



Caregiver needs analysis for product development of an assistive technology system in dementia care

**Alzheimer Europe Conference, St. Julian's, Malta
Saturday, 12 October 2013**

Megges Herlind, Jankowski Natalie, Peters Oliver

Assistive technology systems in dementia care

Is it possible to support caregivers and people with dementia with assistive technology systems?

- Using the high potential of technology

(Kinney et al, 2003; Review of Topo, 2008)

- No development process without user participation

(e.g. Bühler, 2001; Sarodnick & Brau, 2006; Jönsson, 2006; Zerth & Macco, 2012)

User participation in product development

Aims of user participation:

- support the product development process
- optimize the user-designer interface
- following user centered design
- collecting important development implications

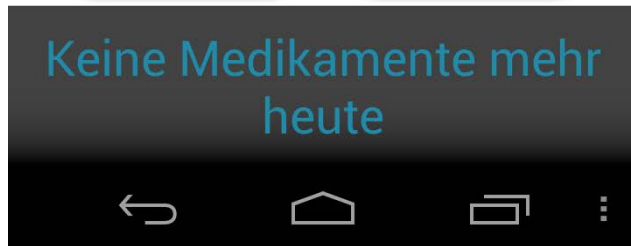
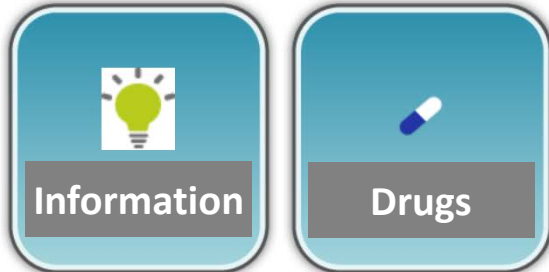
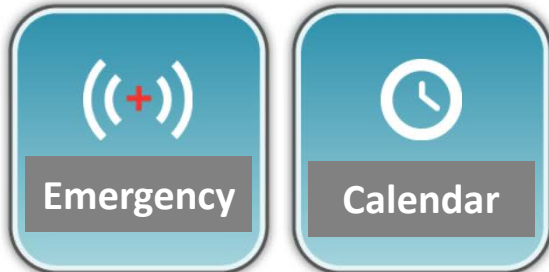
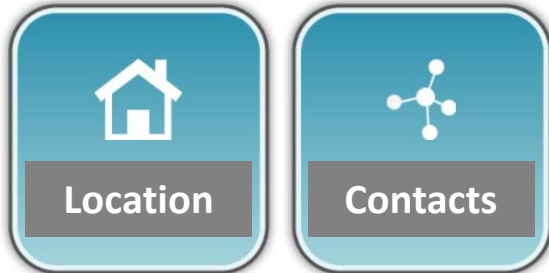
Research Question

**Do wishes and needs of caregivers
correlate with
different stress-factors and resources ?**

Hypothese

**Caregiver burden
does influence wishes and needs concerning an
assistive technology system.**

Digital Care Support Prototype I



- ## Functions
- Security
 - Organisation
 - Networking

Sample

- 20 caregivers of people with dementia
- 10 husbands, 5 wives and 5 daughters
- Mean age: 63.8 (MIN = 45, MAX = 82)
- Highly educated

Operationalisation

Independent Variables - Caregiver burden

- Zarit Burden Interview (Zarit et al., 1986);
M (SD) = 13.02 (7.57)
- Dementia duration
M (SD) = 3.55 (1.23)
- Health status
M (SD) = 1.60 (0.75)
- Living with PwD
Yes = 16, No = 4

