A dynamical framework for understanding changes and stability in the use of technologies by independent-living seniors

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PAPER

Acceptance and Use

S.T.M PEEK, K.G. LUIJKX, H.J.M. VRIJHOEF, M.E. NIEBOER, S. AARTS, C.S. VAN DER VOORT, M.D. RIJNAARD, E.J.M. WOUTERS. A dynamical framework for understanding changes and stability in the use of technologies by independent-living seniors. Gerontechnology 2018;17(Suppl): 60s; https://doi.org/10.4017/gt.2018.17.s.060.00 **Purpose** If technologies are to support aging in place, then it is important to develop fundamental knowledge on what causes stability and changes in the use of technologies by seniors. However, longitudinal studies on the use of technologies that have been accepted into the home (i.e., post implementation use) are very scarce[1]. Many factors potentially influence post-implementation use, including life events, age-related decline, changes in personal goal orientation, and various social influences[2,3]. The goal of this study was to better understand changes and stability in the use of technologies by independent-living seniors, by using a dynamical systems theory (DST) approach. DST has recently generated interest as a series of principles and tools for studying change and equilibria[4]. **Method** A longitudinal qualitative field study was conducted involving home visits to 33 community-dwelling seniors in the Netherlands, on three occasions (2012-2014). Interviews were held on technology usage patterns, including reasons for stable, increased, declined and stopped use. Technologies were included if they required electric power in order to function, were intended to be used in or around the home, and could support activities of daily living, personal health or safety, mobility, communication, and physical activity. Thematic analysis was employed, using constant case comparison to better understand dynamics and interplay between factors. **Results & Discussion** A set of six interrelated factors was closely linked to the frequency of technology use: emotional attachment, need compatibility, cues to use, proficiency to use, input of resources, and support. Additionally, disruptive forces (e.g., social influences, competition with alternative means, changes of personal needs) could induce change by affecting these six factors. Furthermore, technology use was in some cases more resilient to disruption than in other cases. Findings were accumulated in a new framework: Dynamics In Technology Use by Seniors (DITUS). Similar to aging, the use of technologies by older people is complex, dynamic and personal. Periods of stability and change both occur naturally. The DITUS framework can aid in understanding both stability and instability of use.

References

1. Peek STM, Wouters EJM, van Hoof J, Luijkx KG, Boeije HR, Vrijhoef HJM. Factors influencing acceptance of technology for aging in place: A systematic review. Int J Med Inform 2014;83:235–248
2. Chen K, Chan AHSS. A review of technology acceptance by older adults. Gerontechnology 2011;10:1–12
3. Luijkx K, Peek S, Wouters E. Grandma, You Should Do It — It's Cool. Older Adults and the Role of Family Members in Their Acceptance of Technology. Int J Environ Res an Public Heal 2015;12:15470–15485
4. Butner J. Dynamical Systems Theory. In: Baumeister RF, Vohs KD, editors. Encycl. Soc. Psychol., Thousand Oaks, CA: SAGE Publications; 2007, p. 272

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