"I am trying to keep up to date…but it is moving so fast"

Older Australians' Digital Engagement in Turbulent Times

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National Seniors AUSTRALIA

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National Seniors AUSTRALIA

Contents

Executive Summary

- This report compares the results of two surveys that explored older Australians' engagement with digital technologies.
    - Both surveys were conducted by National Seniors Australia, but before and after the advent of the COVID-19 pandemic, in 2018 and 2021 respectively.
    - Each surveyed over 5400 people aged 50+, hailing from all states and territories. The two survey groups may or may not have included some of the same people; the survey was anonymous, so it is unknown.
    - Most survey participants completed the survey online, suggesting both groups surveyed were relatively digitally literate.
- Overall, older Australians' digital engagement increased between the two surveys.
    - Older Australians' device use patterns changed during the period. Fewer people completed the 2021 survey on desktop or laptop computers than the 2018 survey and more completed it using mobile phones. The proportion of people aged 70+ who used a mobile phone to complete the survey doubled, and the proportion of people aged 80+ who used a tablet increased from 11% to 19%.
    - The 2021 survey invited participants to write down apps they use and about 600 people did so. Together they listed more than 400 apps, suggesting older Australians can and do use digital technologies when they meet their needs.
    - The frequency with which older Australians use basic digital services such as web-browsing, accessing government services online and sending text messages increased modestly between the two surveys. Over 150 survey participants in 2021 also reported increased use of video streaming services such as Netflix, ABC iView and SBS On Demand since the advent of COVID. Others noted that their use of digital technologies for communicating with people and networks had increased in frequency since COVID.
    - Older Australians' ability to perform a range of digital activities at a 'good' or 'excellent' level increased markedly between the two surveys. Such activities included emailing, finding information online and doing internet banking. The largest increase the study was able to measure was in people's good or excellent ability to use a smart phone, which increased from 49% of survey participants in 2018 to 63% in 2021. Over 120 people also commented that they had learned how to use video calling technologies such as Zoom and Teams during COVID.
- In contrast to these general trends, older Australians' average levels of comfort with a range of digital activities decreased during the period.
    - Such activities included using self-checkouts at the supermarket, using ATMS, and resolving minor issues with technical devices.
    - However, survey participants' comments in 2021 showed this was rarely related to reduced technological ability or confidence. It was more often a measure of

discomfort with the ethical and social implications of digital technologies, such as job losses resulting from the introduction of self-checkouts and ATMs.

- Older Australians' attitudes to digital services also changed between the two surveys, but in complex ways.
    - In 2018, 32% of survey participants agreed that they felt frustrated using digital services, but this rose to 46% in 2021. At the same time, many more people in 2021 agreed that digital services made their lives easier (71% rose to 87%).
    - While the proportion of people who agreed they would always prefer to talk to a person than communicate online rose by 17% during the period (65% rose to 82%), the proportion who agreed that online services can sometimes be more useful than face-to-face contact or telephone contact also rose (56% to 64%).
- These seemingly contradictory numbers may be explained by four factors.
    - First, the rapid pace of technological change and increasing complexity of technological devices has offered new opportunities but has also made technical issues more difficult for users to troubleshoot. The proportion of survey participants who desire more training in digital technologies increased modestly during the period from 53% to 59%.
    - Second, the available assistance to help people navigate such problems seems to have deteriorated. This is because businesses and governments are generally moving away from providing live, in-person, expert assistance, and towards providing pre-produced information such as FAQ websites, non-human (bot) help services, and inexpert call centres. More people in 2021 were worried about the prohibitive cost of digital technologies than in 2018 (15% rose to 18%), and about the safety of their information online (75% rose to 85%), making this general shift even more frustrating and disempowering for older Australians.
    - Third, older Australians' perception that there is a generational divide in the digital realm seems to have increased during the period. More people in 2021 than 2018 agreed digital services were designed for younger generations (37% rose to 45%). Even more strikingly, while three-quarters of people in 2018 agreed generations use digital services differently, almost everyone surveyed in 2021 agreed with that sentiment (76% rose to 95%). Some survey participants commented on this, for example noting that younger people tend to help and learn from each other when using digital technologies while older people do not. This perception of generational difference – whether it reflects digital realities or not – can make older people feel less digitally competent than they actually are.
    - Finally, the increased frustration felt by survey participants in 2021 may be the result of COVID measures forcing more people to use technologies they do not feel confident with, such as smart phones, check-in apps and video calling technologies. Frustration with a chosen technology is one thing, but frustration with a legally mandated technology is likely to be amplified.

