

The Interrelationship between Working Status and Social Networks and Its Association with Cognitive Functioning of Older Adults.



Thomas Arnhold^{1,2}, Daniela Weber^{1,2}, Valeria Bordone^{1,3}

Wittgenstein Centre, International Institute for Applied Systems Analysis (IIASA)¹, Vienna University of Economics and Business (WU)², University of Vienna³

Background and Research Question

The preservation of cognitive functioning is a central aspect of older peoples' health and well-being. A **crucial ingredient for good cognitive functioning** at an advanced age is cognitive stimulation through engagement with life, which includes the **maintenance of a strong social network and participation in productive activities**.

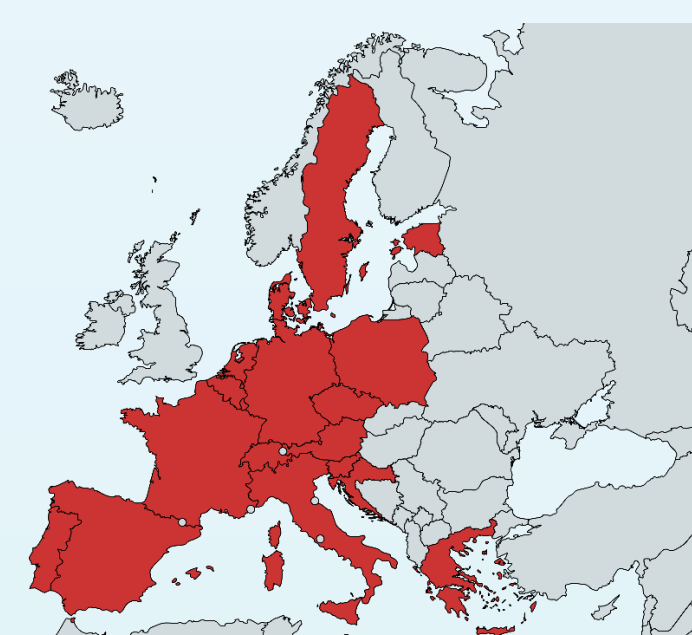
- **Employment:** a productive activity that is a **central source of cognitive stimulation** for workers.
- A **strong social network** can be an **important substitute** for engaging in productive activities.

Do social network resources compensate for the absence of cognitive stimulation through employment for non-working older individuals?

Data

Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 6.

Sample: people aged 50+, residing in 17 European countries (N=49,733).



Methodology

Linear multilevel model with a random intercept

- Individuals as level 1 and countries as level 2

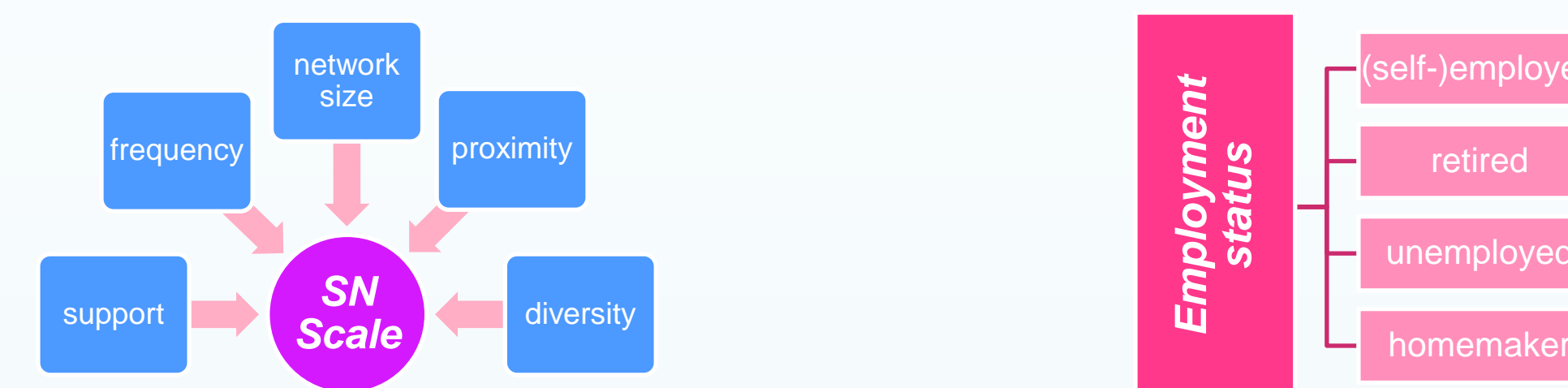
Outcome variables:

