

DO SOCIAL NETWORKS REALLY MATTER?

Prof. Howard Litwin

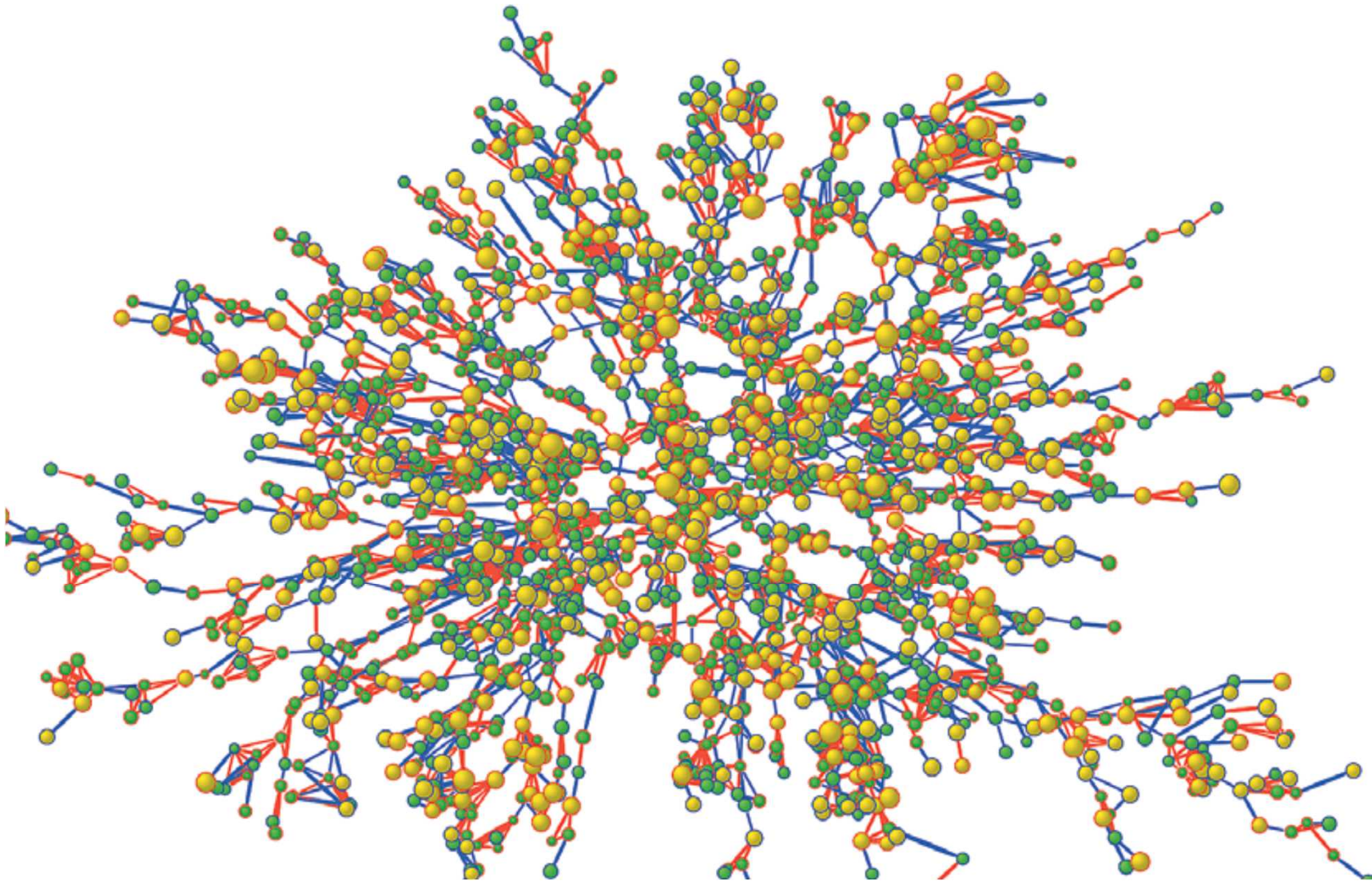
**Lecture given at the
SHARE USERS' CONFERENCE
LIEGE**

November 28, 2013

◆ The importance of social networks for the subjective well-being of older people is well established in the literature

(Cornwell and Waite 2009, Fiori, Antonucci and Cortina 2006, Ha 2010, Mechakra-Tahiri *et al.* 2009, Merz and Huxhold 2010, Newsom *et al.* 2005, Zunzunegui, Beland and Otero 2001).

◆ There is less agreement as to how social networks are best measured for analytical purposes.



Each circle (node) represents one person in the data set (N= 2200). Circles with red borders denote women, blue borders denote men. The size of each circle is proportional to the person's BMI: yellow denotes an obese person, green denotes a nonobese person. The colors of the ties between the nodes indicate the relationship between them: purple denotes a friendship or marital tie and orange denotes a familial tie.

❖ **Analysis of whole networks is time consuming and costly**

❖ **Consequently, large population studies that aim to address social networks generally do so by means of personal or egocentric networks**

❖ **These efforts rely on the egos to provide information about the identities of alters**

PERSONAL NETWORK MEASUREMENT PARAMETERS

APPROACH	INFERRED (INDIRECT)	DERIVED (DIRECT)
NATURE SINGLE	1	2
COMPOSITE	3	4

- Indirect measurement of personal social networks is exemplified by the role-relational orientation which records the collection of social ties that one has, by category, also termed socio-demographic proxies.
- In this line of inquiry, the very existence of a social relationship is assumed to constitute sufficient evidence for comprising part of one's network.
- This approach has been the principal basis for the collection of social network data in such major surveys as the HRS, ELSA and the first two waves of SHARE.

FAMILY STRUCTURE AND INTERACTION



SOCIAL EXCHANGE



SOCIAL ENGAGEMENT



Net effects of Mediterranean region on family structure and interaction variables: Regression coefficients / odds ratios

Variable	<u>N</u>	<u>β^1</u>	<u>OR¹</u>
Family structure and interaction			
Spouse or partner ^{1,2}	8,996		1.38***
# of children ²	8,975	.05***	
# of grandchildren ²	8,930	.03**	
# of children in household ³	8,965	.25***	
Frequency of contact with most contacted child ³	8,580	.07***	

** p < .01; *** p < .001

- 1 Reference categories: Mediterranean countries (non-Mediterranean countries); spouse or partner (none);
- 2 Adjusted for age, gender, education and income.
- 3 Adjusted for age, gender, education, income, wealth, ADL, IADL, # of chronic illnesses and # of physical symptoms.

Litwin, H. (2009). Social networks and well being: A comparison of older people in Mediterranean and non-Mediterranean countries. Journal of Gerontology: Social Sciences, 65B (5): S599-S608.

**Net effects of Mediterranean region on social exchange variables:
Odds ratios**

Variable	<u>N</u>	<u>OR</u> ¹
Exchange		
Gave help within the household ^{1,2}	8,976	1.45***
Gave help outside the household ^{1,2}	8,981	.58***
Gave money ^{1,2}	8,976	1.38***
Got help within the household ^{1,2}	8,976	1.53***
Got help from outside the household ^{1,2}	8,976	.56***
Got money ^{1,2}	8,976	1.79***

*** p < .01; **** p < .001

- 1 Reference categories: Mediterranean countries (non-Mediterranean countries); spouse or partner (none); gave help within the household (no); gave help outside the household (no); gave money (no); got help within the household (no); got help from outside the household (no); got money (no).
- 2 Adjusted for age, gender, education, income, wealth, ADL, IADL, # of chronic illnesses and # of physical symptoms.

Litwin, H. (2009). Social networks and well being: A comparison of older people in Mediterranean and non-Mediterranean countries. Journal of Gerontology: Social Sciences, 65B (5): S599-S608.

Net effects of Mediterranean region on social engagement variables: Regression coefficients / odds ratios

Variable	<u>N</u>	<u>β^1</u>	<u>OR¹</u>
Engagement			
Work ^{1,2}	8,976		1.40***
# of activities ²	8,965	-.06***	
Frequency of activity in most frequent activity ²	8,960	-.00	

^{AA} $p < .01$; ^{AAA} $p < .001$

- 1 Reference categories: Mediterranean countries (non-Mediterranean countries); work (no).
- 2 Adjusted for age, gender, education, income, wealth, ADL, IADL, # of chronic illnesses and # of physical symptoms.

Litwin, H. (2009). Social networks and well being: A comparison of older people in Mediterranean and non-Mediterranean countries. Journal of Gerontology: Social Sciences, 65B (5): S599-S608.