Introduction

National Seniors Australia has been interested in the digital engagement of its members since 2017. This is the third report with a specific focus on the digital engagement of older Australians, with prior reports published in 2017 and 2019 [1,2]. In general, National Seniors has found that many of the organisation's members defy reductive stereotypes of disengaged older people being left behind by new technologies. Previous studies have shown that, while there may be generational preferences for face-to-face rather than online interactions, many older adults use digital technologies frequently and with high levels of ability and comfort. The 2019 report introduced the categorisation of National Seniors' online members as "Senior Surfers", demonstrating diverse levels of engagement with, and attitudes towards, technology among older Australians in their everyday lives.

Since the 2019 report, the lives of older Australians have been severely impacted by the global pandemic arising from the international spread of COVID-19, which began in December 2019 and continues into 2022. Aside from the direct impacts of illness and deaths associated with the virus, older adults have been significantly affected by restrictions put into place by local and federal governments in Australia, as has been reported by National Seniors previously [3].

One potentially positive outcome that has been reported in relation to COVID-19 restrictions is an uptake in the use of digital technologies by older Australians [4-6]. This is a promising development, as digital inclusion has been linked to age, with older adults less likely to be digitally included [7]. The latest Australian Digital Inclusion Index found that "there are signs the digital inclusion of mid-life and senior Australians is improving" [8]. Other research suggests that there is still a way to go in terms of including older Australians, and COVID-19 has highlighted inequities, particularly in critical services such as telehealth [9,10].

Increases in use of digital technologies do not necessarily imply increases in comfort or skill levels, nor changes in attitudes. The aim of this report, therefore, is to directly compare responses to the same digital engagement questions asked in National Seniors surveys conducted both before and during the COVID-19 pandemic, in 2018 and 2021. On the next page is an overview of the two surveys showing the questions that were asked both times. The patterns of stasis and change over the period are outlined in the rest of this report.

In the 2021 survey we also asked new questions directly inquiring about COVID's impact on people's digital engagement. Much of this report is an analysis of the thousands of free text comments respondents wrote in response to these questions. That analysis can help us interpret the numbers and understand more about the lived experience of older Australians under COVID.

Study Overview

2018

National Seniors Social Survey 7 (NSSS-7)

Number of participants	5,466
Number who answered all digital technology questions	4,574

Questions asked both years

Digital technology questions

Years using the internet
Devices used to access the internet
Frequency using technology
Ability using technology
Comfort using technology
Number and type of apps used
Attitudes towards using technology

Senior Surfer category: a measure of digital engagement

Defined by:
Years using the internet, Ability, Comfort and Frequency scores, Number of apps used

Demographic questions

Age
Gender
State/Territory
Health
Education
Savings

2021

National Seniors Social Survey 9 (NSSS-9)

Number of participants	5,430
Number who answered all digital technology questions	3,787

Questions asked only in 2021

Free text comment option about COVID-19 and its effects on technology use

COVID-related impact on frequency (1,048 comments)
COVID-related impact on ability (1,335 comments)
COVID-related impact on comfort (1,229 comments)

Other topics for free text comment

Attitudes to using digital services (460 comments)
Self-rated Senior Surfer category & free text comment option (n=4586; 857 comments)

National Seniors Australia is a not-for-profit, non-government advocacy organisation for Australians aged 50 years and over. Every year except 2020, National Seniors has conducted an online survey of older Australians' behaviours and views across a range of topics relevant to lifestyle, health and wellbeing.

