Successful Aging in Digital Era
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About me

Originally
• Astana, Kazakhstan

Education
• B.A. – University of Michigan Dearborn
• MPH – Boston University
• Ph.D. – University of Illinois Urbana Champaign

Today
• Postdoctoral Associate School of Public Health and UM Extension
Research to improve the health and well-being of older adults through the thoughtful integration of technology.
U.S. POPULATION AGE 65+ (MILLIONS)

Older adults today are different from previous generations

- Increased Life Expectancy
- Health and Well-Being
- Workforce Participation
- Interconnectedness
- Social isolation
- Technology Adoption

![Age Distribution Graph]

**U.S. Population Age 65+ (Millions)**

- 65-74
- 75-84
- 85+
- Baby Boomers Turn 65

**Ph.D. Thesis**


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Adults 65+ are living longer...

but are they aging successfully?

2016
49.2 million

2034
77.0 million

2060
94.7 million

(Busetta & Bono, 2021; Habib & Saha, 2010; U.S. Census, 2018)
What is successful aging?

Rowe and Kahn's model has three components:

• (a) minimizing risk disability
• (b) engaging in active life
• (c) maximizing physical and mental activities

(Rowe & Kahn, 1997)
Thesis Rationale

• More older adults aging *with* and *into* disability
• 2 in 5 adults aged 65 years and older have a disability
• Disability ≠ Successful Aging?
• Older adults with disability do not meet researchers’ definition for successful aging *still perceive themselves as aging successfully*
Thesis Objective

• Explore successful aging in the presence of disability
• Explore the role of social and physical activity
  • 1: Quantitative part: population level analysis
  • 2: Qualitative part: interviewing older adults with disability
Dissertation Contributions

**Theoretical:**
- expanding the knowledge about successful aging experience in the context of disability
- testing proposed framework on population and individual levels
- in-depth exploration of subjective successful aging with disability
- to our knowledge, first study to estimate successful agers with disability

**Practical:**
- greater awareness and understanding how older adults perceive successful aging
- enhancing the relevance of public health interventions and policies to improving the lives and aging experiences of older populations
Dissertation Take Out

• 30% of older Americans are aging successfully based on our proposed definition for subjective “success”

• Successful aging is possible in the presence of disability based on conducted qualitative interviews (88%)

• Definitions of successful aging are based on:
  • current abilities and capabilities rather than losses
  • positive attitude
  • acceptance and coping strategies
  • use of resources
  • importance of social participation and physical activity
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Research at UMD Extension

U.S. POPULATION AGE 65+ (MILLIONS)

Technological Progress

- Plethora of current/emerging in-home technologies + systems that facilitate:
  - Aging in place
  - Activities of daily living
  - Dementia care
  - Social interactions
  - Physical activity
  - Leisure activities
  - Transportation
  - Healthcare
The way we think about older adults and technology is changing

Then...

Now...

The rise in new technologies have potential to benefit healthy ageing and longevity
Technology and Older Adults After 2020

- Older adults are buying more smartphones, home assistant technology (e.g., Amazon’s Echo), wearable technology (e.g., smartwatches), and tablets (e.g., iPads)
  - Among 70+ about 53% own a tablet (up from 40% in 2019)
- 44% say they have a more positive feeling toward tech now
- Streaming content has increased as well
- 76% of adults 50+ have wireline high-speed internet

Smartphone ownership and social media use among older adults continue to grow

% of U.S. adults who say they...

<table>
<thead>
<tr>
<th>Own a smartphone</th>
<th>Use social media</th>
<th>Own a tablet computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 18-29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-49</td>
<td>59</td>
<td>61</td>
</tr>
<tr>
<td>50-64</td>
<td>46</td>
<td>53</td>
</tr>
<tr>
<td>65+</td>
<td>34</td>
<td>45</td>
</tr>
</tbody>
</table>

Although older adults are currently much more likely to use the internet and technology compared to a few decades ago, usage is still far lower compared to younger groups.
Challenges in Technology Adoption and Use

Learning to use technology can be a significant barrier for older adults to incorporate systems into their lives (Mitzner et al., 2008)