Operationalisation

Dependent Variables - Functional needs

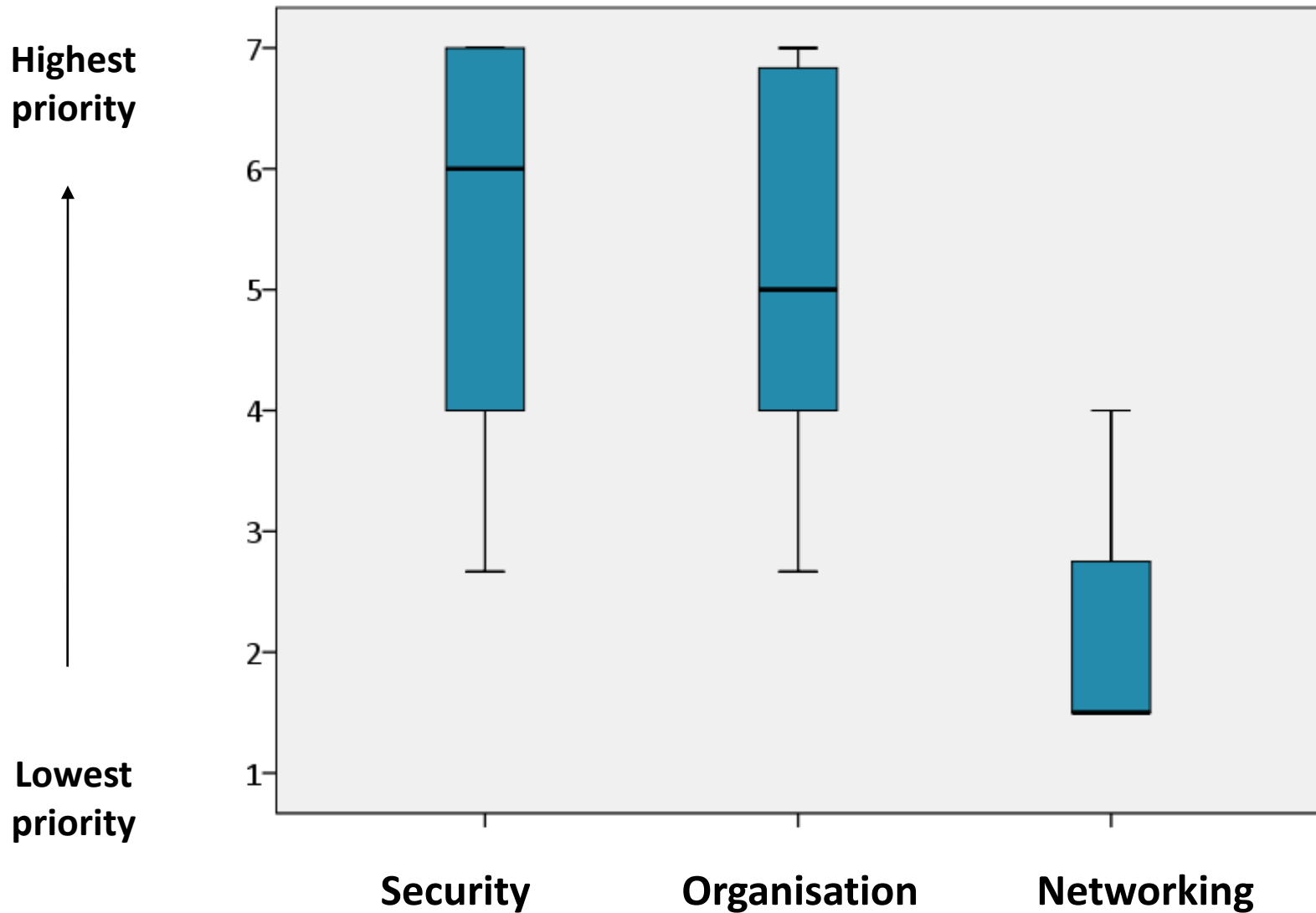
- Rating of functions
→ Usefulness and suitability for daily use
M (SD) = 50.20 (6.16)
- Ranking of functions

