THE ROLE OF COGNITIVE AGE AS PREDICTOR OF INDIVIDUAL DIFFERENCES AND USE OF E-HEALTH BY THE ELDERLY

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Abstract
eHealth initiatives are constantly evolving to support consumers in taking active control of their health and well being through access to health information via the Internet. Although particularly elderly people could benefit from eHealth, they often resist using new technologies. However, research indicates that elderly cannot be considered as a homogenous group. In this regard, prior research considers three individual IT-related traits, namely computer anxiety, personal innovativeness in IT, and computer self-efficacy as important determinants influencing individuals’ technology acceptance and use. Especially computer self-efficacy has been found to play a key role in elderly’s technology acceptance decisions. However, as it is commonly assumed that older people think they are too old to use novel technologies, it is suggested they have expectations about their abilities and their age perceptions that may be interrelated. Consequently, we seek to explore the role of cognitive age in individual IT-related traits and their effect on the use of eHealth by the elderly.

Keywords: eHealth, Older adults, IT-related traits, Cognitive age
1 Introduction

Electronic Health (eHealth) refers to “health services and information delivered or enhanced through the Internet or related technologies” (Eysenbach 2001, p. 1). As such, eHealth becomes increasingly consumer-oriented aiming to enable consumers taking active control of their health and well-being by making health resources accessible via the Internet (Agarwal et al. 2010; Marziali 2009; Paré et al. 2007; Rozenkranz et al. 2013). In its most basic form, eHealth offers information about diseases, symptoms, and treatment options (Rozenkranz et al. 2013). Consequently, the Internet has become a major source for health information and decision support (Kummervold et al. 2008). For instance, in 2009, 61% of the adults in the United States used the Internet to access information about their illnesses and treatment options (Fox and Jones 2009). In Germany, the number of people seeking health information in the Internet nearly doubled from 34% in 2006 to 58% in 2013 (EUROSTAT 2014).

In parallel to that, most developed economies face a significant shift in their age structure through steady increase of elderly people (OECD 2007; OECD 2011; OECD 2013). As diseases, such as chronic illnesses, usually increase with age, the demographic change poses a tremendous challenge for healthcare systems (Robert-Koch-Institut 2006). As eHealth offers potential in supporting individuals in their health, elderly people seem to be an ideal target group in order to improve their well-being while saving resources in the healthcare system (Eysenbach 2001). Unfolding the benefits and potentials eHealth provides to the elderly is, however, contingent upon the extent to which older adults make use of such eHealth offerings. As early as in 2002, Marquié et al. (2002, p. 273) stated: “The integration of elderly people in our modern societies depends increasingly on their ability to master new technologies, especially computer technologies”. Although it is often assumed that elderly tend to resist accepting new information technology (IT) and possess anxiety towards novel technologies, there are likewise older adults interested in these technologies and seek to make use of them (Tams et al. 2014; Waycott et al. 2013). Indeed, as Niehaves and Plattfaut (2014) conclude in a recent study on Internet use by older adults, ‘the elderly’ cannot be considered as a homogenous group.

Individual differences in technology acceptance and use has become an important avenue for research (Agarwal and Prasad 1999). Despite basic demographic variables such as age, gender, education, or income, research increasingly considers IT-related traits as important differentiators and predictors of technology acceptance (Davis and Mun 2012; Maier 2012; Thatcher and Perrewe 2002). These IT-related traits commonly refer to computer anxiety, personal innovativeness in IT, and computer self-efficacy (Davis and Mun 2012; Maier 2012; Thatcher and Perrewe 2002). Recent evidence indicates that computer self-efficacy (CSE) – a concept reflecting individuals’ judgments of being able to use a computer (Compeau et al. 1999; Compeau and Higgins 1995) – is a key predictor of Internet use of people aged 65 and above (Niehaves and Plattfaut 2011; Niehaves and Plattfaut 2014).

However, it is commonly assumed that older people think they are too old to use novel technologies (Brown 2002, p. 28), suggesting that older individuals possess a certain association between their perceptions of being able to use technologies (i.e. CSE) and judgements about their age.

While age is typically referred to chronological age that reflects the actual number of years lived (Hong et al. 2013; Tams et al. 2014), it does not “reflect the idiosyncratic meaning of this number to different individuals” (Hong et al. 2013, p. 122). In contrast, subjective age reflects an individual’s perception of how old she/he is (Gwinner and Stephens 2001; Wilkes 1992). It is argued that an individual’s behaviour is based on one’s perceived age rather than one’s chronological age (Barak and Schiffman 1981). Research indicates the presence of ‘new age elderly’ who perceive themselves as younger and differ from other elderly in greater self-confidence in making consumer decisions and greater ability to accept new products (Schiffman and Sherman 1991).