LONELINESS: THE ABSENCE OF SOCIAL NETWORK

Net effects of Mediterranean region on relationship quality variable:
Regression coefficient

Variable	<u>N</u>	<u>β^1</u>
Relationship quality		
Loneliness ²	8,652	.08 ^{***}

*** p < .001

- 1 Reference categories: Mediterranean countries (non-Mediterranean countries);
- 2 Adjusted for age, gender, education, income, wealth, ADL, IADL, # of chronic illnesses and # of physical symptoms.

Litwin, H. (2009). Social networks and well being: A comparison of older people in Mediterranean and non-Mediterranean countries. Journal of Gerontology: Social Sciences, 65B (5): S599-S608.

Predictors of depressive symptoms in Mediterranean and non-Mediterranean countries: Beta coefficients

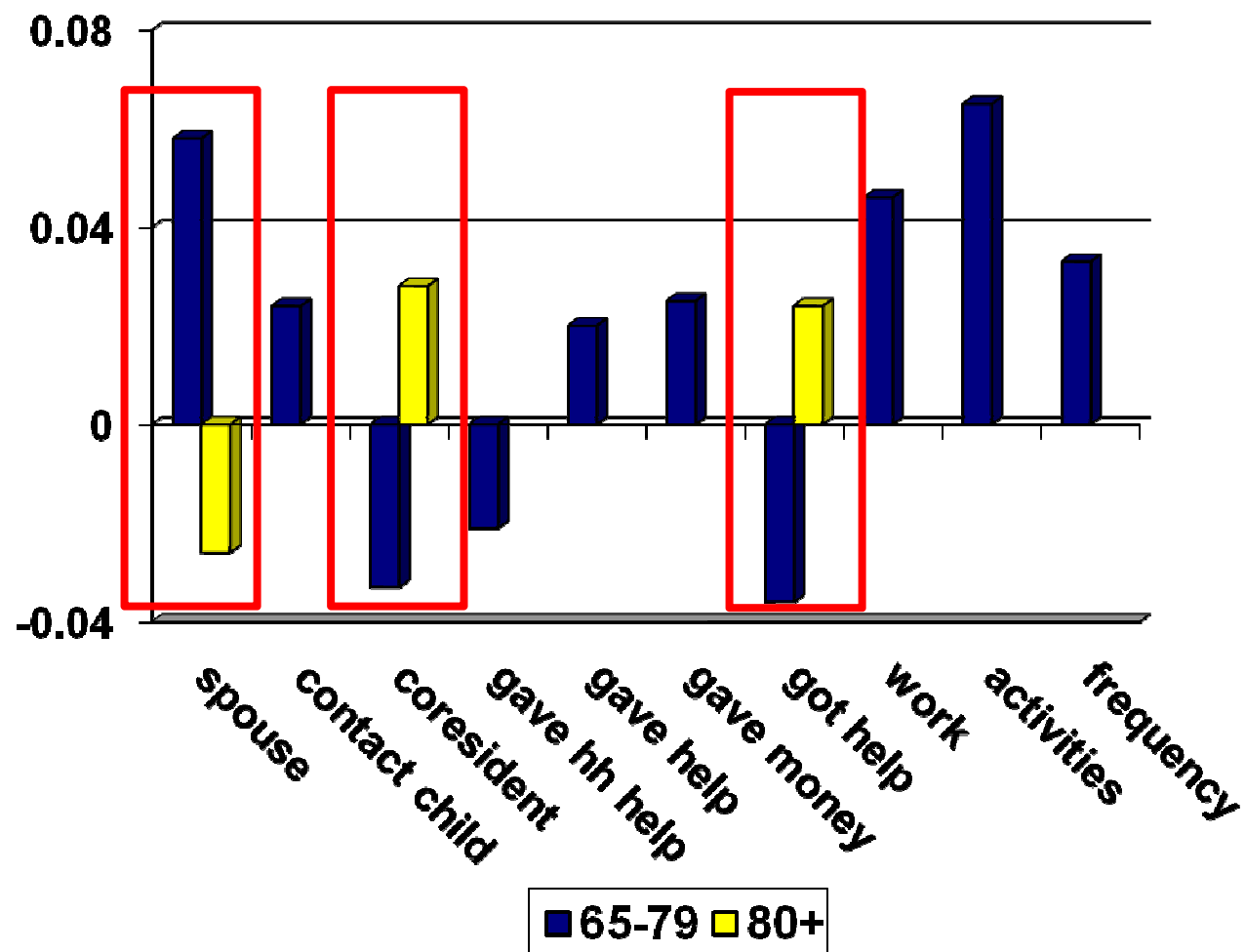
	Model 1 Back-ground & health	Model 2 Social network	Model 3 Social network by region
# of children in household		.033 ^{***}	
Frequency of contact with child			-.072*
Gave help within the household		.048 ^{***}	
Got help within the household		.041 ^{***}	
Got help outside the household		.039 ^{***}	
# of activities		-.044 ^{**}	
Loneliness		.270 ^{***}	
Interactions: X Mediterranean			.199 ^{***}
Got help within the household			.066*
# of activities			.095*
Loneliness			.080*
Adjusted R ²	.291	.363	.372
ΔR^2	--	.072	.009



* p < .05; ** p < .01; *** p < .001

Litwin, H. (2009). Social networks and well being: A comparison of older people in Mediterranean and non-Mediterranean countries. *Journal of Gerontology: Social Sciences*, 65B (5): S599-S608.

**Figure 4: Social network correlates of CASP scores in older Europeans:
significant OLS beta coefficients**



Litwin, H., and Stoeckel, K.J. (2012). Social networks and subjective wellbeing among older Europeans: Does age make a difference? *Ageing & Society*. 33(7): 1263-1281.

- In contrast, the direct approach sees the social network as a subjective phenomenon.
- The analyst derives the network by querying specifically who is important to a given respondent, most usually through the use of name generators.
- Name generators for network identification have been applied in the American GSS, in LASA (Amsterdam) and in NSHAP.

The new SN Module in SHARE

- Based upon a name generator
- Introduced in Wave 4
- Data available since 11/2012
- $N > 60,000$

Share w4 Questionnaire version 4.3.1

Forms Answer Navigate Options Help

Which of the following best describes HARRIET 's relationship to you?

IWER:Prompt if needed: so this person is your..

- | | |
|-------------------------------------------------------------------|------------------------------------------------------------------|
| <input type="radio"/> 1. Spouse/Partner | <input type="radio"/> 16. Aunt |
| <input type="radio"/> 2. Mother | <input type="radio"/> 17. Uncle |
| <input type="radio"/> 3. Father | <input type="radio"/> 18. Niece |
| <input type="radio"/> 4. Mother-in-law | <input type="radio"/> 19. Nephew |
| <input type="radio"/> 5. Father-in-law | <input type="radio"/> 20. Other relative |
| <input type="radio"/> 6. Stepmother | <input checked="" type="radio"/> 21. Friend |
| <input type="radio"/> 7. Stepfather | <input type="radio"/> 22. (Ex-)colleague/co-worker |
| <input type="radio"/> 8. Brother | <input type="radio"/> 23. Neighbour |
| <input type="radio"/> 9. Sister | <input type="radio"/> 24. Ex-spouse/partner |
| <input type="radio"/> 10. Child | <input type="radio"/> 25. Minister, priest, or other clergy |
| <input type="radio"/> 11. Step-child/your current partner's child | <input type="radio"/> 26. Therapist or other professional helper |
| <input type="radio"/> 12. Son-in-law | <input type="radio"/> 27. Housekeeper/Home health care provider |
| <input type="radio"/> 13. Daughter-in-law | <input type="radio"/> 96. None of these |
| <input type="radio"/> 14. Grandchild | <input type="radio"/> 97. Other (Specify) |
| <input type="radio"/> 15. Grandparent | |

DN_DN024_		SN_SND02_	HARRIET
DN_DN025_L		SN_SND05_	21
DN_DN040_	1	SN_SND02a_	a21
SN_SN001_I	1	SN_SND02_	
SN_SN002a_		SN_SND05_	

Share w4 Questionnaire version 4.4.1

Forms Answer Navigate Options Help

Please look at card 7

Where does HENRY(Father-in-law) live?