This report compares the results of two National Seniors Social Surveys: the 7th, conducted in 2018 (NSSS-7) and the 9th, conducted in 2021 (NSSS-9). This page shows the questions we asked in both surveys that can therefore be compared, and questions we asked only in 2021 that tell us more about the COVID experience.

Digital engagement at a glance: Senior Surfer scores then and now

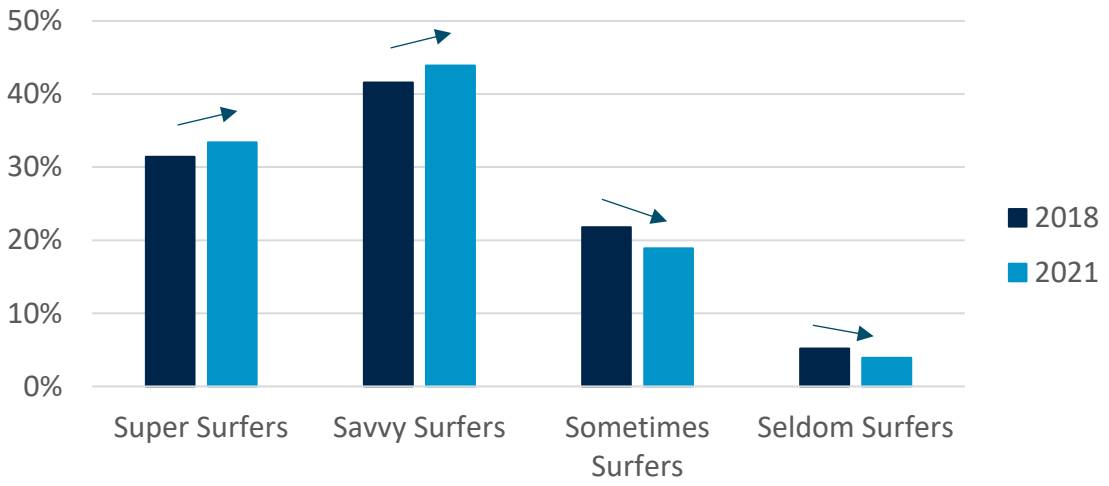
There are many ways to understand and evaluate people's engagement with digital technology. This report uses three: numerical measurements of technology use, free text comments reflecting on personal experiences, and a unique metric that gives an indication of a person's digital engagement at a glance, which we call the 'Senior Surfer score'.

National Seniors pioneered the Senior Surfer score in our 2019 *Senior Surfers* report which analysed the digital engagement data from our 2018 NSSS-7 survey [1]. The score ranks older Australians' digital engagement on a four-point scale: 'Super Surfers', 'Savvy Surfers', 'Sometimes Surfers' and 'Seldom Surfers'. The score is calculated from a person's answers across several key survey questions about their thoughts, feelings and experiences with digital technology.

In the 2021 NSSS-9 survey we asked some of the same questions as in 2018, enabling us to calculate survey participants' Senior Surfer scores once again, and to compare them to the 2018 figures. Doing so gives us an estimate of older Australians' digital engagement levels at both time points, so that we can see if there has been any change over the period. Note that it was not the same group of people surveyed twice, but two independent surveys of older Australians. Some of the same people may have answered both surveys but since they were anonymous, it is unknown.

When we calculate the Senior Surfer scores, we can see there has been a small but solid increase in digital engagement since 2018. The Super Surfers – the most 'digitally literate' group – increased by 2% between 2021 and 2018, as did the next category down, the Savvy Surfers. These differences were accommodated by a 3% decrease in the proportion of Sometimes Surfers between 2018 and 2021 and a 1% decrease in the proportion of Seldom Surfers. See the figure on the next page for a visual representation of these changes.

To understand what that shift looks like within the realities of people's lives we must dig deeper, and that's where the first two measures come in: numerical measurements and free text comments. In the Major Findings section of this document we report the 2018-2021 comparisons for each survey question and present our analyses of the comments that respondents wrote about digital technologies. The major findings show that some arenas of older people's lives changed considerably between 2018 and 2021, though not always because of COVID.



