

## Seniors' Internet Skills, Risk Perception & Digital Participation

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### Short Abstract:

Engaging with information and communication technology (ICT) and participation in the digital economy is increasingly becoming synonymous with social inclusion, which puts disengaged individuals at risk of social exclusion. One important reason for the lack of ICT engagement relates to perceptions of risk associated with use. This study investigates how senior Victorians perceive different ICT engagement risk categories. Based on 22 interviews and 708 surveys of senior Victorians living at home, we discover six distinct categories of perceived risk associated with ICT usage. We investigate how our categories of risk perception influence seniors' willingness to participate in the digital economy. We discover that some risk perceptions hinder digital engagement while other risk perceptions may be caused by digital engagement. We also find that although internet skills moderate the relationship between risk perception and digital engagement, it may strengthen or weaken the relationship between our risk perceptions categories and digital engagement.

*Keywords: Senior Consumers, Perceived Risk, Digital Inclusion.*

## **Introduction and Research Aim**

Social exclusion is a significant threat to the well-being of seniors. As the COVID-19 pandemic has highlighted, digital engagement is crucial in fostering social inclusion. However, risk perceptions can significantly reduce technology adoption (Im et al., 2008). Perceived security risks are one critical demotivator for seniors' engagement with information and communication technology (ICT) and the digital economy (Mitzner et al., 2010; Wu et al., 2015). This is problematic since seniors often base their security concerns on perceptions of risk (Boise et al., 2013; Knowles & Hanson, 2018). Consequently, perceived risks pose barriers to engagement with ICT among seniors (Young et al., 2014). Moreover, risk perception is a significant barrier to participation in the digital economy and impacts older consumers more than younger consumers (Lian & Yen, 2014).

Risk perceptions are beliefs about potential harm or the possibility of a loss. Consumer research has long demonstrated that perceived risks can inhibit the adoption and usage of products and services (e.g., Rehman et al., 2020; Ross, 1975). Perceived risk manifests in many ways: financial, performance, physical, social, time-related, and psychological risk (Stone & Grønhaug, 1993). A study with senior Australians demonstrated a reluctance to engage with technology because of security concerns: Stories about scams, cyberbullying, and general security threats supported various perceptions of risk, creating resistance to adoption in some (Aleti et al., 2019). Thomas et al.'s (2020) 'Australian Digital Inclusion Index' data reveal that around 2.5 million Australians (13.5%) are not online, that age is a crucial determining variable for the level of inclusion, and that few of those aged 65+ feel empowered by ICT and cannot keep up with the change. Thus, internet skills, and reduced risk perception, are essential aspects for senior Australians to increase their online presence. This study aims to understand seniors' perceived risks of ICT use and what that means for participation in the digital economy.

We address three research questions in line with this aim: RQ1, How do ICT-risk perceptions relate to engagement in the digital economy? RQ 2, Do internet skills play a role in reducing ICT-risk perceptions? RQ3, To what extent do internet skills moderate the relationship between perceived risks and digital engagement?

## **Background and/or Conceptual Model**

Previous research has conceptualised engagement with the digital economy as consisting of four factors; everyday living, shopping and entertainment, social networking and gaming (Figueiredo et al., 2021). The risk perceptions are higher in individuals who lack exposure and experience with practices regarding digital economy participation variables such as gaming (Aranda et al., 2019). Thus, internet skills are crucial for digital inclusion. Van Deursen et al. (2016) propose five factors examining internet skills within a broader framework that links individuals' skills, types of engagement with online services and activities, and the tangible outcomes of this engagement. These skill factors are; Technical, Information & Search, Mobile Device Use, Social & Sharing, and Content & Creative skills. Proficiency in these skills makes up a person's internet skills. Although having these skills may impact the frequency of participation and engagement with the digital economy, perceptions of risk associated with certain online behaviours may mediate this relationship. Thus, our conceptual model views risk perception as the independent variable, moderated by internet skills (IS), and digital economy engagement (DE) as the dependent variable.

## **Methodology**

Our study incorporated mixed methods, including 708 surveys and 22 interviews from March 2020-2021 with senior Victorians living at home. We used Van Deursen et al. (2016) five-factors measure for internet skills. Our digital participation and engagement measure was

based on our own qualitative research and is in line with other grey and published research (e.g., Aranda et al., 2019; Twohig, 2021). 41 survey items were developed based on the previous literature and our interviews for our risk-perception measure. These items drew on Stone and Grønhaug's (1993) five risk components and willingness to adopt IT products and were added to and modified based on qualitative research. 20 items targeted people's thoughts, feelings and expectations when using ICT. 15 items addressed issues to do with risks associated with online transactions and the cost of using ICT, and 14 items broadly addressed potential perceived personal risks. We conducted factor analysis, discriminant validity assessment, and scale reliability analyses to test whether the survey items tapped into underlying constructs. Our factor analysis revealed six risk perception categories—although somewhat different from previous literature: Operational & Functional, Privacy & Transaction, Personal & Social, Purchase Transaction, Overspending, and Physical Harm. We used SmartPLS 3.3.3 for analysis purposes (Ringle et al., 2015).

### Results and/or Discussion and Contributions

Results show that perceived risks of technology and internet skills are significant factors for seniors' ICT use. Risk perceptions are real and have a significant negative influence on digital engagement (DE) for three of our risk categories (RQ1). However, overspending risk is not a barrier to digital engagement. On the contrary, those who perceive a risk of overspending may be more engaged in the digital economy (e.g., online shopping). Further, the level of internet skills (IS) in seniors directly reduces all levels of perceived risk (RQ2).

**Table 1: Results (\* = significant)**

Risk Perception category	RQ1: Risk – DE	RQ2: Risk – IS	RQ3: Risk – IS – DE
Operational & Functional	p=-0.20, t=3.52*	p=-0.71, t=38.88*	p=-0.11, t=2.20*
Privacy & Transaction	p=-0.38, t=7.11*	p=-0.62, t=25.46*	p=-0.10, t=2.20*
Personal & Social	p=-0.19, t=3.04*	p=-0.69, t=31.73*	p=0.16, t=2.89*
Purchase Transaction	p=0.09, t=1.30	p=-0.53, t=19.38*	p=0.01, t=0.023
Overspending	p=0.16, t=3.16*	p=-0.46, t=15.11*	p=0.07, t=1.85
Physical Harm	p=0.08, t=1.84	p=-0.36, t=10.29*	p=-0.03, t=0.87

The moderation analysis (RQ3) showed a direct and significant relationship between internet skills (IS) and digital engagement (DE) ( $p=0.56$ ,  $t=11.66$ ). Internet skills significantly weaken the relationship between Privacy & Transaction and, Operational & Functional risk perceptions and digital engagement. That is, improved internet skills can reduce fear of practical use and operation of ICT devices as well as concerns about entering private information and making transactions. However, internet skills significantly strengthen the relationship between personal and social risk perceptions and digital engagement. This suggests that some seniors may still be reluctant to engage in the digital economy due to fear of being perceived as incompetent by others – despite having more advanced skills. This may be related to stereotypes of seniors as incapable of using ICT: improved skills raise the stakes for social embarrassment if mistakes are made, or one falls victim to a scam.

### Implications for Theory and Practice

The investigation of perceived risks in this research is based on interviews concerning various perceptions of seniors' risk about ICT use and survey data that indicated seniors' reluctance to engage with technology because of security concerns. These results showed that perceived risk could be divided into six distinct categories. Understanding the different kinds of risk perception is helpful for researchers who can work on a more tailored approach to reducing risk and devising more effective strategies to overcome each type of perceived risk.

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