- ☐ 1. In the same household
- ☒ 2. In the same building
- ☐ 3. Less than 1 kilometre away
- ☐ 4. Between 1 and 5 kilometres away
- ☐ 5. Between 5 and 25 kilometres away
- ☐ 6. Between 25 and 100 kilometres away
- ☐ 7. Between 100 and 500 kilometres away
- ☐ 8. More than 500 kilometres away

SN_SN005a_	1	a1	SN_SN006_
SN_SN006_	2	a2	SN_SN007_
SN_SN007_			SN_SN009_
SN_SN009_			SN_SN005a_
SN_SN005a_			SN_SN006_

Share w4 Questionnaire version 4.4.1

Forms Answer Navigate Options Help

During the past twelve months, how often did you have contact with HENRY(Father-in-law) either personally, by phone or mail?

IWER: Any kind of contact, including for example e-mail, sms or other means

- ☐ 1. Daily
- ☐ 2. Several times a week
- ☐ 3. About once a week
- ☐ 4. About every two weeks
- ☐ 5. About once a month
- ☐ 6. Less than once a month
- ☐ 7. Never

SN_SN005a_	1	a1	SN_SN006_
SN_SN006_	2	a2	SN_SN007_
SN_SN007_			SN_SN009_
SN_SN009_			SN_SN005a_
SN_SN005a_			SN_SN006_

Share w4 Questionnaire version 4.4.1

[Forms](#) [Answer](#) [Navigate](#) [Options](#) [Help](#)

How close do you feel to HENRY(Father-in-law)?

IWER: Read out

- ☐ 1. Not very close
- ☐ 2. Somewhat close
- ☐ 3. Very close
- ☐ 4. Extremely close

SN_SN005a_	<input type="text" value="1"/>	a1	SN_SN006_
SN_SN006_	<input type="text" value="2"/>	a2	SN_SN007_
SN_SN007_	<input type="text" value="1"/>	a1	SN_SN009_
SN_SN009_	<div></div>		SN_SN005a_
SN_SN005a_			SN_SN006_

Share w4 Questionnaire version 4.4.1

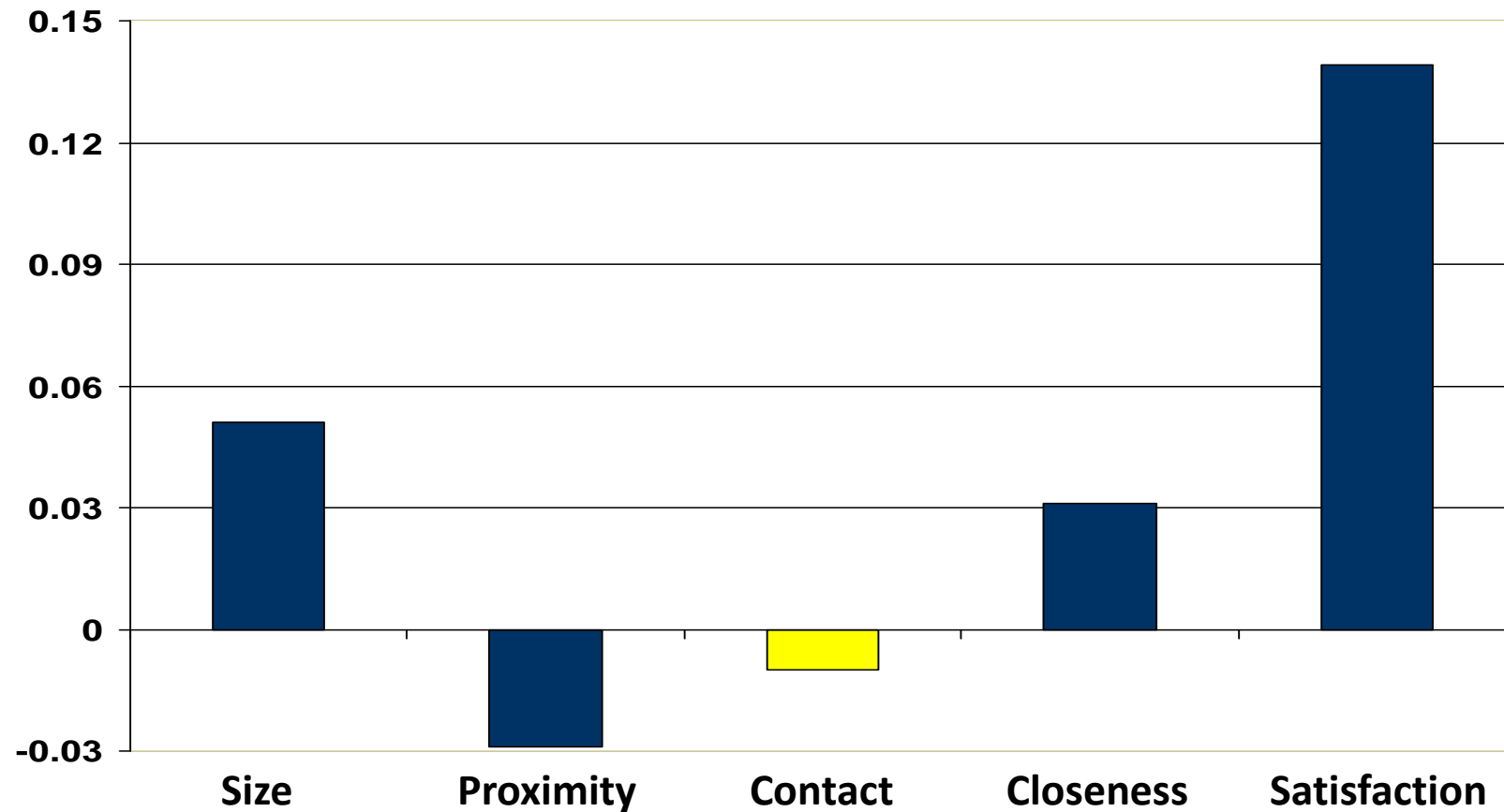
Forms Answer Navigate Options Help

Which family member from outside the household, friend or neighbour have you given personal care most often in the last twelve months?

<input type="radio"/> 1. BOB(Child)	<input type="radio"/> 18. Step-child/your current partner's child	<input type="radio"/> 31. Ex-spouse/partner
<input type="radio"/> 2. ROB(Father)	<input type="radio"/> 19. Son-in-law	<input type="radio"/> 32. Minister, priest, or other clergy
<input type="radio"/> 3. HARRY(Brother)	<input type="radio"/> 20. Daughter-in-law	<input type="radio"/> 33. Therapist or other professional helper
<input type="radio"/> 8. Spouse/partner	<input type="radio"/> 21. Grandchild	<input type="radio"/> 34. Housekeeper/Home health care provider
<input type="radio"/> 9. Mother	<input type="radio"/> 22. Grandparent	<input type="radio"/> 96. None of these
<input type="radio"/> 10. Father	<input type="radio"/> 23. Aunt	
<input type="radio"/> 11. Mother-in-law	<input type="radio"/> 24. Uncle	
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<input type="radio"/> 14. Stepfather	<input type="radio"/> 27. Other relative	
<input type="radio"/> 15. Brother	<input type="radio"/> 28. Friend	
<input type="radio"/> 16. Sister	<input type="radio"/> 29. (Ex-)Colleague/co-worker	
<input type="radio"/> 17. (Other) Child: RECORD NAME	<input type="radio"/> 30. Neighbour	

SP_SP009_T

SN CORRELATES OF WELL-BEING (CASP): BETA COEFFICIENTS



Adjusted for age; gender; education; perceived income adequacy; marital status; # of children, grandchildren, siblings; parent alive; ADL difficulty; mobility limitation; and country.