Operationalisation

Dependent Variables - Functional needs

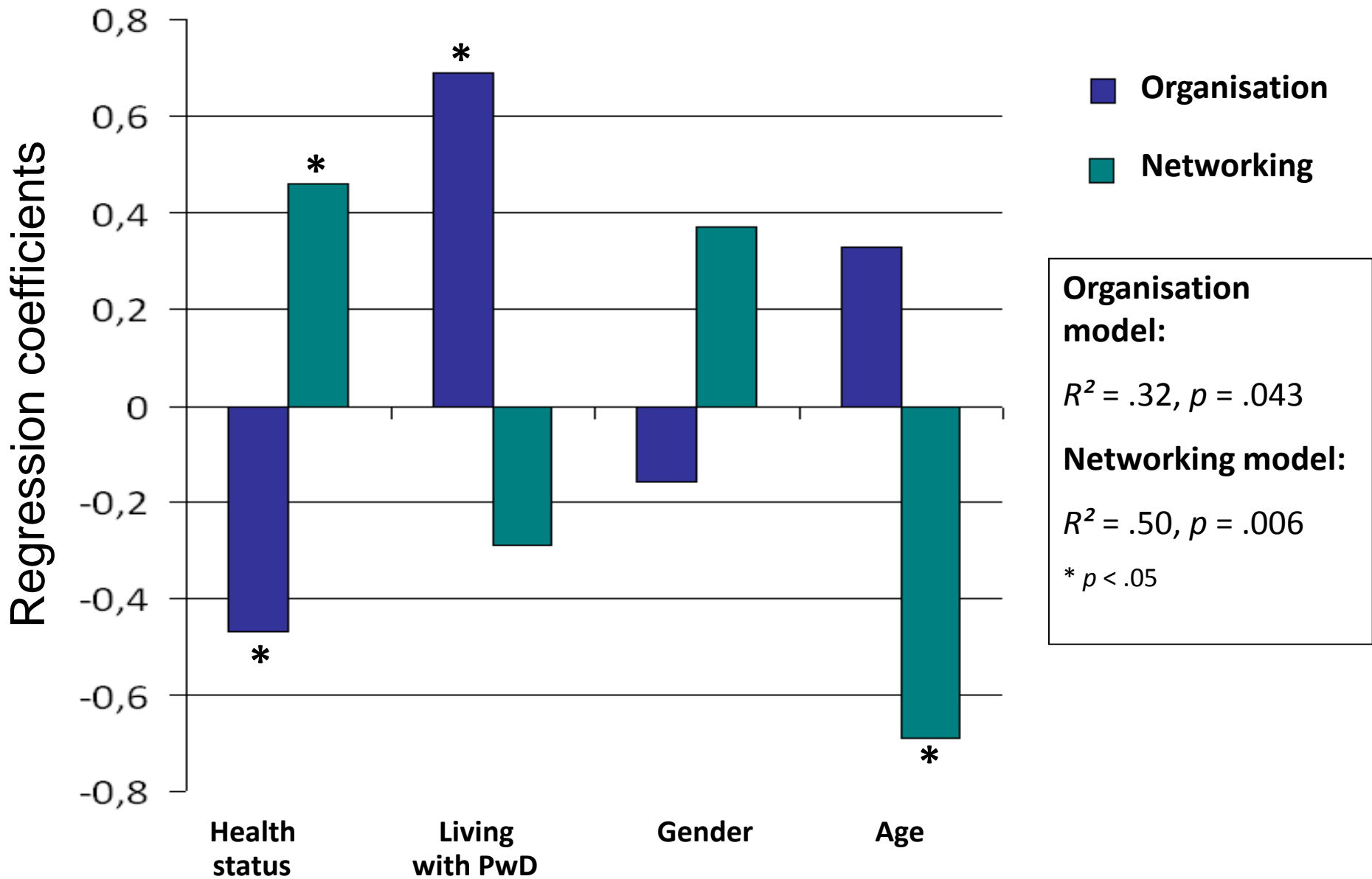
- Rating of functions
→ Usefulness and suitability for daily use
M (SD) = 50.20 (6.16)
- Ranking of functions

Ranking of functions; N = 20



Correlations	Ranking Security	Ranking Networking	Ranking Organisation	Rating of functions
Gender		+		
Age		+		
Technology commitment				
Zarit Burden Interview				
Health status	+		+	+
Dementia duration				
Living with PwD	++		+	

