Appendix

The downward spiral of youth unemployment: An approach considering social networks and family background

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Appendix 1: Questionnaire

Name generator

Please write down a list of 20 people that you know by name and vice versa with whom you have had contact at least in the last two years by any means of communication, and whom you could be able to contact again if necessary or advisable. Do not include people younger than 18 years old. It can by anyone. Try to write down first the people who are close and very important to you. Second, write down the people who have already been mentioned during the interview because they have helped you in your career, as well as other people not mentioned who have helped or provided support with information and help to get a job (whether they are close or distant from you). Finally, write down any other people you tend to see often, even if they are not very close or helpful. You can also include other people. It might be helpful for you to think of different groups of people in different places (family, friends, colleagues, neighbours, etc.). Write down the first name or full name so that only you can recognize these people but you will be able to recognize them later on. For instance: "Mig Cervan" for "Miguel de Cervantes".

This name generator gathered a fixed-number list of 20 contacts, including three types of contacts: (i) all important intimate contacts; (ii) all contacts who were helpful or supportive in any way in the job seeking process; (iii) any other contacts who were not so close as the first ones or as useful or supportive as the second ones, but who were met often. This category was included in order to reach the fixed number of 20 reported contacts in total, which guaranteed that the number of contacts mentioned in the two previous categories was not biased by fatigue or desirability effects. However, only those who helped the interviewee look for jobs were included in the analysis (even if their assistance did not lead to actually finding a job). The fact that just before this question

the questionnaire had explored all the employment events of the trajectory and the strategies applied to find them helped the people to recall who had helped in the job seeking process.

In order to ensure the quality of the responses on the characteristics of these contacts, the list included only names of people with whom the interviewee had been in touch in the last two years. As a result, contacts who had helped the interviewee to find a job in the past but with whom he or she had not had contact in the last two years were excluded from the list. In Tables A1 and A5, when the main focus is on the past events and not on the present network, they are referred to as "old unknown contacts".

Appendix 2: Additional tables

Table A1: Summary statistics for study variables:

Interviewee characteristics (%) (N=250)		
Education	Primary education	25.2 %
	Secondary education	26.8 %
	Higher education	48.0 %
Age	20-24	22.8 %
	25-29	34.0 %
	30-34	43.2 %
Place of residence	Barcelona	49.2 %
	Other municipalities of the Metropolitan Area of Barcelona	50.8 %
Origin	Born in Spain	87.2 %
	Born abroad	12.8 %
Sex	Female	52.0 %
	Male	48.0 %
Main situation of activity (at the time of the interview)	Studying	20.4 %
	Employed	55.2 %
	Unemployed	22.4 %
	Others	2.0 %
Family SES background	High	25.8 %
	Middle	31.0 %
	Low	43.1 %

Network characteristics of the sub-set of contacts who had helped the interviewees to look for jobs (Mean number of contacts and standard deviation) (N=250):	
Overall number	9.34(4.63)
Sociability sphere: Family	2.75(2.01)
Sociability sphere: Employment	1.81(2.01)
Sociability sphere: Education	2.0(2.42)
Sociability sphere: Other	2.75(2.46)
Employed contacts	7.4(3.93)
Unemployed contacts	0.67(1.09)
Contacts of low SES	4.48(3.59)
Contacts of middle or high SES	4.224(3.26)
Weak ties ("not close at all")	1.38(1.49)
Strong ties ("intimate" and "close")	7.94(4.08)
Contacts who had actually helped to find a job	2.56(2.10)

Events characteristics (%) (N=1734)		
Type of event	Education	17.3 %
	Employment	65.1 %
	Unemployment	14.2 %
	Others	3.5 %
Mechanism used for finding employment events	Family contacts	14.5 %
	Employment contacts	8.1 %
	Educational contacts	6.3 %
	Other contacts	9.3 %
	Old unknown contacts	24.9 %
	Formal mechanism	19.2 %
	Self-application	17.7 %
Mechanism used for finding the first job	Family contacts	26.5 %
	Non-family contacts	42.4 %
	Other mechanisms (formal & self-application)	31.1 %

