

AUSTRALIAN CONFERENCE OF ECONOMISTS
6-9 JULY 2025, SYDNEY
ECONOMICS FOR A CHANGING WORLD

ACE2025

ESA

100
YEARS

CELEBRATING OUR CENTENARY IN 2025

How Digital Abilities Shape Wellbeing and Social Inclusion: An Empirical Study of Victorians

Dr Nataliya Ilyushina

RMIT University and Deakin University

ACE2025 ECONOMICS FOR A
CHANGING WORLD



Background and Research

Recent literature highlights that digital technology use can enhance quality of life, particularly through improved social connectedness and health.

- Sarwar Shah et al. (2019) found that digital engagement is associated with reduced loneliness in adults
- Ali et al. (2020) used internet access as a proxy for digital inclusion
- Alhassan and Adam (2021) linked general ICT use to a better quality of life.

Background and Research

Studies rely on narrow indicators—either broad ICT usage or basic internet access

Some research has just begun to explore more detailed and specific measures.

- Ma and Chen (2022) examined ICT use in education
- Dinu et al. (2022) demonstrated that digital confidence was associated with improved well-being among students.
- Australian Digital Inclusion Index (ADII) included digital abilities measures, and while mentioning it enables access to healthcare services, it does not directly collect data on health or wellbeing. (Thomas et al 2023)

These findings suggest that more granular measures of digital ability could offer greater precision in capturing the relationship between digital inclusion and well-being outcomes.

We addressed this gap by constructing a digital abilities index derived from 12 survey questions that assess a broad range of digital skills, confidence, and literacy.

Data

- STAIRS stands for: "Developing a city-wide survey to measure Social Transitions and Adaptations for Inclusive, Resilient and Sustainable Futures"
- A unique representative data set of 2,064 residents of the state of Victoria, Australia collected at a distinctive point in time.
- The survey was conducted via the Qualtrics platform in April 2022, as Melbourne started to ease restrictions after 262 days of stay-at-home orders over the course of six lockdowns, and people began to return to in-person activities
- In-depth variable on digital abilities, asking about 12 dimensions on digital skills
- The variable is superior to the commonly used measures of digital abilities such as ICT use (Alhassan and Adam, 2021)
- The estimation sample was 1,968 persons, due to non-response to the variables used in the regression analysis.

Digital Abilities Variable

Thinking about your skills around digital media, how true are the following statements for you?
Please select one response for each statement.

"I know how to..."

1. Download and then open a file
2. Save files in the cloud and re-open them
3. Find and install apps/software
4. Identify which apps/software are safe to download
5. Open a new internet browser tab
6. Complete online forms
7. Use shortcuts (e.g. Ctrl-C for copy on a computer)
8. Customise the look or sound of a device
9. Set and manage secure passwords
10. Adjust privacy settings
11. Connect to a Wi-Fi network
12. Use a mobile phone or device as a Wi-Fi hotspot