+ p > .05, ++ p > .01



Discussion

Caregiver burden

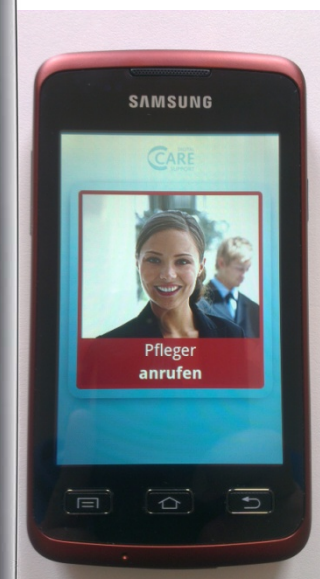
does influence wishes and needs concerning an assistive technology system.

- Health status, living with PwD and age
does influence organasitional and networking needs
- Features concerning security are not influenced
(also Landau et al., 2010; Rialle et al., 2008; Rosenberg et al., 2012)

Conclusion

- High potential of assistive technology solutions is recognized by all of the caregivers, which is shown by the overall positive evaluation of the system
- **“No good product without user participation“**

Digital Care Support Prototype II



2VW2010

Thank you!

Contact:

Herlind Megges

Department of Psychiatry, Charité, Berlin

herlind.megges@charite.de

References

- Bühler, C. (2001). Empowered participation of users with disabilities in R&D projects. *Inter-national Journal of Human-Computer Studies*, 55(4), 645–659.
- Jönsson, B. (2006). *Design side by side*. Lund: Studentlitteratur.
- Kinney, J. M., Kart, C. S., Murdoch, L. D., & Conley, C. J. (2004). Striving to Provide Safety Assistance for Families of Elders. *Dementia*, 3(3), 351–370.
- Krüger-Brand, H. E. (2012). Altersgerechte Assistenzsysteme: Zentraler Blickpunkt der Forschung. *Dtsch Arztebl International*, 109(6), A-244.
- Landau, R., Auslander, G. K., Werner, S., Shoval, N., & Heinik, J. (2010). Families' and Professional Caregivers' Views of Using Advanced Technology to Track People With Dementia. *Qualitative Health Research*, 20(3), 409–419.
- Laube, S. (2010). Barrieren der Inanspruchnahme entlastender formeller Hilfsangebote - insbesondere der Angehörigenberatung - durch pflegende Angehörige von Demenzerkrankten. Schmalkalden: Nachwuchswissenschaftlerkonferenz.
- Lewis, M. L., Hobday, J. V., & Hepburn, K. W. (2010). Internet-Based Program for Dementia Caregivers. *American Journal of Alzheimer's Disease and Other Dementias*, 25(8), 674–679.
- Rialle, V., Ollivet, C., Guigui, C., & Herve, C. (2008). What do family caregivers of Alzheimer's disease patients desire in smart home technologies? *METHODS OF INFORMATION IN MEDICINE*, 47(1), 63–69.
- Rosenberg, L., Kottorp, A., & Nygård, L. (2012). Readiness for Technology Use With People With Dementia. *Journal of Applied Gerontology*, 31(4), 510–530.
- Topo, P. (2008). Technology Studies to Meet the Needs of People With Dementia and Their Caregivers: A Literature Review. *Journal of Applied Gerontology*, 28(1), 5–37.
- Zarit SH, Todd PA, & Zarit JM. (1986). Subjective burden of husbands and wives as caregivers: a longitudinal study. *Gerontologist*. 2003 August; 43(4): 521–531., 26(3), 260–266.
- Zerth, J., & Macco, K. (2012). Komitee für Zukunftstechnologien - die positiven Wechselwirkungen einer langfristigen Nutzereinbindung. In BMBF, VDE e.V., AAL Association, & VDE/VDE/IT (Eds.), *Technik für ein selbstbestimmtes Leben (AAL 2012)* .