- Health-related
  - E.g: Conditions that makes reading difficult
- Cost and accessibility
- Attitude
  - Lack of confidence
  - Stigma around learning new things
  - Lack of motivation
- Knowledge and skills
  - Lack of instructions adopted for older adults
- Too complex
  - Not older adults' user friendly
- Privacy issues
Challenges in Technology Adoption and Use

• Needs and preferences of older adults are seldom considered when designing technology (Czaja et al., 2013)

• There is no typical older person
  • “one size fits all” design strategies will not adequately address the needs, preferences, and abilities of all older adults
Models of Technology Use and Adoption

Technology use and adoption can potentially be predicted by two factors:

- the extend to which older adults perceive the technology as useful and
- the extent to which older adults perceive the technology as easy to use
Models of Technology Use and Adoption

Technology Acceptance Model (TAM)  
(Davis, 1989)

Unified Theory of the Acceptance and Use of Technology (UTAUT)  
(Venkatesh et al., 2012)

“If a piece of technology is perceived as useful to accomplish a task and easy to use, it is more likely to be accepted and adopted”
Unified Theory of the Acceptance and Use of Technology (UTAUT) 2 (Venkatesh et al., 2012)
1. Performance expectancy: I find using broadband internet useful in my daily life
2. Effort expectancy: I find using PC easy
3. Social influence: People who are important to me think that I should use smartphone
4. Facilitating conditions: I have the resources necessary to use broadband internet
5. Hedonic motivation: Using technology is fun
6. Price value: Internet service is reasonably priced
7. Habit: The use of PC has become a habit for me
Moderating factors (age, gender, experience)
Models of Technology Use and Adoption

- Demographic and cognitive variables also shape technology adoption and use
  - Not modifiable
- Attitudes are malleable through the use of models and different frameworks
- Technology self-efficacy might be enhanced by providing enough training to express mastery
Training for Older Adults

• Need for instruction
  • Older adults over age 65 have less experience with technology
  • Perpetual, motor, and cognitive declines in fluence technology interactions and learning
  • 48%: “when I get a new electronic device, I usually need someone else to set it up or show me how to use it” (Pew Internet and American Lise Survey, 2017)

Good instructional design for older adults is usually good instructional design for all (Czaja et al., 2019)
How to start training program

• Initial step is a needs assessment
  • Identify necessary knowledge, skills, and abilities (task analysis) and
  • Understand user characteristics (person analysis)
Broadband Internet and Technology Adoption among Older Adults in Maryland

A needs Assessment Study
Research Objectives

• What are the levels of digital literacy, broadband adoption, and different technology use among older adults from different socio-demographic, and health backgrounds?

• What are the barriers and challenges older adults face concerning broadband services? (e.g., accessibility, attitude, affordability, privacy and security, awareness, skills, knowledge, etc.)
Methods

• Needs Assessment Survey
• 60 older adults (60+) residing in Maryland
• Recruiting via extension service organizations
• Step 1 - quantitative survey
  • Demographic, socio-economic, and health information
  • Internet and technology use
• Step 2 - qualitative follow-up interview
  • UTAUT2
  • Technology Readiness
  • Open-ended interview
Expected outcomes

• Gain valuable insights into subjective perceptions of technology
• Understand internet adoption among a diverse group of older adults
• Assist interventionists in promoting technology adoption for healthier and better aging
Current Initiatives

Marylanders Online - the University of Maryland Extension’s newest program with a goal to increase the digital literacy skills and competency of Maryland residents:

• *Digital Navigation* - provides basic technical support over the phone to enhance digital access and inclusion in Maryland.

• *Digital Literacy Tech Education* - enhance Marylanders’ digital literacy skills through education and training
Dispelling Myths and Providing Opportunities

• Aging – multi-dimensional process
• Change in social roles or/and change on living arrangements
• Chronic illness or functional impairment

However
Dispelling Myths and Providing Opportunities

• Aging in the 21st century is vastly different than in prior time periods
• Definitions of “who is old” and “what it means to be old” are constantly evolving
• Older adult population is not a homogeneous group
• Recognizing this diversity, technology has the potential to address various challenges faced by older adults, improving their quality of life and overall well-being
• Essential to ensure that older adults have access to and can harness its full potential
“Older adults are not technophobes; they are tech explorers waiting for the right opportunity.”

- Jose Baez
Thank you!