

MIDDLE-AGED & OLDER ADULTS' INFORMATION & COMMUNICATION TECHNOLOGY ACCESS: A REALIST REVIEW

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Final Report



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Key Messages

1. There continues to be a gap in information and communication technologies (ICTs) access and use between younger cohorts that have grown up with the technology (generation X and younger) and the next previous cohort (baby boomers and older). This is more pronounced among cohorts born prior to the 1930s, which have low access and use rates. Birth cohort, education, and income interact to create differences in familiarity, skill, and personal preference such that older adults with more education and higher incomes are more likely to access and use ICTs.
2. Training and support is one strategy that has been identified as able to increase access and use of ICTs among middle-aged and older adults. However, training needs to be tailored, relevant, and ongoing. Community service organizations that provide training and support require infrastructure support to purchase computers and tablets every three years as new technology emerges. In addition, ongoing funding is required to provide necessary training and support. This could be connected with other home programs, as in-home services are preferable.
3. Negative stereotypes associated with ageist perspectives of older adults need to be systematically challenged and dispelled through public service campaigns and in mass media. Representations of older adults as incapable of learning how to use ICTs serves to perpetuate the digital divide.
4. Usable and accessible design can enhance use of ICTs as some adults experience physical challenges such as declines in vision and hearing, and increased arthritis in their hands. Applying principles of universal design, and creating products that are accessible, reliable, and functional for most people, including those with disabilities, can lead to a generation of products that meet the needs of older adults.

Executive Summary

The digital age has been marked by a stream of evolving and innovative technologies and while these offer numerous benefits to Canadians not all members of society have equitable access to or use of these technologies. The Social Sciences and Humanities Research Council (SSHRC) call to examine how emerging technologies can be leveraged to benefit Canadians, identified the following priority question:

“What is needed in order to maximize equitable access to information and communication technologies, foster digital literacy and participation, seize new opportunities, and mitigate the digital divide in Canada and the world?”

To address this priority, an integrated knowledge translation (iKT) knowledge synthesis project was initiated to better understand the current state of the digital divide among community-dwelling middle-aged (aged 45-64) and older adults (aged 65+) by examining existing research knowledge regarding their access to and use of ICTs. The report includes implications of the project for policy, services, and industry, the detailed approach of the review process, analysis and results, and identification of knowledge gaps. This executive summary briefly covers the research approach, findings, and implications, in turn.

The knowledge synthesis methods used were informed by rapid realist review methodology¹ with a focus on academic literature published over the past decade (2006 -2016) and from data generated during a World Café event comprised of key stakeholders. Realist review is a theory-driven approach to knowledge synthesis that has an explanatory focus and uses a systematic, iterative approach to explore the mechanisms of how and why complex interventions thrive or fail, in particular settings.¹ The realist review approach addresses what works, for whom, in what circumstances, and why. The rapid realist review search yielded 748 peer-reviewed articles; a final subset of 55 articles met our inclusion criteria.

As part of the rapid realist review process it is imperative to get input from key stakeholders. We worked in partnership with bc211, a community based information and referral service in Vancouver, BC, who helped shape the research question. To further support this, and as part of iKT, we hosted a World Café event. This is a form of deliberative dialogue, where stakeholders, knowledge users, and key informants

interested in a topic come together to discuss and deepen understanding on a topic of shared interest. Our World Café event had 25 participants, including middle-aged and older adults, seniors' service providers, industry professionals, and academics.

Data extraction and analysis was guided by the Resources and Appropriation Theory proposed by Van Dijk,² a life course perspective, and an intersectionality based analysis.³ Findings are detailed within the organizing principles of the realist review method: context, mechanisms, outcome, and intervention. Context focused on demographics. The three primary demographic factors that correlate with the gap in ICT access and use are education level, income level, and age. The first two are positively correlated, while age is negatively correlated with ICT access and use. Age is a complex variable, with cohort differences, rather than chronological age, providing the explanatory potential. Our World Café participants reiterated this:

“But if you work in the workplace [before the] '80s and '90s, you weren't forced to use technology and computers and computer technology ...therefore, there's a portion of the population that got left behind in the revolution.”

In addition, three overarching mechanisms, mediated by differences in education, income, and age were identified: resources, motivation, and skills. Resources include: ability to purchase and maintain ICTs in the home, cultural perspectives on aging, and social encouragement. Motivation includes individual level impediments such as personal preferences, lack of skills, perceived lack of value of ICTs, and security concerns; and individual motivators include valuing ICTs, social encouragement, training, and sense of efficacy. ICT skills refers to the experience and comfort with ICTs, this is connected to exposure, familiarity, and design. As an example, one of our World Café participants stated:

“I think physically some of those things aren't that good. Like arthritic fingers are about twice the size of anyone else's so when I go to press a button or a key, I get wrong answers half the time. So that part, as well as vision. I think those are physical barriers.”

These factors interact and overlap to contribute to the observed differences in accessing and using ICTs among middle-aged and older adults. These mechanisms are summarized in Table 1, structured to capture the mechanisms associated with ICT use or non-use.

Table 1: Summary of ICT use & access mechanisms

ICT non-use	ICT use
Limited financial resources; not owning a home computer	Higher income; Having a home computer
Lower education attainment	Higher education attainment
Lack of familiarity, no training, limited skills, fear of damaging equipment	Practice, experience, exposure through work, family, friends, social support
Embrace ageist stereotypes related to ability of older adults to use ICTs, technology anxiety	Reject ageism, embrace aging process, curious, adventurous, active
Complex interfaces, constantly changing technology	Functional design, usability, accessible design
Fear of cyber security and privacy breaches	Social support, encouragement
Dislike or uninterested in ICTs; prefer familiar modes of communication	Value ICTs for communication, information, entertainment, and other resources, enjoyment
Physical limitations	Healthy and active

Using an intersectional lens throughout this review made visible a pattern of privilege related to choice in ICT access and use that can occur over one's life course. The interaction of demographics, and associated social locations, contributes to one's opportunity to choose whether or not to use ICTs. The framing of the question as how to get non-ICT users to become users implies that non-ICT users are deficient, while there are potentially benefits to not using ICTs that we are not identifying, or we are not addressing the information and services needs of individuals that will never be ICT users. And finally, choice and self-determination is a means of maintaining power that could be important for older adults to maintain.

"For digital seniors, ICT use is not a binary, they want to have the flexibility to choose for themselves how to engage with ICTs."^{4(p702)}

From this analysis we propose three recommendations to support middle-aged and older adults' 'choice' to access and use ICTs: 1) targeted training and awareness; 2) encouraging using universal design principles; and 3) providing and supporting accessible alternatives to ICTs.