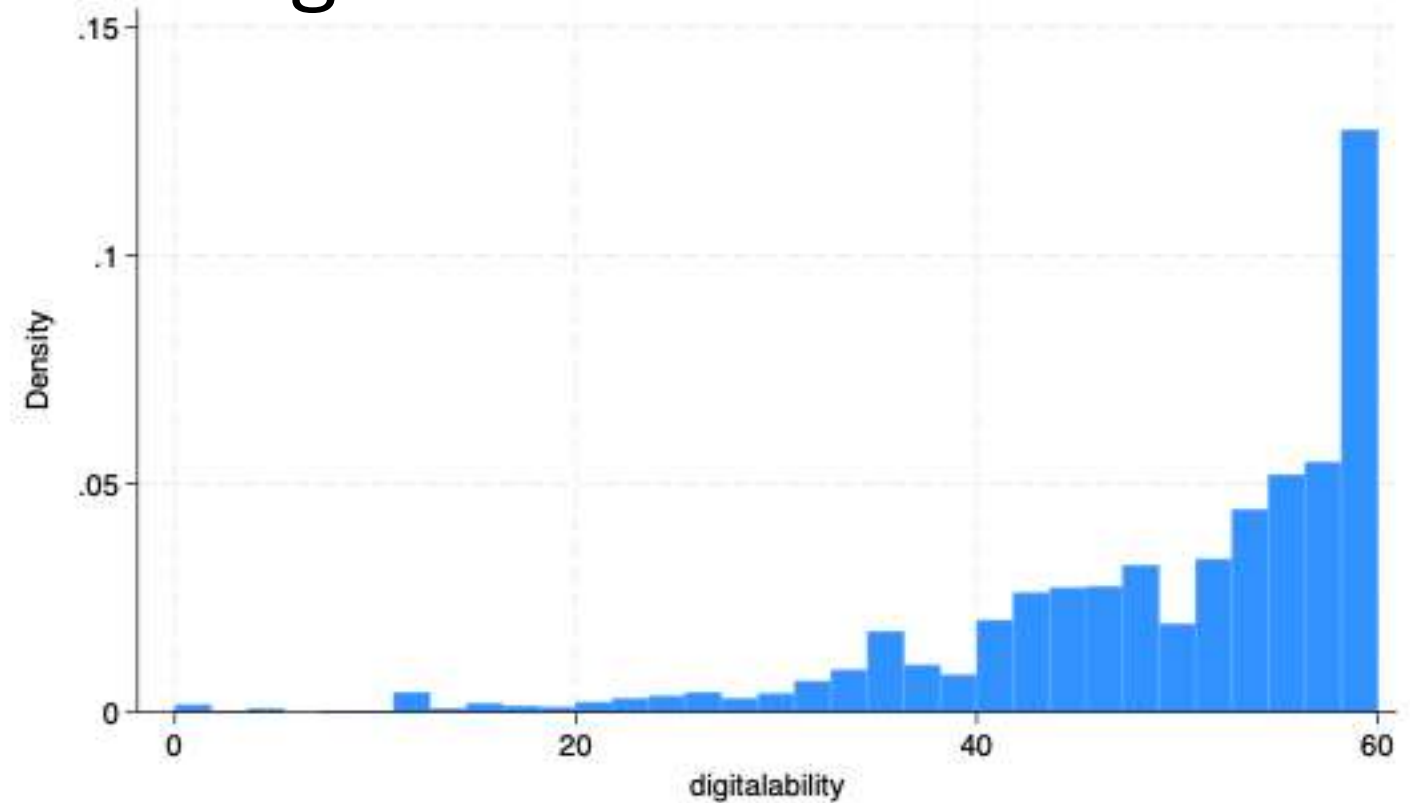
Digital Abilities and Wellbeing

Likert scale 6-point responses recoded and converted into a digital abilities score

The variable ranges from 0 to 60 with a mean of 49.54 and std deviation of 10.82

Health and Wellbeing both self-reported 5-point Likert scale from “Poor” to “Excellent”

OLOGIT regression analysis used to estimate the relationship between digital abilities and health and wellbeing



	(1)	(2)	(3)	(4)
VARIABLES	Health	se	Wellbeing	se
Digital Ability	0.0125***	(0.00421)	0.0118***	(0.00420)
Age	-0.0660***	(0.0146)	-0.0560***	(0.0148)
Age Squared	0.000663***	(0.000156)	0.000671***	(0.000158)
Female (base cat. Male)	-0.394***	(0.0873)	-0.466***	(0.0874)
Non-Binary	-1.917**	(0.778)	-2.788***	(0.796)
Other	-1.131	(1.178)	-2.296	(1.398)
Household Income	0.0516***	(0.0125)	0.0572***	(0.0125)
Children 0-5 years old living in the hh	0.0894	(0.134)	0.0165	(0.135)
Children 6-12 years old living in the hh	0.564***	(0.119)	0.690***	(0.119)
Have disability (base cat. No disability)	-0.975***	(0.104)	-0.850***	(0.102)
Have Tertiary Degree	0.283***	(0.0900)	0.354***	(0.0902)
Unemployed (base cat. Employed)	-0.486**	(0.217)	-0.603***	(0.218)
Not in the labour force	-0.480***	(0.137)	-0.371***	(0.136)
Member of a minority (base cat not a minority)	-0.0354	(0.103)	-0.0179	(0.102)
Prefer not to say about minority status	0.179	(0.263)	-0.0321	(0.262)
Observations	1,976		1,967	

Social inclusion

The mechanism of how digital abilities link to better health and wellbeing outcomes could be through social inclusion

Ragnedda et al. (2022) found the reinforcing effect of digital and social inclusion, highlighting that even with internet access, it is the lack of digital abilities that can amplify the risk of social isolation.

The next step of the analysis used the 4 social inclusion variables as dependent variables with the same controls and OLOGIT regression model.

1. I seem to have a lot of friends
2. I have no one to lean on in times of trouble
3. I often feel very lonely
4. When I need someone to help me out, I can usually find someone

	(1)	(2)	(3)	(4)
VARIABLES	A Lot of Friends	No one to Lean	Very Lonely	Can Find Help
Digital Ability	-0.000649	-0.0165***	-0.0143***	0.0293***
Age	-0.104***	0.0318**	0.0184	-0.0584***
Age Squared	0.000963***	-0.000645***	-0.000599***	0.000767***
Female (base cat. Male)	-0.271***	-0.528***	-0.199**	0.0920
Non-Binary	-1.069	-1.865**	1.291*	-0.145
Other	-1.889	2.657**	1.836	-2.227*
Household Income	0.0493***	-0.0478***	-0.0239**	0.0731***
Children 0-5 years old living in the hh	0.148	-0.0919	-0.184	-0.0505
Children 6-12 years old living in the hh	0.628***	0.494***	0.272**	0.257**
Have disability (base cat. No disability)	-0.250**	0.305***	0.493***	-0.258**
Have Tertiary Degree	0.350***	0.143	-0.123	0.159*
Unemployed (base cat. Employed)	-0.379*	0.463**	0.572***	-0.595***
Not in the labour force	-0.250*	0.0367	0.125	-0.108
Member of a minority (base cat. not a minority)	0.0866	0.0567	0.0760	-0.0362
Prefer not to say about minority status	0.102	-0.354	-0.486**	0.0922
Observations	1,972	1,971	1,969	1,969

Significance of results

- **The STAIRS survey offers a richer and more sensitive index of digital ability.**
- This index can be valuable for future empirical work on digital inclusion, public policy, and social well-being.
- The paper demonstrated an empirical link between health, wellbeing, loneliness, and digital abilities.
- The findings highlight the importance of digital abilities in daily life beyond the workplace.
- This is essential for social policy design.
- It also helps evaluate the role of digital abilities and digital literacy beyond purely occupational contexts.

ACE2025 ECONOMICS FOR A
CHANGING WORLD

