

# Clashing Trends: Probing the Role of Age in Technostress

Stefan Tams, HEC Montréal

Corresponding author: Stefan.tams@hec.ca

As the workforce is becoming older at a rapid rate, a phenomenon known as the greying of the workforce, new challenges arise for firms across the globe as they have to juggle this dramatic demographical change in conjunction with the proliferation of increasingly modern information and communication technologies (ICT) (Pak et al., 2009). Yet, the interdependencies inherent in these two clashing workplace trends have remained largely unexplored, although we know that age is a salient dimension of human interactions with ICT. In particular, research needs to examine the role of age in technostress (Riedl, 2013; Tarafdar et al., 2007), an emerging problem of strong practical significance.

Grounded in research on gerontology (Czaja et al., 2006) and person-environment fit (French et al., 1982), this study argues that age positively impacts ICT-induced stress due to differences in working memory capacity (WMC; i.e., peoples' capacity to process the information necessary to complete an active task) between younger and older adults. Specifically, given that peoples' WMC declines with age (Czaja et al., 2006) and given that WMC is critical for computer-based tasks as they are cognitively demanding (Birdi and Zapf, 1997), we expect older people to experience more ICT-induced stress than younger ones, i.e., we expect age to impact stress via WMC. Further, since WMC may play a greater role for hierarchy-based, disorderly interfaces than for tag-based, orderly ones (Pak & McLoughlin, 2010), we theorize that this indirect effect of age on stress via WMC depends on the mode of interface navigation (i.e., tag-based vs. hierarchy-based) and on interface conspicuity (i.e., the extent to which relevant information is shown distinctly). Thus (please also see Figure 1 and Table 1):

H1: WMC will mediate the positive effect of age on ICT-induced stress.

H2: Interface navigation mode will moderate the indirect effect of age on ICT-induced stress (via WMC) such that this indirect effect will be weaker for a tag-based than a hierarchy-based interface.

H3: Interface conspicuity will moderate the indirect effect of age on ICT-induced stress (via WMC) such that this indirect effect will be weaker for more conspicuous interfaces (i.e., more orderly interfaces).

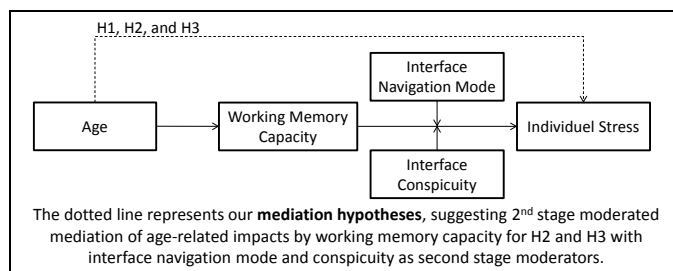


Figure 1. Research Model

Table 1. Construct Definitions

Construct	Definition	Reference
Age	Chronologically younger compared to older individuals	Pak et al., 2009; Pak & McLoughlin, 2010
Working Memory Capacity	Extent to which peoples' working memory can hold and process the information necessary to complete an active task	Czaja et al., 2006; Pak et al., 2009
Interface Navigation Mode	Tag-based vs. hierarchy-based navigation of an interface	Pak et al., 2009; Pak & McLoughlin, 2010
Interface Conspicuity	Extent of distinctiveness of relevant information in terms of disorder, distractions, and emphasis of important functions	Pak & McLoughlin, 2010
Stress	Extent of stress experienced by people as a result of ICT use	Riedl, 2013

We will test the model using a lab experiment that will integrate the selection of younger and older adults with the manipulation of ICT characteristics, eye tracking, objective measures of WMC, and a biological measure of stress. As regards the latter, the study will employ the salivary stress enzyme  $\alpha$ -amylase (sAA), which is a marker of the sympathetic nervous system component of the psychobiology of stress that reflects changes in the stress hormone *adrenalin* (Granger et al., 2007). sAA is classified as family 13 of the glycosyl hydrolases, and it can be collected non-invasively using oral swabs. The study will employ a  $2 \times 2 \times 2$  factorial design. We plan for 50 younger and 50 older subjects, and we will use Preacher et al.'s (2007) regression-based approach to estimate the conditional indirect effects at different levels of the moderators. In doing so, we will expound how and why age impacts technostress; that is, we will shed light on an important interdependency inherent in the two earlier-introduced, clashing workplace trends.

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