Senior Surfer score comparisons between 2018 and 2021. The arrows show the direction of change is towards slightly higher levels of digital engagement, with a greater proportion of Super and Savvy Surfers in 2021 and fewer Sometimes and Seldom Surfers.

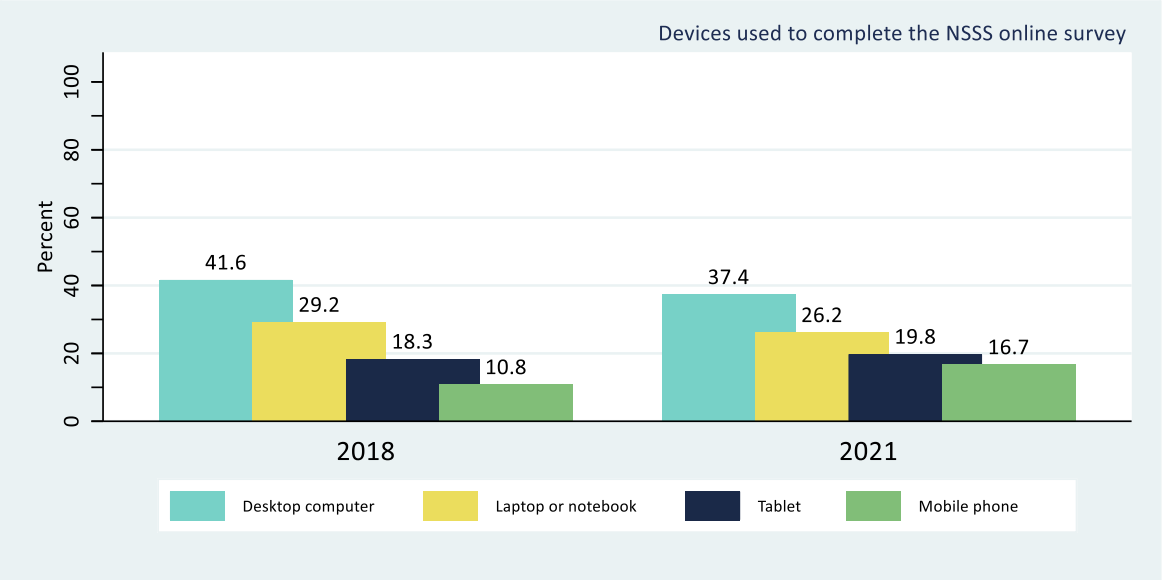
Readers interested in the technical details of this study should see Appendix 1 for the research methods, Appendix 2 for the full list of survey questions, and Appendix 3 for the numerical details of the 2021 survey results and 2018-2021 comparisons.

As a side note, in the 2021 survey we also asked participants to rate themselves on a descriptive version of the Senior Surfer scale, to find out if people's self-perception was different from the statistics-based score we gave them. We report the results of this experiment in Appendix 4.

Major findings

Devices older people use

The first question we asked survey participants in both years was about the device they were using to complete the survey. Compared to 2018, a higher proportion of participants used mobile phones in 2021, with an increase from 11% to 17%. The proportion of participants using desktop computers and laptops/notebooks decreased accordingly.



In terms of age, this increase in the proportion of participants using a mobile phone was seen mostly in the older age groups. The proportion of participants aged 70+ who were using mobile phones doubled between 2018 and 2021. All age groups showed a decline in the proportion of participants using a desktop computer to complete the survey, with the decline becoming greater as the age group increased. While the use of tablets was relatively stable in most age groups, there was an increase in the proportion of participants aged 80+ who used a tablet to complete the survey from 11% in 2018 to 19% in 2021. See Appendix 3 for a detailed illustration of all percentages discussed in the text.

As in 2018, in 2021 there were higher proportions of women than men using tablets and mobile devices to complete the survey. Both women and men showed decreases in the use of desktop computers and laptops/notebooks and increases in tablets and mobile phones, as per the overall trend. However, desktop computers were still the device type used by nearly half of the men surveyed whereas among women, the four device types were each used about equally.

