	-0.912	0.063	-0.604	0.209	0.543	0.449
Administrative Services	0.902	0.104	-0.216	0.629	-0.148	0.778	0.309	0.682
Public Administration	-1.126	0.113	-1.455	0.004	0.307	0.518	-0.670	0.440
Education / Training	1.355	0.021	-0.608	0.265	0.787	0.120	1.681	0.022
Health Care / Social Assistance	0.587	0.272	-0.895	0.047	-0.237	0.624	1.212	0.073
Arts etc / Other Services	0.848	0.088	-1.050	0.013	-0.419	0.358	0.317	0.646
CLUSTER CATEGORY								
Working	-1.182	0.000	-0.591	0.024	-0.413	0.075	-0.578	0.040
Mixed	0.096	0.745	0.082	0.770	0.299	0.225	0.142	0.643
Random intercept	1.000	1.000	0.694	0.000	0.505	0.000	0.674	0.000
Model constant	0.756	0.556	0.005	0.996	1.533	0.185	-2.616	0.068

Notes: FT = full-time; PT = part-time; Coef = Coefficient; P = P-value (95% level).

Population: Employees who were not full-time students. Model fitted using generalized structural equation command.

Omitted dependent variable is permanent FT. Note that a shortened version of ANZSIC is used for industry. Omitted independent variables: Before GFC; Male; Not a migrant; Left after 18; Managers; Agriculture / mining; Sydney; Education category.

No. obs = 2836 in 710 groups (ie. subjects); Log likelihood = -3258.569; Subject level variance = 3.367. Note that random intercept is constrained to 1 for the first outcome.

Table A5: Logistic regression: cohort membership

Variable	Coefficient	SE	P-value
Area unemployment rate	1.069	0.116	0.00
Female	-0.089	0.183	0.63
Migrant	-0.616	0.342	0.07
Child of sole parent	0.574	0.237	0.01
HIGHEST LEVEL EDUCATION			
Postgrad	1.712	0.670	0.01
Tertiary	0.605	0.377	0.11
Vocational	0.357	0.341	0.29
Year 12	0.243	0.341	0.48
AGE LEFT SCHOOL			
Left at 16 or before	-0.271	0.429	0.53
Left at 17 or 18	-0.232	0.339	0.49
FATHER'S OCCUPATION			
Managerial/professional	1.170	0.337	0.00
White/pink collar	1.301	0.377	0.00
Blue collar	1.660	0.330	0.00
MOTHERS'S OCCUPATION			
Managerial/professional	0.627	0.295	0.03
White/pink collar	0.881	0.279	0.00
Blue collar	0.425	0.348	0.22
SEIFA DECILE			
Lowest decile	-0.056	0.444	0.90
2nd decile	-0.045	0.431	0.92
3rd decile	0.050	0.430	0.91
4th decile	0.727	0.476	0.13
6th decile	0.357	0.444	0.42
7th decile	-0.149	0.420	0.72
8th decile	0.179	0.431	0.68
9th decile	-0.059	0.409	0.89
Highest decile	0.590	0.435	0.17
Intercept	-7.533	0.923	0.00

Notes: SE = standard error; FT = full-time; PT = part-time. SEIFA = ABS socio-economic indicators for areas.

Population: All observations. Dependent variable is membership of the post-GFC cohort. Omitted independent variables: Male; Not a migrant; Not child of sole parent; Year 11; Left after 18; Not employed; Not employed; 5th decile.

No. obs = 688; Log likelihood = -373.876; Pseudo R-squared = 0.215.