Reference country: NL

Relationship status and depressive symptoms among older co-resident caregivers

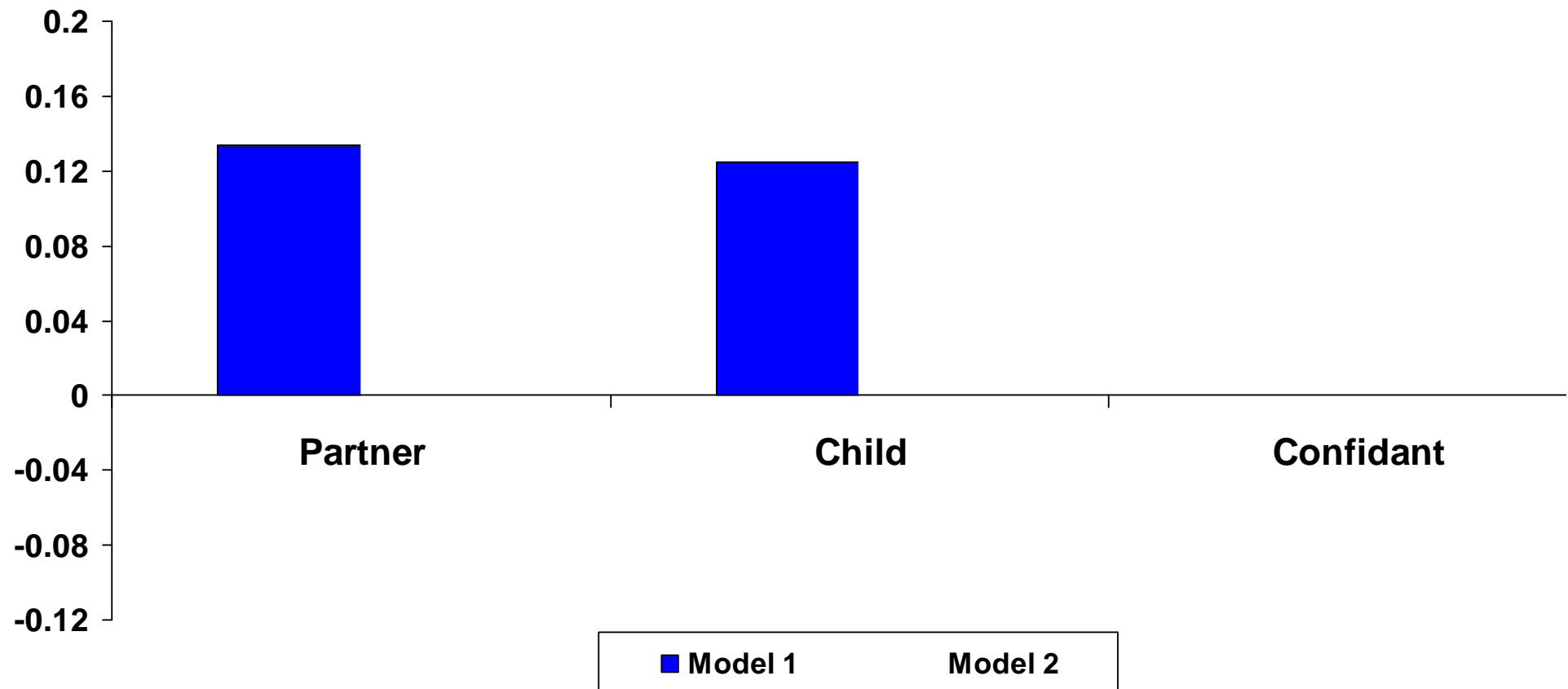
❖ We examined whether the type and closeness of the relationship among co-resident caregiver dyads in 16 SHARE countries lessen the extent of depressive symptoms of caregivers, controlling for other factors associated with depression.

❖ Hypotheses:

(1) The number of depressive symptoms varies by the relationship type of the co-residing caregiving dyad.

(2) Relationship closeness moderates the number of depressive symptoms.

Figure 1: Depressive symptoms among European co-resident caregivers aged 50+ by relationship type and status: Beta coefficients

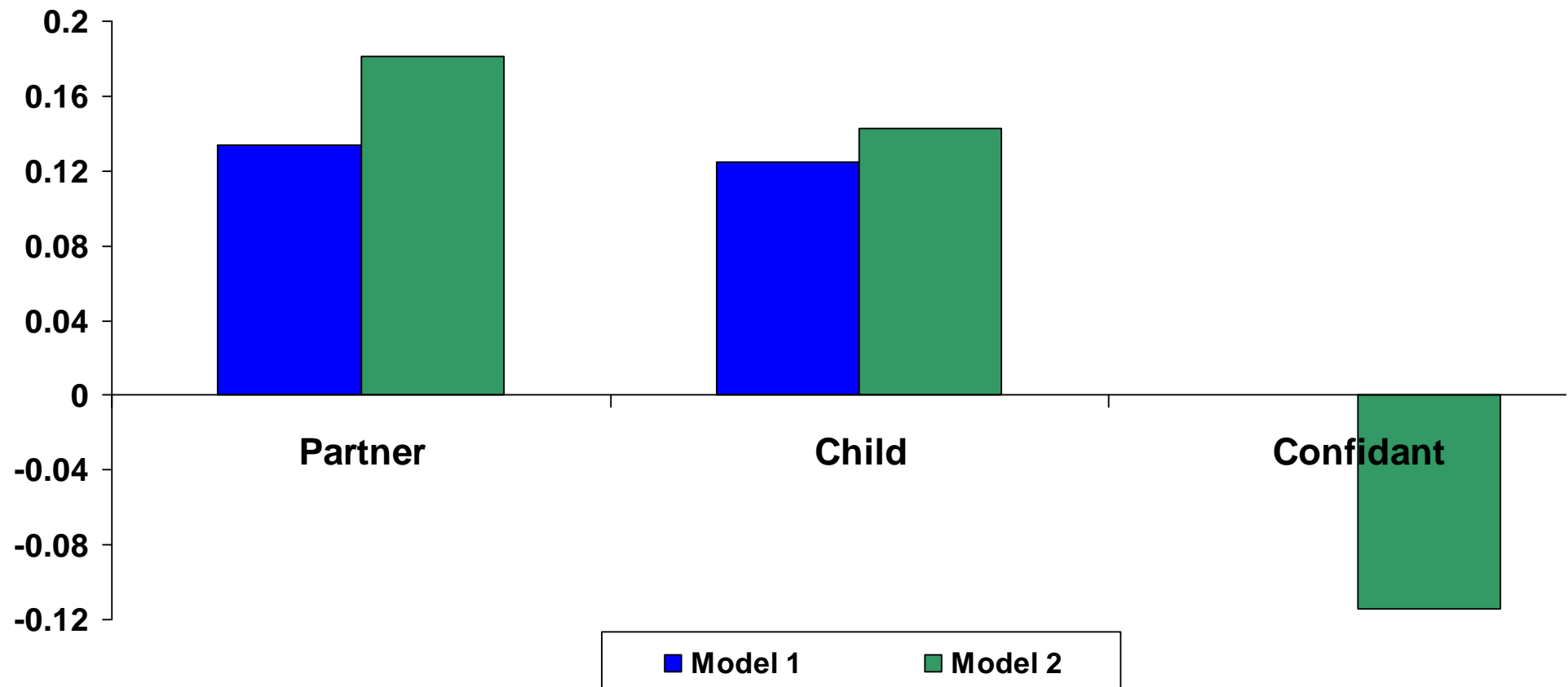


N=3,280; Reference categories: Relationship type—parent or other; Status—not a confidant

Adjusted for country, age, gender, marital status, # of children, education, income adequacy, cognition, physical symptoms, mobility limitations and IADL

Litwin, H., Stoeckel, K.J., Roll, A. (2013). Relationship status and depressive symptoms among older co-resident caregivers. Aging & Mental Health. First published online: September 23, 2013, DOI: 10.1080/13607863.2013.837148.