The concept of ‘cognitive age’ (Barak and Schiffman 1981) captures individuals’ judgements about their own age and is a frequently employed measure in psychology, marketing, and gerontology. Cognitive age is a self-assessed measure manifested in four dimensions: how old an individual feels,
looks, acts, and how ones’ interests are related to certain age groups (Barak and Schiffman 1981). Thus, the concept of cognitive age might expose heterogeneity of technology use behaviour within a chronological similar age group that would otherwise remain unexplored (Hong et al. 2013). Although the cognitive age has been largely ignored in information systems (IS) research (Hong et al. 2013), preliminary research indicates, for instance, that seniors perceiving themselves as younger indeed report heavier Internet use than their chronological contemporaries (Eastman and Iyer 2005). Preliminary research further indicates that major technology behavioural factors, such as outcome expectations, strongly vary for cognitive younger and older adults (Hong et al. 2013). Given that elderly people are a fast growing segment and the potentials eHealth holds for them, as well as the individual traits that might affect elderly’s perceptions and use of eHealth, the following research questions arise:

**RQ1:** Does cognitive age influence IT-related traits?

**RQ2:** Do these traits influence older adults’ intention to use eHealth?

The rest of the paper is structured as follows. Within the next chapter, we briefly outline the literature on individual IT-related traits with an emphasis of computer self-efficacy and introduce the concept of cognitive age. Subsequently, we propose our research model that explores elderly’s eHealth behaviour by focusing on how individual traits and cognitive age determine use of eHealth by the elderly. We then outline the next research steps to be taken and lay out our expected outcome and contribution.

## 2 Background

Researchers have found that certain individual traits tailored to the technology context influence how individuals perceive and use technology (Thatcher and Perrewe 2002). Within this section, we briefly outline the literature on these IT-related traits, whereby computer self-efficacy has been found to play a key role and, thus, deserves our primary attention. Next, we introduce the concept of cognitive age.

### 2.1 Focal trait: Computer self-efficacy

Self-efficacy is anchored in Bandura’s social cognitive theory (SCT) (Bandura 1982; Bandura 1997). The theory posits that personal and environmental factors, as well as behaviour reciprocally interact and influence each other (Bandura 1986; Bandura 1997). Self-efficacy (SE), defined as “the belief in one’s capability to organize and execute the courses of action required to manage prospective situations” (Bandura 1997, p. 2), is at the heart of SCT and acts as key determinant of behaviour (Bandura 1982; Bandura 1997). It is important to note, however, that SE is “concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses” (Bandura 1986, p. 391). SCT further argues that an individual’s belief to successfully execute a behaviour significantly impacts her/his expectations about the outcomes of performing the behaviour (Compeau et al. 1999). The concept of SE has been subsequently tailored to the information technology respectively computer context. As such, computer self-efficacy (CSE), defined as the “judgment of one’s capability to use a computer” (Compeau and Higgins 1995, p. 192), has been found to play a significant role in one’s perceptions and decisions to use technologies (Marakas et al. 1998; Thatcher et al. 2008). Compeau et al. (1999), for instance, revealed that CSE influences individuals’ technology use and influences their outcome expectations about a given technology. Further evidence supports relationships between CSE and ease of use perceptions (Agarwal et al. 2000; Venkatesh 2000). Within their comprehensive review, Marakas et al. (1998) identified a broad variety of environmental, cognitive and behavioural influences on CSE, such as training, and experience, but likewise individual factors such as age, gender, emotional states, or personality. Empirical evidence demonstrated that elderly people generally have less CSE compared to younger individuals (e.g. Czaja et al. 2006; Mead et al. 2000). However, by focusing explicitly on older adults, Lam and Lee (2006) examined Internet adoption decisions of elderly people and revealed that CSE and outcome expectations are significant predictors of older peoples’ Internet usage intention. Equally, Niehaves and Plattfaut (2014) found self-efficacy to be the strongest
determinant of Internet usage behaviour of people aged 65 and above. Albeit these preliminary evidences, little is known how specifically older adults CSE is shaped (Tams et al. 2014).

2.2 Traits determining computer self-efficacy

Two important, yet contrary, individual IT-specific traits have been shown to significantly determine CSE: computer anxiety and personal innovativeness in IT (Davis and Mun 2012; Maier 2012).