Table A1: Summary statistics for study variables (continuation)

Characteristics of the trajectory during the recession (from October 2007 to March 2014) (N=250):

Labour market status (mean number of months in the following states and standard deviation)	Studying	27.59(28.45)
	Unstable employment (temporary contracts, internships, working without contract or in short odd jobs)	20.93(23.29)
	Stable employment (open-ended contracts or non-salaried employment)	16.10(25.49)
	Unemployed	9.77(16.25)
Experience of unemployment during the crisis	Never unemployed or unemployed less than 12 months	72.0%
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months	14.4%
	Long events of unemployment (>=12 months) that total 24 months or more	13.6%

Table A2: Additional information for Table 2: Multinomial logistic regression analysis testing the factors associated with using networks to find the first job. Baseline category: using formal mechanisms or self-application (N=250).

		B	SE	Sig.	Exp(B)
First job obtained through family networks	Intercept	5.604	1.785	**	
	Age at the start of the first job	-.349	.105	**	.705
	Low family SES background (vs. middle and high family SES background)	-.739	.367	*	.478
	Sex: male (vs. female)	.585	.361		1.795
	Event started during the crisis (vs. event started before 2008)	1.419	.454	**	4.133
	Origin: born abroad (v. born in Spain)	.266	.578		1.305
First job obtained through non-family networks	Intercept	4.361	1.499	**	
	Age at the start of the first job	-.219	.086	*	.803
	Low family SES background (vs. middle and high family SES background)	-.257	.312		.774
	Sex: male (vs. female)	-.430	.314		.651
	Event started during the crisis (vs. event started before 2008)	.360	.441		1.433
	Origin: born abroad (v. born in Spain)	.319	.488		1.375

R2 Nagelkerke : 0.149**

Significance level: **0.01 *0.05

Table A3a: Additional information for Table 3: Odds Ratios and 95% Confidence Intervals (between brackets) of binary multilevel regression models showing the association of the interviewee's sex, origin, age, level of education and the sphere where contacts were met with the employment status (employed) of the contacts (N=250 interviewees, N=2336 contacts who had helped look for jobs).

	Random effects:			
	Interviewee variance	0.532	0.439	0.330
	Fixed effects:			
	Contact sociability sphere: employment (vs. family)		2.680(1.58-4.53)**	2.631(1.55-4.46)**
	Contact sociability sphere: education (vs. family)		0.869(0.58-1.30)	0.874(0.59-1.31)
Middle and high family SES background	Contact sociability sphere: other (vs. family)		1.083(0.73-1.62)	1.078(0.72-1.61)
	Interviewee sex: male (vs. female)			0.985(0.66-1.47)
	Interviewee origin: born abroad (vs. born in Spain)			1.086(0.63-1.88)
	Interviewee age: 25-29 (vs. 20-24)			1.707(1.00-2.91)**
	Interviewee age: 30-34 (vs. 20-24)			1.176(0.68-2.04)
	Interviewee education: higher (vs. primary and secondary education)			1.438(0.94-2.21)
	AIC	1165.9	1148.8	1149.4
	BIC	1176.1	1174.4	1200.5
	ICC	0.139	11.800	9.100
	Random effects:			
	Interviewee variance	0.435	0.409	0.405
	Fixed effects:			
	Contact sociability sphere: employment (vs. family)		4.087(2.29-7.28)**	4.094(2.29-7.332)**
	Contact sociability sphere: education (vs. family)		1.495(0.95-2.36)	1.471(0.93-2.33)
Low family SES background	Contact sociability sphere: other (vs. family)		1.394(0.96-2.03)	1.403(0.96-2.05)
	Interviewee sex: male (vs. female)			1.158(0.75-1.78
	Interviewee origin: born abroad (vs. born in Spain)			1.188(0.66-2.13)
	Interviewee age: 25-29 (vs. 20-24)			1.032(0.60-1.78)
	Interviewee age: 30-34 (vs. 20-24)			1.063(0.63-1.79)
	Interviewee education: higher (vs. primary and secondary education)			1.260(0.79-2.01)
	AIC	1069.3	1045.5	1054.1
	BIC	1079.1	1070.1	1103.2
	ICC	0.117	0.111	0.110