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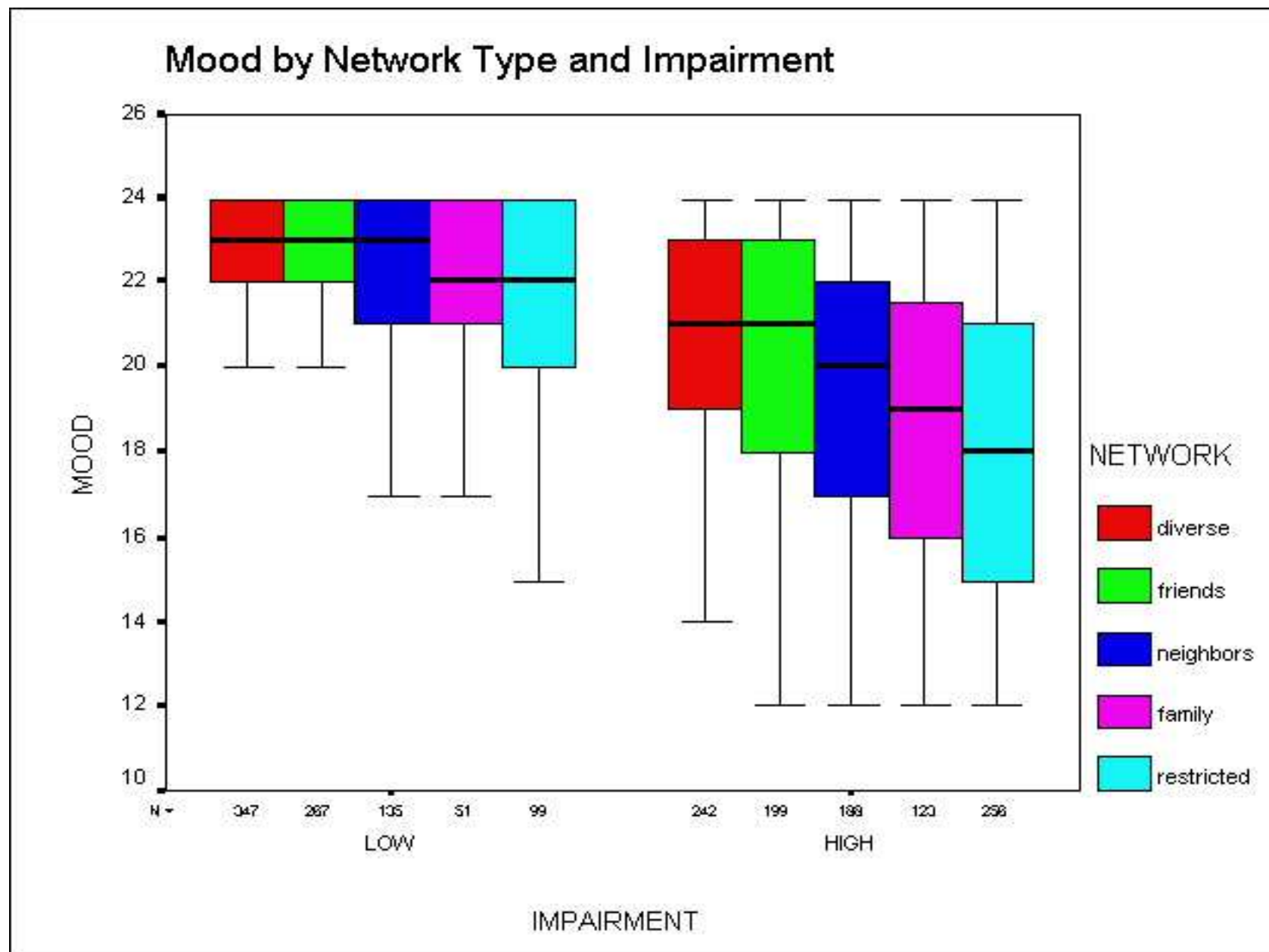
❑ Another methodological challenge regards the nature of the network measures used, specifically whether one should apply single or composite network indicators.

❑ Most network analyses use discrete measures that reflect different aspects of social network, e.g. size, density, frequency of contact, extent of exchange etc.

❑ However, a growing body of research suggests that a social network may be more than just "the sum of its parts."

❑ That is, social networks are best represented by unique combinations of individual network indicators.

- ❑ Wenger's (1991) groundbreaking work in this domain has drawn attention to the concept of network type.
- ❑ The construct allows for the identification of key personal social network configurations, as measured by the constellation of selected variables.
- ❑ Network type is represented in a series of unique characterizations of sets of social ties, often referred to as a network typology.
- ❑ Network types may be derived through several analytic procedures for data reduction.



Litwin, H., (2001). Social network type and morale in old age. The Gerontologist, 41(4): 516-524.

THE ASSOCIATION BETWEEN COMPOSITE NETWORK INDICATORS AND WELL-BEING

Research Aims & Questions:

- Identify network types using named confidants of older people
- Examine associations between network types and well-being in late life
- Analysis of socially isolated older people who lack meaningful social relationships

Litwin, H., and Stoeckel, K.J. (2013). Confidant Network Types and Well-Being among Older Europeans. The Gerontologist. First published online: June 7, 2013, DOI: 10.1093/geront/gnt056

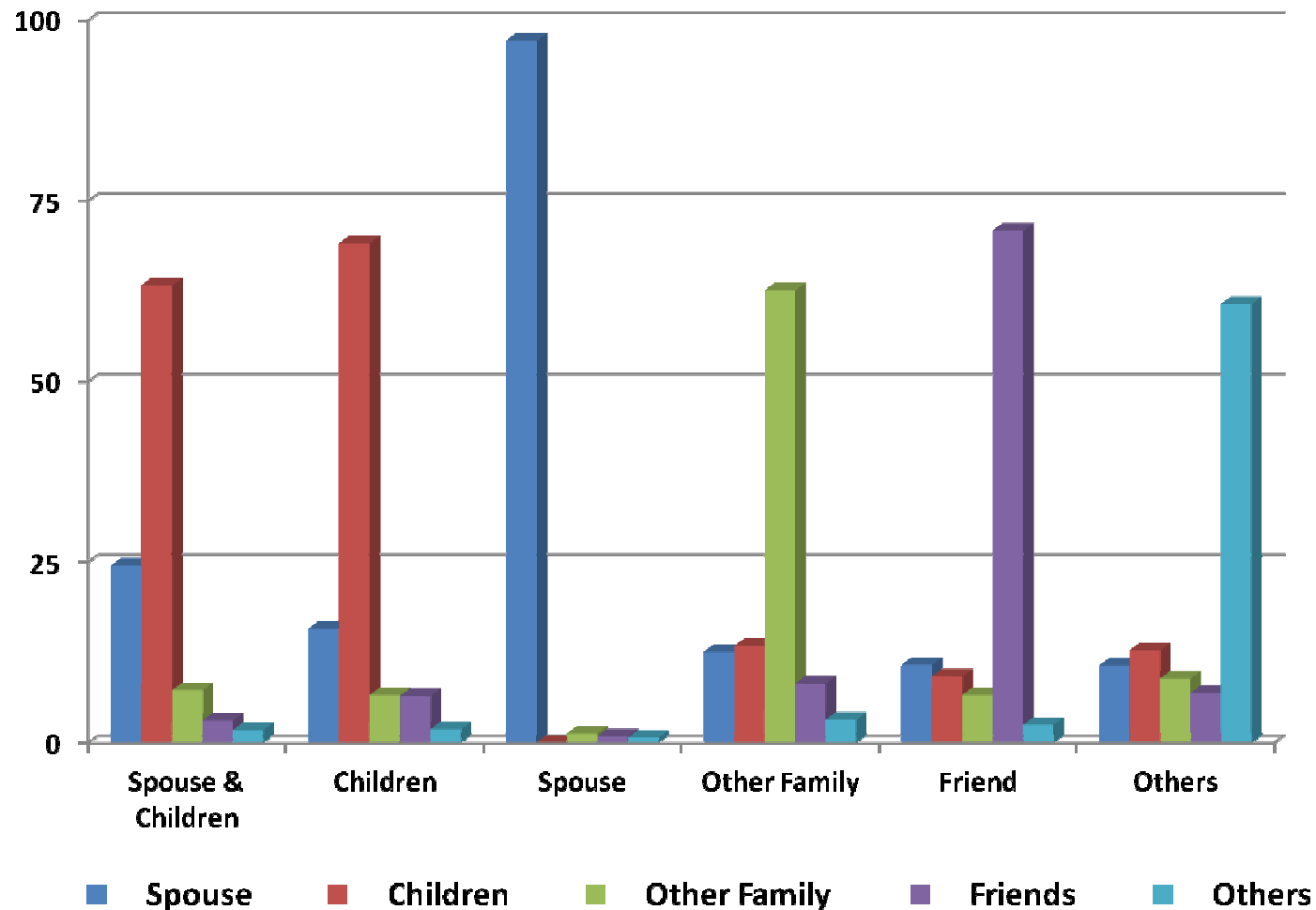
THE ASSOCIATION BETWEEN COMPOSITE NETWORK INDICATORS AND WELL-BEING

- Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 4 Release 0
 - Study Sample: Age 65+ (n=27,396)
 - Network Type Derivation
 - K-Means Cluster Analysis
 - Hierarchical Regressions
 - Network Types and Well-being (CASP-12)
 - Control Vars: Background Characteristics, Functional Health and Country
- All analyses performed on weighted data