Non-binary participants and participants of other genders are not presented in the gender comparison statistics as they comprised fewer than one percent of responses, but we acknowledge their presence with respect.

Applications older people use

We also asked participants what apps (applications) they used on a mobile phone or tablet.

The first part of the question listed some prominent apps and app types for participants to select. Their responses showed that, as we saw in 2018, many older Australians have no problem embracing new technologies and making them a part of their everyday lives. The number of people using banking apps increased in 2021 compared to 2018, as did numbers using WhatsApp, making it more popular than Skype, which reduced in overall number of users. New apps were included in this question in 2021 and showed high numbers of participants using them, including the COVIDsafe app with over 2000 users, and Zoom and Netflix with over 1000 users each. (Again, see Appendix 3 for details.)

It is worth noting that the numbers reported for this question might be slightly misleading because the question asked about two things simultaneously: (1) apps and (2) smart phone/tablet use. Comments showed that some respondents used a variety of computer applications on and off the list, but they did not use them on a smartphone or tablet. Some may have answered the question (or wanted to answer it) in terms of programs and applications they used on a computer. People said things like:

"I use my laptop for the above"

"I use these apps on a PC, have minimal smart phone account"

"I use a laptop, I think that is not the same as a 'Tablet'- or is it?"

In 2021, respondents also had the opportunity to list any other apps they use in an open text comment box. About 11% of survey respondents (622 people) left comments for this question. Some said they used too many apps to mention, and others said they did not have a smartphone or similar and did not use apps. However, many commenters did list at least one specific app or app type, giving a great variety of answers. Collectively, commenters listed over 400 apps. These included:

- **Built-in** phone apps such as the camera, alarms, calendar, calculator and flashlight
- **Web browsing** apps and online resource apps such as Wikipedia
- **Phone security** apps such as virus protectors, adblockers, anti-theft, phone-finding and VPN apps
- **QR Code** and **COVID tracing** apps
- **Government** apps such as MyGov, state-based services apps or local council apps
- **Networking, file sharing and communications** apps including email apps, LinkedIn, FaceTime, WeChat, Telegram, Viber, Pinterest, Dropbox and many more

- **News** apps from numerous news providers including national and state-based Australian newspapers, online services such as ABC News, SBS News, The Guardian, The Conversation and commercial news, and international news services and outlets
- **Emergency and weather** apps including Fires Near Me, Floods Near Me, bushfire planning apps, state-based emergency services apps, local weather apps and apps associated with being a first responder for first aid, firefighting and surf lifesaving
- Apps for **medical and health** functions including making medical appointments, receiving general health information, receiving personal health documents such as diagnostic images and reports, managing medication, managing mental health, controlling hearing aids and drinking water regularly
- **Exercise and fitness** apps such as those connected to gym membership, pedometers and other fitness tracking apps, golf score apps, brain training apps, and apps to assist with managing mind-body wellness such as meditation and relaxation apps
- **Sport** related apps for keeping up to date with numerous sporting codes from cricket to soccer to poker, and for gambling
- Apps related to **nature and outdoor activities** including apps for identifying plants, birds and frogs, astronomy apps, guides and zoning information for national parks and other outdoor spaces, wildlife rescue apps and apps for organisations such as Scouts Australia
- Apps for **travel and navigation** including for public transport, taxis and rideshares, traffic updates, maps, route planning and tracking, international route finding, flight radar, aviation and marine navigation, apps for car maintenance and dashcams, airline bookings, hotel bookings, AirBnB and Wikicamps
- Apps for **finding local facilities** including public toilets and cheap fuel
- **Reading and books** apps including e-readers, e-book purchasing apps, library and e-book borrowing apps and Bible related apps
- **Radio, podcasts and music-related** apps including for different ABC radio services, music streaming services and podcast apps
- **Viewing and video streaming** services including sites not requiring registration such as YouTube, free sites requiring registration such as ABC iView and SBS On Demand, paid streaming services, and auxiliary apps such as Chromecast
- Apps for **home management** including for real estate, home improvement, home swaps, tradesperson hiring and neighbourhood connectivity
- **Remote appliance** operations for various devices including home security cameras, irrigation systems, solar panel systems and mobile home satellite dishes
- Apps for **technical tasks** such as measuring, magnifying, scanning, printing, tuning musical instruments and keeping time with a virtual metronome
- **Money** management apps including for internet banking, card and payment services, budgeting, share trading and currency exchange