Significance level: **0.01 *0.05

Table A3b: Additional information for Table 3: Odds Ratios and 95% Confidence Intervals (between brackets) of binary multilevel regression models showing the association of the interviewee's sex, origin, age, level of education and the sphere where contacts were met with the employment status (unemployed) of the contacts (N=250 interviewees, N=2336 contacts who had helped look for jobs).

	Random effects:			
	Interviewee variance	0.438	0.380	0.039
	Fixed effects:			
	Contact sociability sphere: employment (vs. family)		1.380(0.53-3.58)	1.384(0.53-3.58)
	Contact sociability sphere: education (vs. family)		2.389(1.04-5.49)*	2.442(1.07-5.59)*
Middle and high family SES background	Contact sociability sphere: other (vs. family)		2.554(1.14-5.74)*	2.365(1.06-5.28)*
	Interviewee sex: male (vs. female)			0.799(0.45-1.43)
	Interviewee origin: born abroad (vs. born in Spain)			1.802(0.74-3.47)
	Interviewee age: 25-29 (vs. 20-24)			2.237(0.86-5.80)
	Interviewee age: 30-34 (vs. 20-24)			3.090(1.17-8.19)*
	Interviewee education: higher (vs. primary and secondary education)			0.757(0.41-1.41)
	AIC	463.9	462.3	463.8
	BIC	474.1	487.9	515
	ICC	0.117	10.300	1.200
	Random effects:			
	Interviewee variance	0.621	0.591	0.549
	Fixed effects:			
	Contact sociability sphere: employment (vs. family)		0.360(0.16-0.82)*	0.354(0.16-0.81)*
	Contact sociability sphere: education (vs. family)		1.029(0.56-1.88)	1.078(0.58-1.99)
Low family SES background	Contact sociability sphere: other (vs. family)		0.933(0.56-1.57)	0.908(0.54-1.53)
	Interviewee sex: male (vs. female)			0.838(0.48-1.48)
	Interviewee origin: born abroad (vs. born in Spain)			0.914(0.43-1.94)
	Interviewee age: 25-29 (vs. 20-24)			1.075(0.52-2.22)
	Interviewee age: 30-34 (vs. 20-24)			1.122(0.57-2.22)
	Interviewee education: higher (vs. primary and secondary education)			0.609(0.32-1.15)
	AIC	660.5	657.1	664.6
	BIC	670.3	681.6	713.7
	ICC	0.159	15.200	14.300

Significance level: **0.01 *0.05

Table A3c: Additional information for Table 3: Odds Ratios and 95% Confidence Intervals (between brackets) of binary multilevel regression showing the association of the interviewee's sex, origin, age, level of education and the sphere where contacts were met with the SES (middle or high) of the contacts (N=250 interviewees, N=2336 contacts who had helped look for jobs).