Network Types – Cluster Analysis

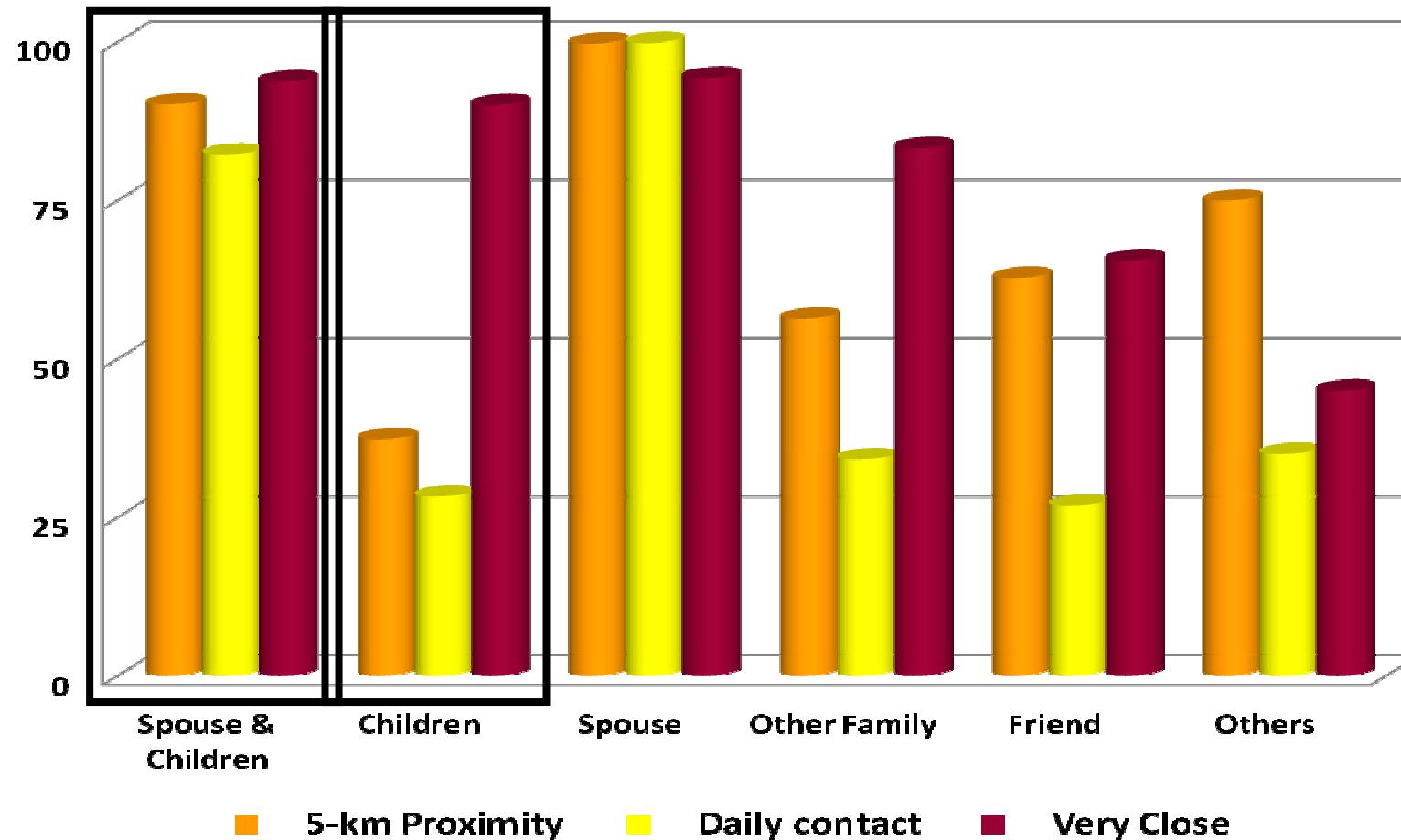
- **Cluster Analysis Variable Scale**
 - **Percent of Social Network (0-100%)**
- **Cluster Variables**
 - **5 Relationship Type Categories**
 - **Spouse; Children, Other Family, Friends, Others**
 - **Proximity – 5 km or less**
 - **Emotional Closeness - Very or Extremely Close**
 - **Frequency of Contact - Daily Contact**

Figure 1: Confidant network types among Europeans aged 65 and older by the relationship criterion variables: Percentages



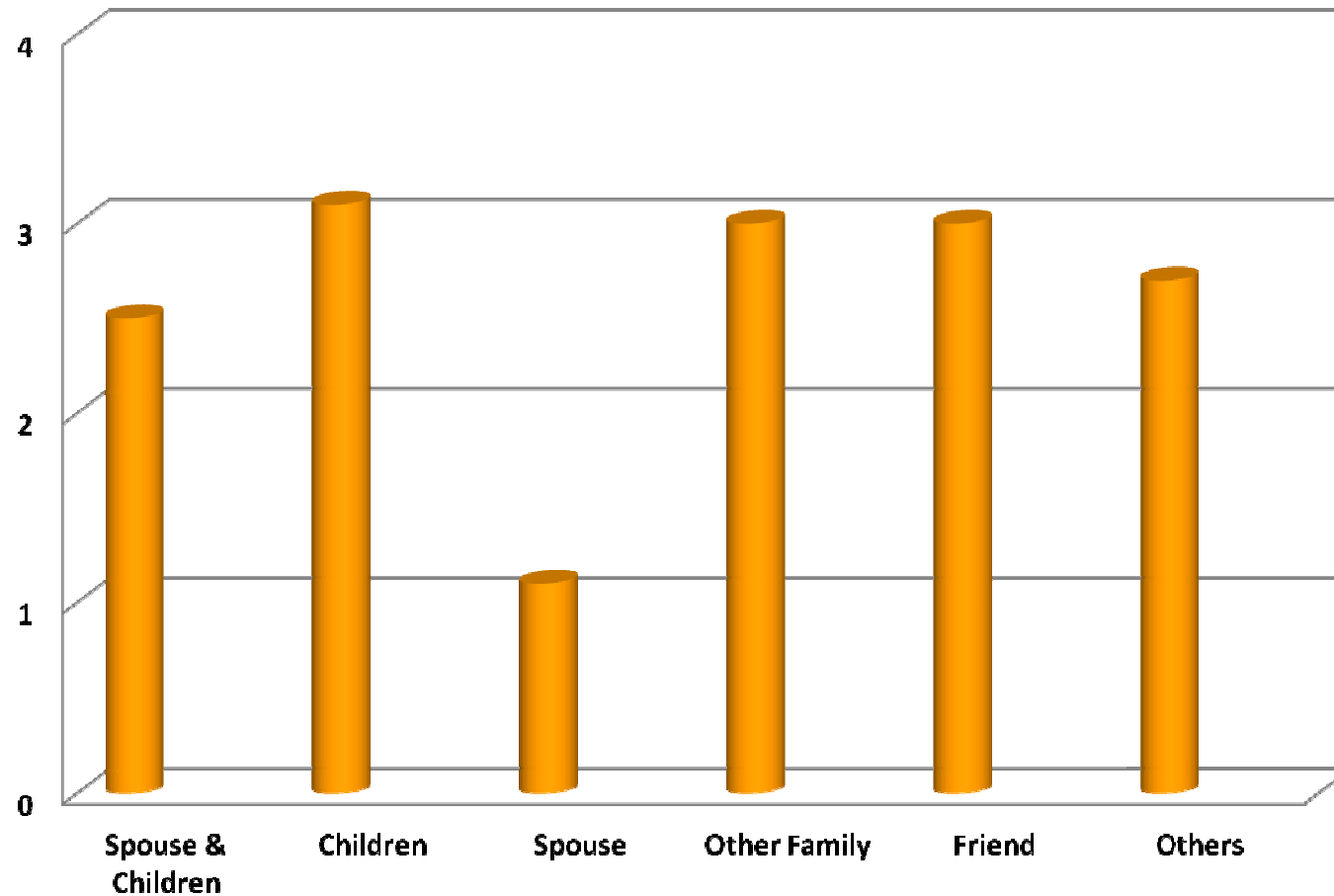
Litwin, H., and Stoeckel, K.J. (2013). Confidant Network Types and Well-Being among Older Europeans. The Gerontologist. First published online: June 7, 2013, DOI: 10.1093/geront/gnt056

Figure 2: Confidant network types among Europeans aged 65 and older by the interactional criterion variables: Percentages