- Episodic memory (sum of scores in two word recall tests)
- Verbal fluency (animal naming test score)

Covariates:

- Social Network Scale (*SN scale*; composite score, range: 0-4)
- Employment status
- Interaction term

Controls: gender, age, educational attainment, partnership status, financial wealth, financial distress, mobility limitations, ADL limitations, and cognitive deterioration



Descriptive results

Fig. 1 – episodic memory by social network scale and employment status.

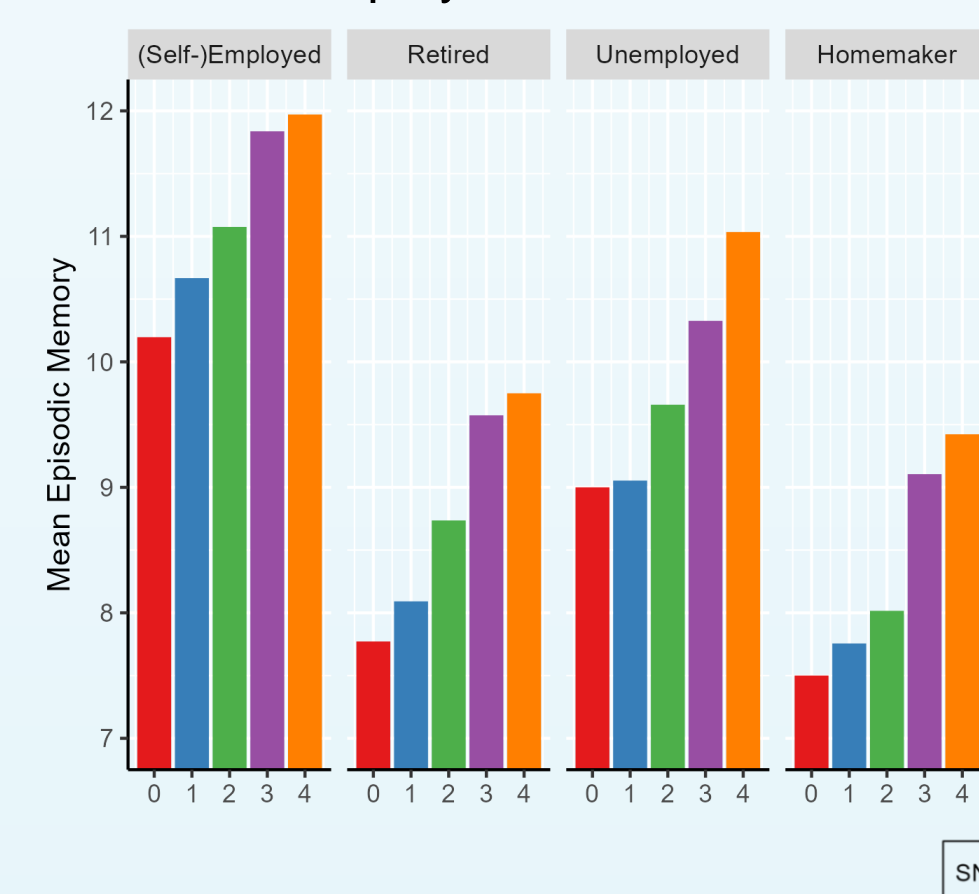
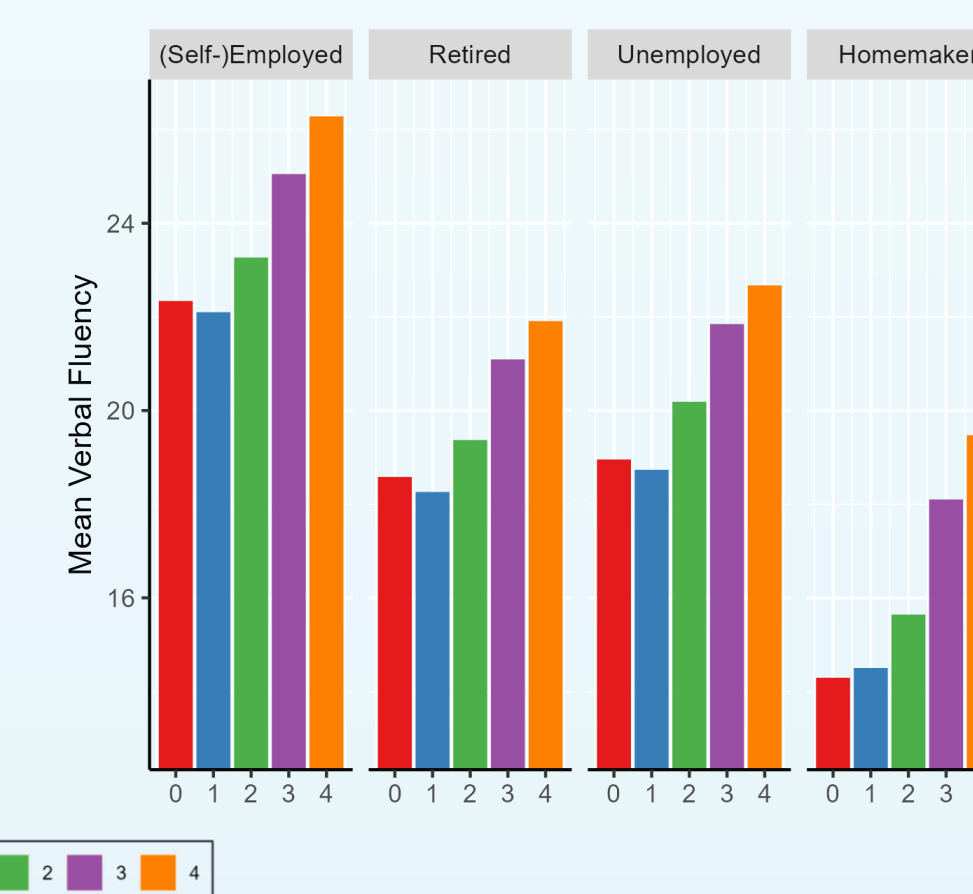