	Random effects:			
	Interviewee variance	1.313	1.388	1.003
	Fixed effects:			
	Contact sociability sphere: employment (vs. family)		0.487(0.32-0.74)**	0.460(0.30-0.70)**
	Contact sociability sphere: education (vs. family)		0.388(0.26-0.58)**	0.371(0.25-0.56)**
	Contact sociability sphere: other (vs. family)		0.342(0.23-0.51)**	0.337(0.23-0.50)**
Middle and high family SES background	Interviewee sex: male (vs. female)			1.130(0.70-1.81)
	Interviewee origin: born abroad (vs. born in Spain)			0.631(0.32-1.26)
	Interviewee age: 25-29 (vs. 20-24)			0.898(0.47-1.71)
	Interviewee age: 30-34 (vs. 20-24)			1.187(0.60-2.34)
	Interviewee education: higher (vs. primary and secondary education)			3.136(1.88-5.24)**
	AIC	1458.8	1428	1410
	BIC	1469	1453.3	1460.6
	ICC	0.285	29.700	23.400
	Random effects:			
	Interviewee variance	0.825	0.699	0.499
	Fixed effects:			
	Contact sociability sphere: employment (vs. family)		3.117(1.98-4.90)**	3.028(1.93-4.75)**
	Contact sociability sphere: education (vs. family)		2.951(1.87-4.67)**	2.851(1.80-4.51)**
	Contact sociability sphere: other (vs. family)		1.282(0.86-1.92)	1.292(0.86-1.93)
Low family SES background	Interviewee sex: male (vs. female)			0.819(0.53-1.27)
	Interviewee origin: born abroad (vs. born in Spain)			0.619(0.33-1.15)
	Interviewee age: 25-29 (vs. 20-24)			1.369(0.77-2.43)
	Interviewee age: 30-34 (vs. 20-24)			1.245(1.19-3.02)
	Interviewee education: higher (vs. primary and secondary education)			1.896(1.19-3.02)**
	AIC	1168.2	1125.3	1118.7
	BIC	1177.9	1149.4	1166.9
	ICC	0.200	17.500	13.200

Significance level: **0.01 *0.05

Table A4a: Additional information for Table 4. Linear regression analysis showing the association of long-term unemployment during the recession with the number of contacts who had helped to look for jobs who were met in the employment sphere, segmented according to the interviewees' family SES background (N=250 interviewees):

		B	SE	Beta	Sig.	TOL	B	SE	Beta	Sig.	TOL
Middle and high family SES background	Intercept	0.945	0.408		*		0.617	0.426			
	Length of trajectory in years	0.025	0.044	0.050		0.750	0.009	0.047	0.019		0.635
	Number of jobs	0.283	0.063	0.411	**	0.699	0.273	0.063	0.397	**	0.671
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months (vs. never unemployed or unemployed less than 12 months)	-1.196	0.534	-0.183	*	0.884	-0.969	0.533	-0.149		0.852
	Long events of unemployment (>=12 months) that total 24 months or more (vs. never unemployed or unemployed less than 12 months)	-2.340	0.775	-0.240	**	0.944	-2.395	0.773	-0.245	**	0.912
	Education: higher (vs. primary and secondary)						0.285	0.357	0.067		0.812
	Sex: male (vs. female)						0.859	0.328	0.202	**	0.958
	Origin: born abroad (vs. born in Spain)						-0.387	0.494	-0.059		0.991
	R2		0.192		**			0.241		**	
Low family SES background	Intercept	0.827	0.507				0.949	0.568			
	Length of trajectory in years	0.115	0.051	0.254	*	0.678	0.096	0.054	0.212		0.611
	Number of jobs	-0.026	0.067	-0.046		0.646	0.003	0.073	0.004		0.551
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months (vs. never unemployed or unemployed less than 12 months)	0.370	0.485	0.076		0.863	0.341	0.491	0.071		0.853
	Long events of unemployment (>=12 months) that total 24 months or more (vs. never unemployed or unemployed less than 12 months)	-1.014	0.426	-0.235	*	0.888	-0.911	0.451	-0.211	*	0.802
	Education: higher (vs. primary and secondary)						0.233	0.485	0.053		0.734
	Sex: male (vs. female)						-0.071	0.373	-0.019		0.869
	Origin: born abroad (vs. born in Spain)						-0.591	0.536	-0.108		0.920
	R2		0.124		**			0.139		*	