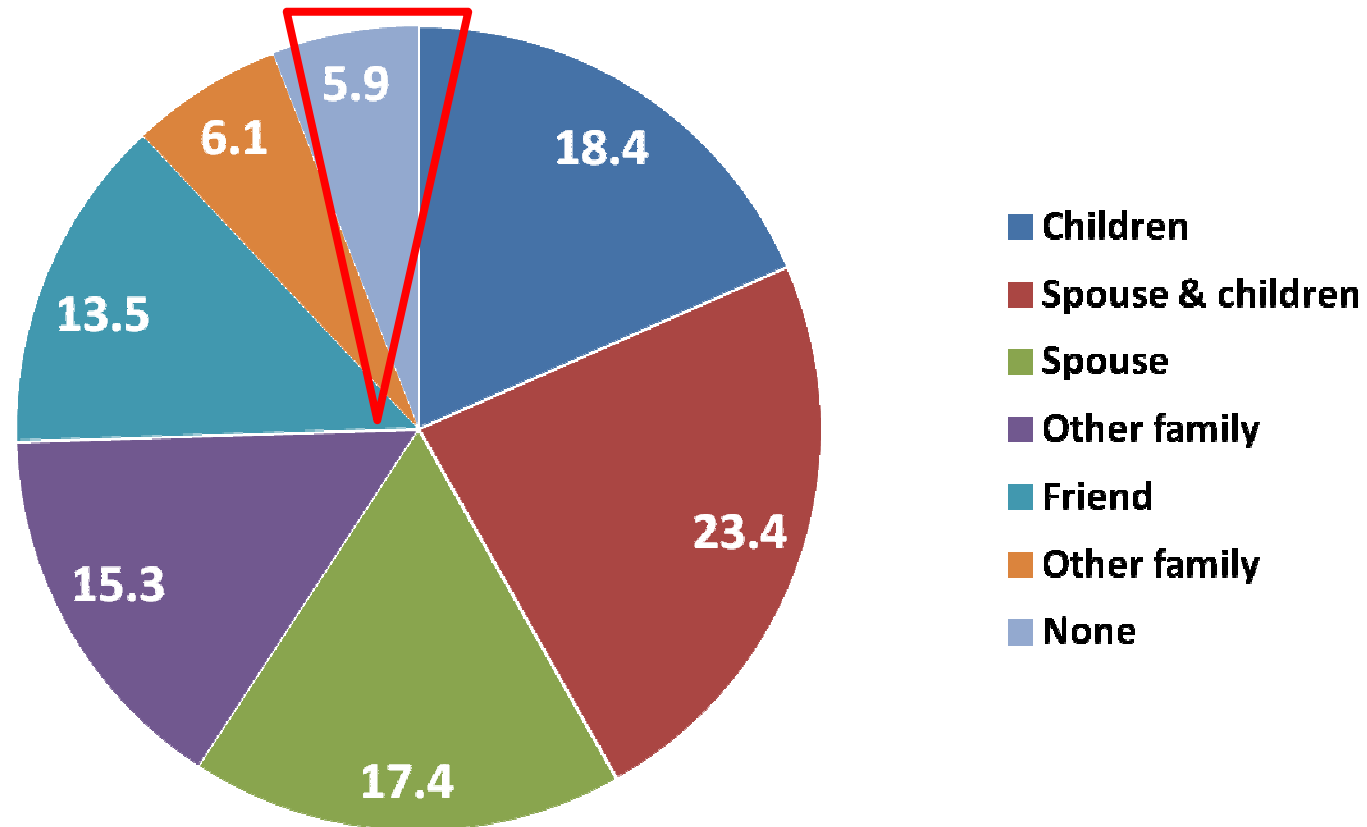
Litwin, H., and Stoeckel, K.J. (2013). Confidant Network Types and Well-Being among Older Europeans. The Gerontologist. First published online: June 7, 2013, DOI: 10.1093/geront/gnt056

Figure 3: Confidant network types among Europeans aged 65 and older: Network size



Litwin, H., and Stoeckel, K.J. (2013). Confidant Network Types and Well-Being among Older Europeans. The Gerontologist. First published online: June 7, 2013, DOI: 10.1093/geront/gnt056

Figure 4: Confidant network types among Europeans aged 65 and older: Frequency Distribution



Litwin, H., and Stoeckel, K.J. (2013). Confidant Network Types and Well-Being among Older Europeans. The Gerontologist. First published online: June 7, 2013, DOI: 10.1093/geront/gnt056

**Table 6: Confidant Network Type Correlates of Well-Being:
Weighted OLS Hierarchical Regressions (Betas)**

Network type^A	Model 1	Model 2^B	Model 3^C
Spouse & children	−.062***	.019*	.032***
Children	.075***	.038***	.053***
Spouse	.039***	.055***	−.008
Other family	.037***	.027**	.028***
Friend	.129***	.073***	.034***
Other	−.047***	−.058***	−.024**
No network	−.127***	−.106***	−.082***
R²	.016	.169	.368
Δ R²	---	.153	.198

*** $p < .05$. ** $p < .01$. *** $p < .001$.**

A Effect coding; B Adjusted for country: C Adjusted for country, age, gender, marital status, education and mobility

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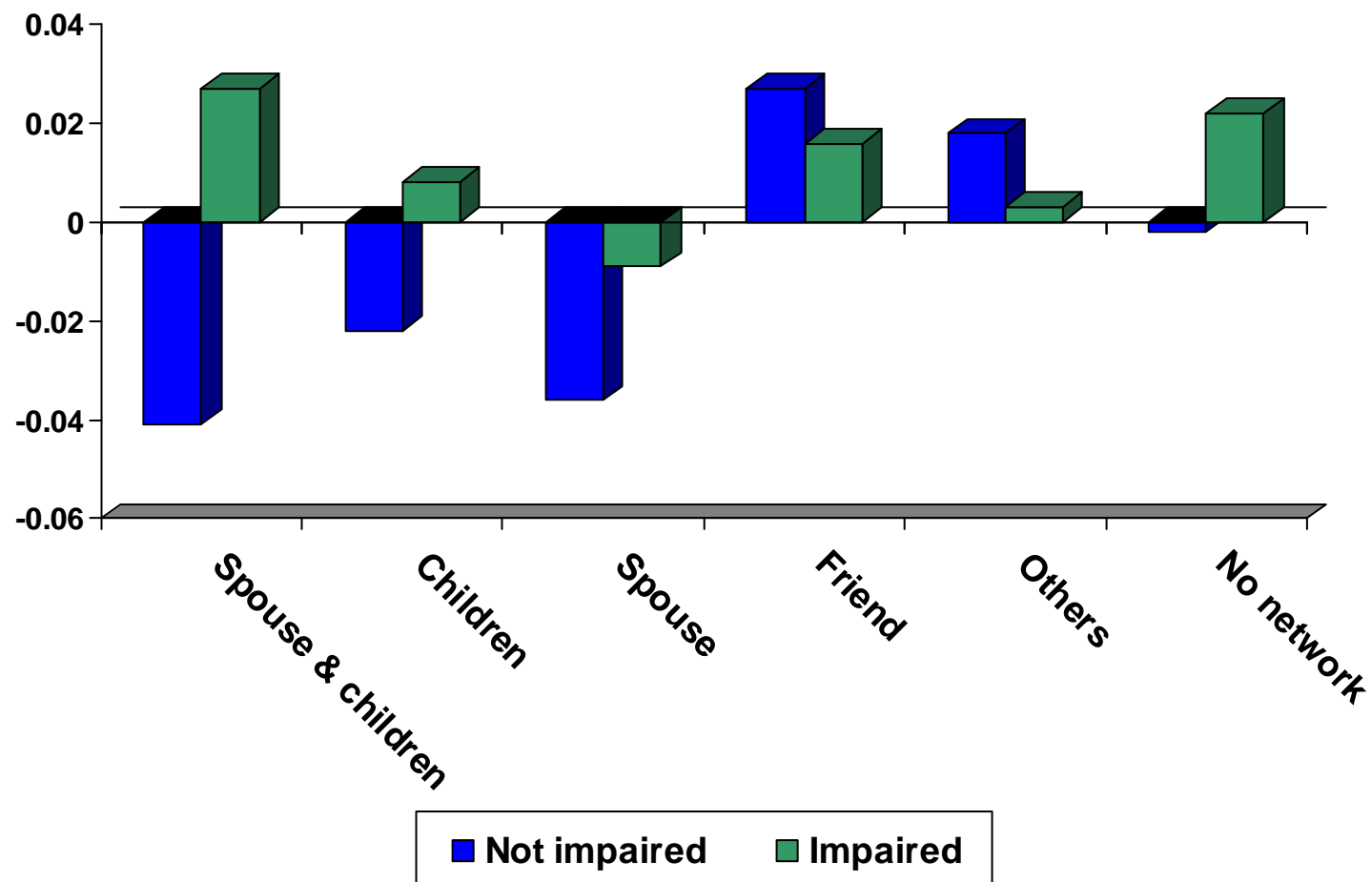
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The Divergent Role of Social Network Type in the Association between Mobility Impairment and Depressive Symptoms

- ❖ **The main aim was to examine the inter-relationship between mobility impairment, network type and depressive symptoms among older Europeans.**
- ❖ **Hypotheses:**
 - 1) **Social network types are differentially related to depressive symptoms**
 - 2) **Social network types are differentially related to mobility impairment**
 - 3) **The relationship between mobility impairment and depressive symptoms varies by network type.**