Computer Anxiety (CA) reflects the tendency of individuals to be uneasy, apprehensive or fearful when using computers, such as data losses and other mistakes by the user (Heinssen et al. 1987; Parasuraman and Igbaria 1990). It is argued that CA is a dynamic trait influenced by dispositional and environmental factors (Marakas et al. 2000; Thatcher and Perrewe 2002). In a review of two decades of research on CA, Powell (2013) found a variety of these antecedents. The broad trait of neuroticism and other emotional forms of anxiety have been found to be positively related to one’s CA. In contrast, openness to experience, computer ownership, training, and experience or use are significant antecedents negatively related to CA. Regarding the consequences of CA on performance (e.g. computer task completion time) and use intentions by individuals, ambiguous results have been reported. CA further commonly correlates with key constructs such as attitude, perceived ease of use, and perceived usefulness. Thus, individuals that tend to be fearful regarding computer usage, often pose higher negative attitudes towards computers, have less ease of use perceptions and perceive computers as less useful. Moreover, the relationship between CA and CSE has been consistently reported to be negatively associated (Compeau and Higgins 1995; Marakas et al. 1998; Thatcher and Perrewe 2002; Wagner et al. 2010), indicating that individuals with higher anxiety tend to pose decreased self-beliefs in their ability to use a computer. Seen from an opposite direction, Durnell and Haag (2002) reported significant relationships between lower CA, higher CSE, and Internet use. Considering CA’s relevance for elderly people’s computer usage, CA was commonly found to increase with higher age (Powell 2013).

Personal Innovativeness in IT (PIIT) is defined as “the willingness of an individual to try out any new information technology” (Agarwal and Prasad 1998b, p. 206). PIIT has its roots in innovation diffusion theory (Moore and Benbasat 1991; Rogers 2003) and reflects a domain-specific derivate of an individual’s broad personality trait ‘openness to experience’ (Powell 2013). In a broad sense, an individual’s innovativeness reflects the willingness to change and to take risks (Hurt et al. 1977). In doing so, such individuals are rather likely to engage in innovative behaviour and tend to adopt novel technologies comparatively earlier (Agarwal and Prasad 1998a). Thus, PIIT is considered as a rather stable trait (Agarwal and Prasad 1998b; Thatcher and Perrewe 2002). Significant antecedents of PIIT have been found in broad personality traits such as ‘resistance to change’ and ‘openness to experience’ (Nov and Ye 2008). As such PIIT reflects a certain contrary position to anxiety and tends to be significantly negatively correlated with CA (Thatcher and Perrewe 2002). Thus, individuals high in PIIT perceive computers as less fearful. PIIT has been furthermore found to explain perceived usefulness, compatibility, and perceived ease of use (Agarwal and Prasad 1998b; Lewis et al. 2003). Relationships between PIIT and behaviour are demonstrated to be directly associated, and also mediated or moderated by characteristics such as usefulness, ease of use, or compatibility (Jackson et al. 2013; Yi et al. 2006). Moreover, it is positively associated with CSE (Thatcher and Perrewe 2002). However, little is known about PIIT and age, as well as about its on elderly’s technology acceptance and use.

2.3 Cognitive age

Although age is considered as a key demographic variable in IS research (Venkatesh et al. 2003, p. 469), age as a concept has received scant attention from the IS community (Hong et al. 2013). Age is commonly measured by chronological age, an objective conceptualization of life length measuring the number of years since birth (Hong et al. 2013; Tams et al. 2014). However, chronological age has been regarded as problematic for research interested in age-related research, especially research exam-
ining behavioural patterns of older adults (Barak and Schiffman 1981). Chronological age does not “reflect the idiosyncratic meaning of this number to different individuals” (Hong et al. 2013, p. 122).

Research in psychology, marketing and gerontology, consequently questioned the adequacy of chronological measures to investigate human behaviours and employed self-perceived age measures (Barak and Schiffman 1981; Hagestad and Neugarten 1976; Schiffman and Sherman 1991; Sherman et al. 2001). Cognitive age as a subjective perception differs from chronological age in that an individual may feel younger or older (Barak and Schiffman 1981). Cognitive age is reflected in four dimensions: (1) how old an individual feels, (2) how old an individual looks, (3) how an individual does things that are preferred by people of a certain age group, and (4) how similar an individual perceive her/his interests to people of a certain age group (Barak and Schiffman 1981; Johnson 1996).