Significance level: **0.01 *0.05

Table A4b: Additional information for Table 4. Linear regression analysis showing the association of long-term unemployment during the recession with the number of contacts who had helped to look for jobs who were employed, segmented according to the interviewees' family SES background (N=250 interviewees):

		B	SE	Beta	Sig.	TOL	B	SE	Beta	Sig.	TOL
Middle and high family SES background	Intercept	7.416	0.852		**		6.412	0.882		**	
	Length of trajectory in years	-0.111	0.091	-0.118		0.750	-0.155	0.096	-0.164		0.635
	Number of jobs	0.316	0.132	0.240	*	0.699	0.303	0.131	0.230	*	0.671
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months (vs. never unemployed or unemployed less than 12 months)	-0.558	1.115	-0.045		0.884	-0.037	1.103	-0.003		0.852
	Long events of unemployment (>=12 months) that total 24 months or more (vs. never unemployed or unemployed less than 12 months)	-0.761	1.618	-0.041		0.944	-0.851	1.599	-0.045		0.912
	Education: higher (vs. primary and secondary)						0.812	0.738	0.100		0.812
	Sex: male (vs. female)						1.738	0.679	0.213	*	0.958
	Origin: born abroad (vs. born in Spain)						1.824	1.023	0.146		0.991
	R2		0.041					0.116		*	
Low family SES background	Intercept	8.432	1.057		**		7.654	1.180		**	
	Length of trajectory in years	-0.076	0.107	-0.082		0.678	-0.072	0.113	-0.079		0.611
	Number of jobs	0.104	0.139	0.090		0.646	0.115	0.151	0.099		0.551
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months (vs. never unemployed or unemployed less than 12 months)	0.273	1.010	0.028		0.863	0.312	1.020	0.032		0.853
	Long events of unemployment (>=12 months) that total 24 months or more (vs. never unemployed or unemployed less than 12 months)	-2.244	0.888	-0.257	*	0.888	-2.208	0.937	-0.253	*	0.802
	Education: higher (vs. primary and secondary)						0.964	1.007	0.107		0.734
	Sex: male (vs. female)						0.605	0.775	0.081		0.869
	Origin: born abroad (vs. born in Spain)						1.238	1.112	0.112		0.920
	R2		0.073					0.094			

Significance level: **0.01 *0.05

Table A4c: Additional information for Table 4. Linear regression analysis showing the association of long-term unemployment during the recession with the number of contacts who had helped to look for jobs who had middle or high SES, segmented according to the interviewees' family SES background (N=250 interviewees):

		B	SE	Beta	Sig.	TOL	B	SE	Beta	Sig.	TOL
Middle and high family SES background	Intercept	4.002	0.743		**		3.231	0.755		**	
	Length of trajectory in years	0.073	0.080	0.089		0.750	-0.031	0.083	-0.037		0.635
	Number of jobs	0.149	0.116	0.130		0.699	0.178	0.112	0.155		0.671
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months (vs. never unemployed or unemployed less than 12 months)	-1.444	0.973	-0.133		0.884	-0.712	0.945	-0.065		0.852
	Long events of unemployment (>=12 months) that total 24 months or more (vs. never unemployed or unemployed less than 12 months)	-1.328	1.411	-0.081		0.944	-0.893	1.369	-0.055		0.912
	Education: higher (vs. primary and secondary)						1.999	0.632	0.282	**	0.812
	Sex: male (vs. female)						1.318	0.581	0.186	*	0.958
	Origin: born abroad (vs. born in Spain)						0.295	0.876	0.027		0.991
	R2		0.038					0.145		**	
Low family SES background	Intercept	4.002	0.743		**		3.452	0.735		**	
	Length of trajectory in years	0.073	0.080	0.089		0.750	-0.016	0.070	-0.025		0.611
	Number of jobs	0.149	0.116	0.130		0.699	0.020	0.094	0.025		0.551
	Events of unemployment, short (<12 months) or long (>=12months), that total between 12 and 24 months (vs. never unemployed or unemployed less than 12 months)	-1.444	0.973	-0.133		0.884	-0.054	0.635	-0.008		0.853
	Long events of unemployment (>=12 months) that total 24 months or more (vs. never unemployed or unemployed less than 12 months)	-1.328	1.411	-0.081		0.944	-1.517	0.584	-0.257	*	0.802
	Education: higher (vs. primary and secondary)						1.933	0.627	0.319	**	0.734
	Sex: male (vs. female)						-0.150	0.483	-0.030		0.869
	Origin: born abroad (vs. born in Spain)						-0.349	0.693	-0.047		0.920
	R2		0.141		**			0.230		**	