Fig. 2 – verbal fluency by social network scale and employment status.



- (Self-)employed have the highest cognitive functioning scores, homemakers the lowest.
- **Social network gradient is stronger for episodic memory** than for verbal fluency.

Empirical results

Episodic memory

- Positive effect of social network resources
- Negative effect: unemployed, homemaker
- Effect of being retired is negative for individuals with SN Scale ≤ 3 and positive otherwise.
- **Positive interaction between not working and social network resources**

Verbal fluency

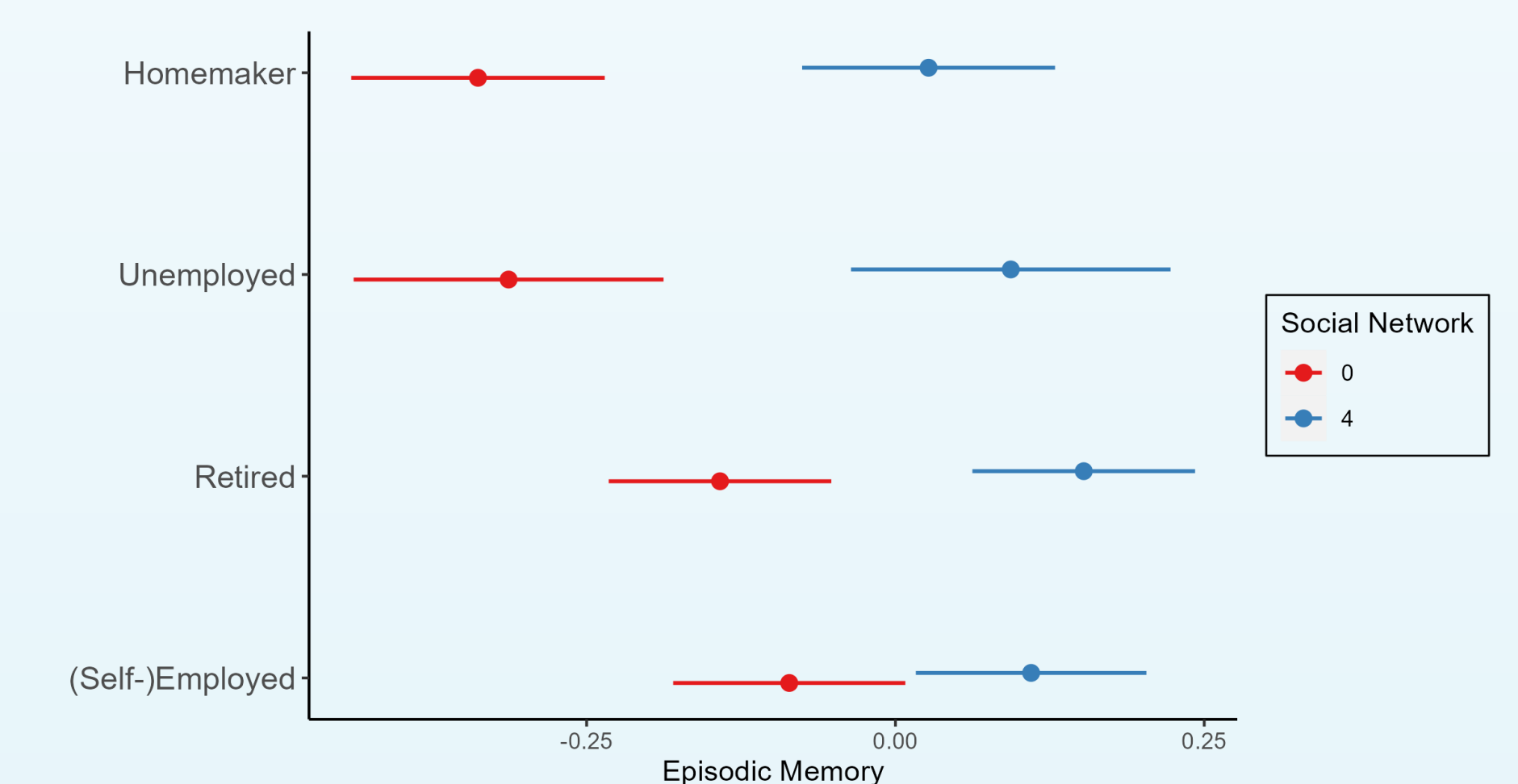
- Positive effect of social network resources
- Negative effect: unemployed, homemaker

Tab. 1 – multilevel regression coefficients and standard errors.

	Episodic Memory		Verbal Fluency	
	Estimate	Std error	Estimate	Std error
Social Network	0.049***	0.009	0.079***	0.008
Working Status (Ref.: Employed)				
Retired	-0.056**	0.024	-0.028	0.023
Unemployed	-0.227***	0.057	-0.150***	0.056
Homemaker	-0.252***	0.038	-0.203***	0.037
Interaction (Ref.: Employed x SN)				
Retired x Social Network	0.025**	0.010	-0.012	0.010
Unemployed x Social Network	0.053**	0.027	0.025	0.026
Homemaker x Social Network	0.042**	0.017	0.018	0.017

Significance levels: * p < 0.1, ** p < 0.05, *** p < 0.01.

Fig. 3 – predicted episodic memory by employment status: weak vs. strong social network (90% CIs).



Episodic memory: effect sizes in words (Ref.: Employed, $\mu=9.32$ words)

	Weak Social Network (SN Scale=0)	Strong Social Network (SN Scale=4)
Unemployed	-0.83 words	-0.06 words
Homemaker	-0.93 words	-0.31 words
Retired	-0.21 words	+0.16 words

Conclusion

- Significant **importance of a strong social network for cognitive functioning**
- Particularly for the **episodic memory of non-workers**
- For individuals with a strong social network, employment status' predicted importance for episodic memory decreases dramatically.

Next steps: Considering work histories, physical/intellectual demand, industry of employment.