Prior research regularly demonstrated discrepancies between chronological and cognitive age, indicating that older adults tend to feel younger than their chronological age and such tendencies amplify when individuals get older (Kastenbaum et al. 1972; Kaufman and Elder 2002). Schiffman and Sherman (1991, p. 187) describe ‘new-age elderly’ as those who “perceive themselves as younger in age and outlook, they feel more self-confident and in control of their lives, and they are less concerned with the accumulation of possessions and more involved in seeking novel experiences, personal challenges, and new adventures”. They further state: “Age is revealing itself to be more a state of mind than a physical state” (Schiffman and Sherman 1991, p. 188). In similar vein, Mathur et al. (1998) revealed that new-age elderly are more decisive, feel more control in their lives, and had greater interests in learning new things, as well as greater interest in computers (Mathur et al. 1998).

Cognitive age is becoming increasingly the measurement of choice in various research settings such as organizational behaviour, psychology, marketing, and gerontology (Gwinner and Stephens 2001; Hong et al. 2013). Early evidence suggests that cognitive age may predict one’s behaviour better than chronological age (Smith and Moschis 1984) and cognitive age has been positioned to predict different attitudinal and behavioural variables (Gwinner and Stephens 2001). For instance, happiness, life satisfaction, self-confidence, and self-esteem have been found as consequences of cognitive age (Gwinner and Stephens 2001), and likewise behavioural consequences such as participation in cultural activities, consumption orientation, TV watching, or exploratory shopping behaviour (Goulding and Shankar 2004; Gwinner and Stephens 2001; Sherman et al. 2001).

In the context of technology use, research on cognitive age is rather scant. Although early research revealed that cognitive younger individuals reported heavier use of the Internet than cognitive older people (Eastman and Iyer 2005), the concept has been largely ignored in IS research (Hong et al. 2013). Hong et al. (2013) reviewed 256 articles on acceptance and use of the leading IS outlets; in all cases, age was measured as chronological age (Hong et al. 2013). In their study, Hong et al. (2013) reported that cognitive younger and older individuals exhibit strong differences on major technology acceptance variables. Based on these findings, they concluded that “Cognitive age may help understand variances in IT-related phenomena that remain unexplained when relying on chronological age measures” (Hong et al. 2013, p. 124). In this vein, Tams et al. (2014, p. 292) state “aligning the conceptualization of age employed in a study with the phenomenon under investigation or the theory used to inform the study may yield more valid and interesting finding”.

3 Hypotheses development

Given the evidences that elderly people cannot be considered as homogenous group in their IT behaviour and that individual traits can play an important role in elderly’s IT acceptance and use (Niehaves and Plattfaut 2014), as well as recent indications that cognitive age may unravel heterogeneity in otherwise homogenous groups, it is worth investigating whether cognitive age similarly affects individual traits and how these traits influence eHealth use by the elderly. Our proposed research model is depicted in Figure 1 below. We first outline how social cognitive theory (SCT) and IT-related traits predict eHealth acceptance of older adults. We subsequently hypothesize influences of cognitive age.
**Research model.**

**Behavioural Intention to Use eHealth (BI)** serves as dependent variable of our research model. In our study, BI is defined as an individual’s intention to use health information technologies.

Following the argument of social cognitive theory (SCT) and recent research on elderly’s Internet use, we argue that elderly’s computer self-efficacy (CSE) and outcome expectations are the primary determinants of their eHealth use (Compeau et al. 1999; Lam and Lee 2006).

**Outcome Expectations (OE)** are defined as an individual’s perceived likely consequences how using eHealth will positively impact her/his health status and well-being (adapted from Compeau and Higgins 1995). The impact of outcome expectations on behaviour (i.e., eHealth use) are central arguments of social cognitive theory (Compeau et al. 1999). Individuals are more likely to engage in behaviour, which is believed to result in favourable consequences (Compeau and Higgins 1995). The positive influence of outcome expectations on behaviour has been found in a variety of research settings (Davis et al. 1989; Hill et al. 1987; Thompson et al. 1991), including Internet adoption of older adults (Lam and Lee 2006; Niehaves and Plattfaut 2014). We hypothesize:

**H1**: Elderly individuals demonstrating higher eHealth OE will pose a higher BI.

**Computer Self-Efficacy (CSE)** is defined as individual’s judgment about her/his capability to use computers (Compeau and Higgins 1995). Self-efficacy is at the heart of social cognitive theory, which argues that “the outcomes one expects derive largely from judgments as to how well one can execute the requisite behaviour” (Bandura 1978, p. 241). Thus, if one has higher beliefs in her/his abilities to use a computer (i.e. CSE), one is more likely to expect positive outcomes from computer her/his computer use (Compeau et al. 1999). In addition, CSE itself has often found to be a direct predictor of use behaviour (Compeau et al. 1999; Compeau and Higgins 1995). In the context of older adults, empirical evidence indicates that as older adults progress in their skills (e.g. through training), they demonstrate higher CSE and are more likely to engage in online activities (Lam and Lee 2006). Thus, it is demonstrated that older adults’ CSE evolves a direct influence on usage intentions (Lam and Lee 2006; Niehaves and Plattfaut 2011; Niehaves and Plattfaut 2014). We hypothesize:

**H2a**: Elderly individuals demonstrating higher CSE will pose higher OE.

**H2b**: Elderly individuals demonstrating higher CSE will pose higher BI.

Research frequently demonstrates that older individuals have less CSE compared to younger people. However, elderly individuals younger in cognitive age (i.e., ‘new-age elderly’) are characterized by greater self-confidence and higher willingness to change (Sherman et al. 2001). Cognitively younger elderly seek an ‘internal locus of control’ (Sherman et al. 2001). As such, CSE reflects abilities to be self-confident in new experiences and likewise the feeling of having control over unfamiliar situations in computer interactions. Thus, we posit:

**H2c**: Elderly individuals younger in cognitive age will demonstrate higher CSE.

**Computer Anxiety (CA)** refers to feelings of apprehension and anxiety of an individual towards computers. According to social cognitive theory, individuals’ emotional arousal and physical reactions...
partially determine one’s judgments about her/his capabilities to successfully cope with the given situation (Bandura 1982; Bandura 1986; Bandura 1997). Individuals with higher anxieties towards computers are found to be less likely to see themselves as capable to use a computer (Thatcher et al. 2007; Thatcher and Perrewe 2002). The negative relationship between CA and CSE also seems to hold true in the context of elderly’s Internet use (Lam and Lee 2006; Wagner et al. 2010). We hypothesize:

**H3a: Elderly individuals with higher CA will demonstrate less CSE.**

Prior research commonly indicates that age is a direct determinant of computer anxiety, whereby higher age often indicates higher computer anxiety. However, both, anxiety and cognitive age reflect psychological states, so that the relationship between CA and cognitive age might be even stronger than with chronological age (Wei 2005). Cognitive age has been found to be negatively associated with technology anxiety (Wei 2005), indicating that seniors younger in cognitive age have less anxiety towards new technologies. Based on these preliminary indications, we hypothesize:

**H3b: Elderly individuals younger in cognitive age will demonstrate lower computer anxiety.**

**Personal Innovativeness in IT (PIIT)** reflects the willingness of an individual to try out any new information technologies (Agarwal and Prasad 1998b). As outlined above, PIIT stems from an individual’s general trait of ‘openness’. Open individuals tend to engage more in innovative behaviour and tend to be more self-confident in executing new task and entering new situations (Kegerreis et al. 1970; Rogers 2003). Individuals high in PIIT tend to pose higher confidence in their capability to use a novel technology and perceive technologies as easier to use (Agarwal et al. 2000; Davis and Mun 2012; Wang et al. 2013). Older adults high in innovativeness felt more comfortable in using the Internet than those who scored low in innovativeness (Reisenwitz et al. 2007). We therefore hypothesize:

**H4a: Elderly higher in PIIT will demonstrate higher CSE.**

Little is known about the relationship between age and innovative behaviour of individuals (i.e. PIIT). In general, some prior research indicates that younger individuals are more likely to engage in exploratory behaviour and to make decisions that demand change in daily life situations (Botwinick 1978; Lambert-Pandraud and Laurent 2010; Lesser and Kunkel 1991). Rogers (2003), however, found inconsistent relationships between age and innovativeness among diffusion studies. In the context of cognitive age, Schiffman and Sherman (1991) argue that the ‘new-age elderly’ (i.e., those with younger cognitive age) substantially differ from their chronological counterparts in their willingness for new adventures and tend to be more innovative. In an early study in 2005, when the Internet was not that pervasive as today, cognitive younger individuals reported higher Internet use (Eastman and Iyer 2005), which suggests to reflect PIIT. Based on these indications, we assume:

**H4b: Elderly individuals younger in cognitive age will demonstrate higher PIIT.**

In addition, we seek to observe the role of individuals’ health knowledge and health need within our research model in a more exploratory manner, given that these two factors have been found in earlier studies but their influence has produced mixed results (Klein 2007; Wilson and Lankton 2004). We will consider gender and chronological age as control variables of our study.