Significance level: **0.01 *0.05

Table A5: Odds Ratios and 95% Confidence Intervals (between brackets) of binary multilevel regression models showing whether spells of employment are occasions for acquiring further contacts, according to the mechanism used for obtaining jobs (N=250 interviewees, N=1734 events of employment).

	Random effects:			
	Interviewee variance	0.472	0.333	0.362
	Fixed effects:			
	Intercept			
	Job-finding mechanism: employment contact (vs. family)		2.330(0.97-5.57)	2.282(0.94-5.54)
	Job-finding mechanism: educational contact (vs. family)		2.344(0.92-5.95)	2.353(0.90-6.17)
Middle and	Job-finding mechanism: contacts from other spheres (vs. family)		2.909(1.25-6.77)*	2.949(1.25-6.94)*
high family	Job-finding mechanism: old unknown contact (vs. family)		0.839(0.38-1.85)	0.805(0.36-1.81)
SES	Job-finding mechanism: formal mechanism (vs. family)		0.927(0.39-2.20)	0.908(0.37-2.21)
background	Job-finding mechanism: self-application (vs. family)		1.100(0.49-2.45)	1.120(0.50-2.51)
	Interviewee sex: male (vs. female)			1.110(0.67-1.85)
	Interviewee origin: born abroad (vs. born in Spain)			1.150(0.52-2.57)
	Interviewee age: 25-29 (vs. 20-24)			1.041(0.59-1.82)
	Interviewee age: 30-34 (vs. 20-24)			0.458(0.12-1.71)
	Interviewee education: higher (vs. primary and secondary education)			1.206(0.72-2.03)
	AIC	615.8	600.4	608.1
	BIC	625.2	637.7	668.7
	ICC	0.125	9.200	9.900
	Random effects:			
	Interviewee variance	0.359	0.165	0.000
	Fixed effects:			
	Intercept			
	Job-finding mechanism: employment contact (vs. family)		3.784(1.25-11.44)*	3.825(1.29-11.38)*
	Job-finding mechanism: educational contact (vs. family)		0.819(0.15-4.44)	0.663(0.12-3.60)
	Job-finding mechanism: contacts from other spheres (vs. family)		1.716(0.55-5.37)	1.618(0.52-5.07)
Low family	Job-finding mechanism: old unknown contact (vs. family)		1.493(0.55-4.07)	1.296(0.48-3.49)
SES	Job-finding mechanism: formal mechanism (vs. family)		2.136(0.80-5.68)	2.024(0.76-5.39)
background	Job-finding mechanism: self-application (vs. family)		1.099(0.35-3.43)	0.920(0.30-2.83)
	Interviewee sex: male (vs. female)			0.583(0.33-1.03)
	Interviewee origin: born abroad (vs. born in Spain)			0.654(0.28-1.51)
	Interviewee age group: 25-29 (vs. 20-24)			0.883(0.48-1.62)
	Interviewee age group: 30-34 (vs. 20-24)			0.228(0.03-1.77)
	Interviewee education: higher (vs. primary and secondary education)			1.102(0.60-2.03)
	AIC	451.1	447.9	448.2
	BIC	459.8	482.7	504.6
	ICC	0.098	4.800	0.000

Significance level: **0.01 *0.05