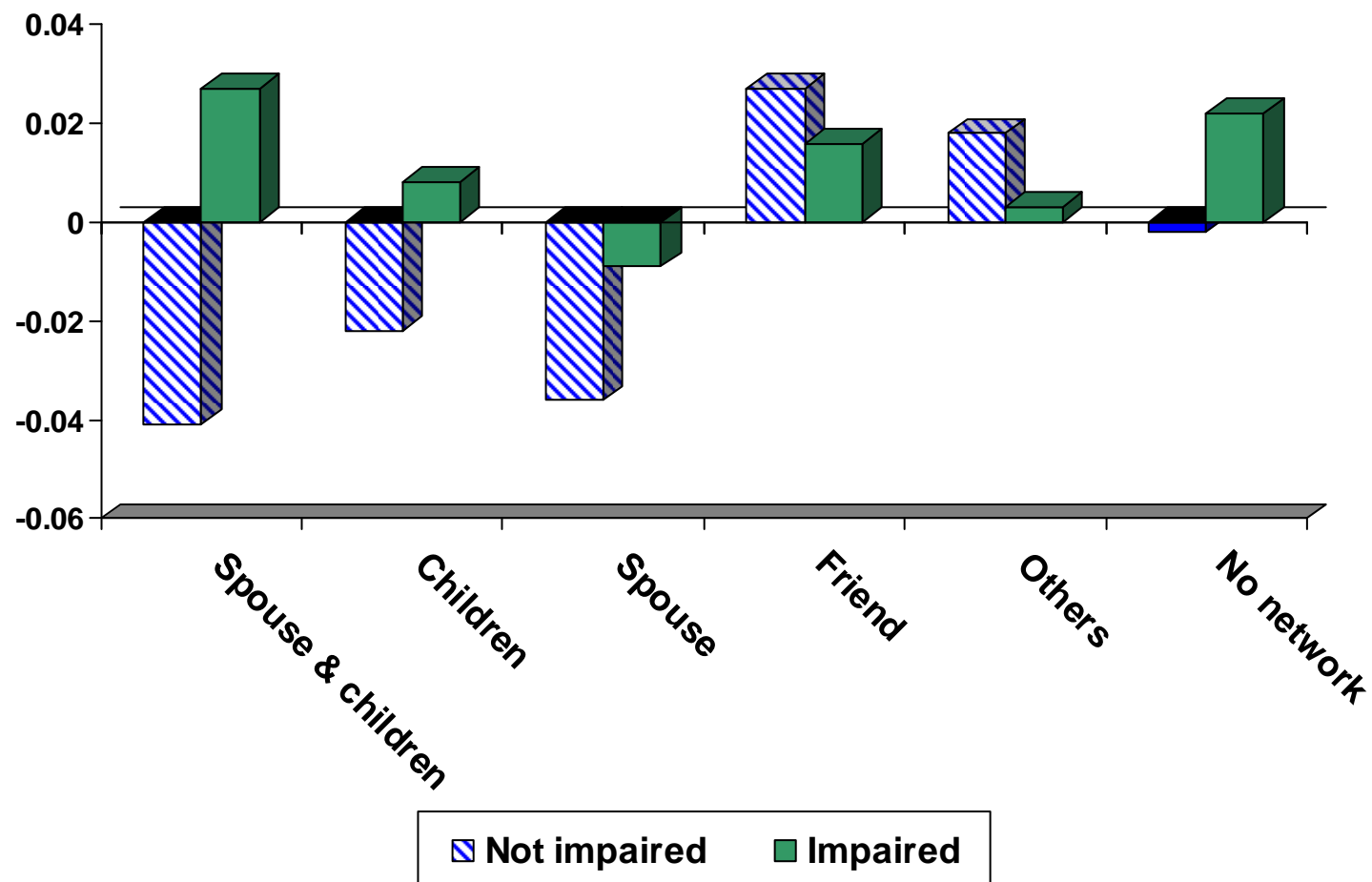
Figure 1: Confidant network type and depressive symptoms by mobility impairment: Beta coefficients



N=26,420; Reference category: Other family network type

Adjusted for age, gender, marital status, education, cognition and country

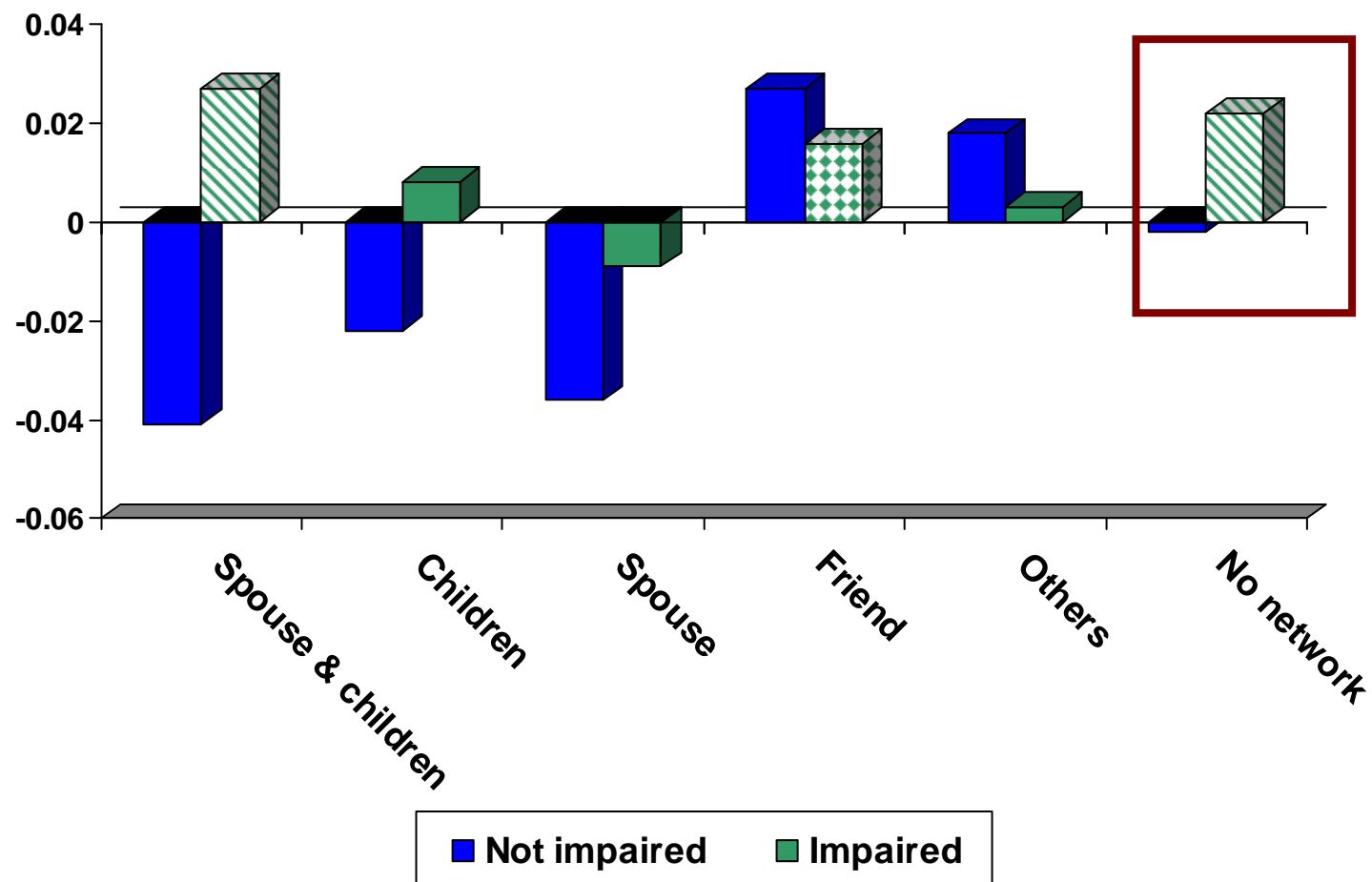
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Figure 1: Confidant network type and depressive symptoms by mobility impairment: Beta coefficients



N=26,420; Reference category: Other family network type

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SO.....

Social networks do indeed matter, but their effects vary according to:

- **How the networks are measured**
- **The context in which they function**
- **The state and the status of the persons whose networks we are addressing**

It is necessary, therefore, to deepen our study of social networks, and to disentangle their structure, their function and their effects in different contexts and among different people.

SHARE provides a unique opportunity to do so.

I encourage all SHARE users to take advantage of the unprecedented comparative data base that SHARE offers, in order to advance our understanding of the interpersonal milieus of older people and of their importance for public policy.