### 4 Next steps and expected contribution

To test our research model, we are carrying out a quantitative study among elderly individuals. Albeit older adults are usually referred to people aged 65 and above (Eastman and Iyer 2005), in this study, we decrease the threshold to individuals aged 55 in line with prior studies investigating the role of cognitive age (Chua et al. 1990). This will allow us to make further comparisons between real (i.e., chronological age) and perceived (i.e., cognitive age) age of ‘middle-aged’, ‘elderly’, and ‘old’ individuals providing a richer understanding of their eHealth behaviour (Kaufman and Elder 2002).
Given the constant evolutions in eHealth, today’s available applications offer a broad spectrum of capabilities, ranging from information retrieval facilitating health knowledge (e.g., knowledge about symptoms and treatments) and health-related decision support (e.g., physician review platforms), health management (e.g., exercise reminders and diaries) to health data collection (e.g., personal health records, FitBit). Whereas seniors can build on preventive measures by keeping themselves informed with latest health information on the web or increase their well-being using exercise apps, they might likewise benefit from eHealth for treatment or other self-management purposes in acute scenarios (Or and Karsh 2009). Consequently, we seek to investigate a broad variety of eHealth technologies and how individuals react differently to these types based on our research model. As eHealth is expected to be beneficial for many older adults, our research is targeted at the general population.

However, access to the target group—especially to older ones—has been frequently shown to be difficult (e.g., Heart and Kalderon 2013) and using an online-survey might attract rather technology-savvy people causing potentially biased results. Therefore, we employ a convenience sampling method using a paper-and-pen based field survey approach that has been shown to be successfully in gathering data from the target group (e.g., Guo et al. 2013). Like other studies before (e.g., Chu et al. 2009), we collect data randomly at public places such as senior citizen centres, adult schools, and pedestrian zones.

We developed a questionnaire primarily based on established instruments and only slightly adapted the wordings to our research context. The instrument was pre-tested with the target group and research experts to improve wordings and comprehensiveness. Our measures are based on the following scales: items for behavioural intention and outcome expectations are taken from Venkatesh et al. (Venkatesh et al. 2003; Venkatesh et al. 2012) and adapted to our research context. Computer self-efficacy and anxiety is measured as by Compeau and Higgins (1995). Personal Innovativeness in IT is measured as per Agarwal and Prasad (1998b). Lastly, cognitive age is measured using the age-decade scale (Barak and Schiffman 1981; Gwinner and Stephens 2001), where participants are asked to indicate to which age group (ranging from 20s to 90s in 10 year intervals) they perceive themselves belonging to along the four dimensions feel, look, interests, and act. The scale has been applied and validated in various research domains, including technology use (e.g., Eastman and Iyer 2005; Hong et al. 2013).

Data collection currently takes place and is scheduled until May 2016. We aim at a sample size of at least 150 respondents. After that, collected data will be analysed using Structural Equation Modelling (SEM) with typical assessments of common method bias, validity and reliability.

We aim to contribute to theory as follows. First and foremost, our results will contribute to research on eHealth adoption. Given the potentials eHealth offers to elderly, our research contributes to our understanding how elderly consumers appropriate these technologies. Next, we aim to contribute to the general stream of adoption and diffusion research by exploring cognitive age as a potentially important variable. As Reed et al. (2005, p. 214) stated “Relying solely on biological explanations for age-related decline in computer performance inhibits the possibility of integrating older workers into modern computerized work environments”. Thus, we expect to reveal nuanced findings on established behavioural variables by applying the concept of cognitive age on IT-related traits. Thereby, we expect to contribute to research on individual differences by responding to the call of Thatcher and Perrewe (2002) to examine how rather stable, higher-order traits (hereunto cognitive age) relate to dynamic IT-related traits influencing IT behaviour, such as computer anxiety and computer self-efficacy.

From a practical perspective, our results are expected to support system developers in designing and marketing technologies (i.e., eHealth) and training initiatives for older adults. Given that today’s technologies in general, and eHealth in particular, are increasingly consumer-oriented and aimed to support elderly’s needs in autonomous decision making, it becomes apparent to better understand the elderly as an important target group. As related research demonstrated, elderly’s behaviour is rather determined by cognitive than chronological age (Hong et al. 2013). Cognitive age has become an important segmentation variable (Gwinner and Stephens 2001) and could serve as a basis for customer personalization and segmentation in IT marketing (Hong and Tam 2006).
References