- **Food** related apps for buying groceries, takeaway food or delivered ingredients, food review apps, cooking apps, and apps for checking food sources such as whether they are Halal or free range
- Apps for **buying and selling** such as Gumtree and eBay, apps for major retailers, barcode scanners and discounts apps
- Apps for specific **service providers** such Australia Post, phone and internet providers, electricity providers, roadside assistance, insurance, and superannuation
- **Education** related apps such as schools streaming apps, apps for specific education or daycare centres, and apps for learning musical instruments and languages
- **Language and writing** related apps including word processing apps, translation apps, spelling apps, dictionary apps, and emoji apps such as Indigemoji
- **Games** apps including for card, word and number games, jigsaws and colouring
- Apps for **entertainment** including cinema apps and event ticket purchasing apps
- Apps for **activities** such as photography, controlling drones, researching ancestry, checking horoscopes or identifying hallmarks on antiques
- **Other apps** such as Dreamlab which uses the phone's processing power for science while the owner sleeps, or the retirement app Your Life Choices.

While we must respond to the needs of older Australians who cannot use apps by employing non-digital methods of communication, this vast list indicates that many older people can and do use apps for a range of activities. Apps should be considered part of the suite of appropriate options for communicating with older Australians.

Frequency of using digital technologies

One of the main metrics we can compare between 2018 and 2021 is the frequency with which older Australians use digital technologies and services. We asked several questions on this theme, each focusing on a specific digital activity, which collectively contribute to an impression of digital use frequency. The specific activities were: using an internet search engine, doing banking online, accessing online government services, sending a text message, using Facebook, using other social media and using TV or movie streaming services.

There were increases in the proportion of participants using these digital technologies on a daily or weekly basis, though the changes were relatively small. Most notably there was an increase in the proportion of seniors using an internet search engine daily (75% in 2021 versus 69% in 2018). There was some increase in accessing government services online, but on a weekly (3% increase) or monthly (5% increase) rather than daily basis. A higher proportion reported sending daily text messages in 2021 than in 2018 (62% versus 58%). There was a slight increase in reported daily use of Facebook (42% in 2021 versus 40% in 2018) even though the proportion of non-Facebook users (35%) remained similar in 2018 and 2021. Slightly more people engaged in internet banking daily, weekly or monthly in 2021 than in 2018 (83% versus 80%).

Two new questions were added to the survey in 2021, regarding use of other social media and use of streaming services such as Netflix. Most participants (63%) responded that they rarely or never used other social media. There was a stark divide among participants in terms of use of streaming services – while 31% of participants reported using them every day, 34% said that they never used them. See Appendix 3 for details.

Reported changes in frequency since COVID-19

In addition to comparing quantitative differences between responses in 2018 and 2021, we also asked participants to comment on their perception of whether their frequency of use of digital technologies had changed since COVID. We analysed the comments first to find out if participants did report a change, and beyond that, what the nature of the change was or if there were reasons given for no change. Readers interested in our analysis methods should see the 'Qualitative Analysis' section of Appendix 1.

Of the 1048 people who left a comment for this question, 231 said the frequency of their engagement in these activities had changed since COVID-19 (22%), 677 said it had not, and 140 offered a more ambiguous answer.

Some of the 'yes' and 'no' type responses simply indicated that the respondent's use of online services had changed, or that it had not, with no further details. Most of the 'no' type responses (over 640) were of this variety. But other respondents elaborated further.

For those who said the frequency had changed, almost all said their engagement in online activities increased, with very few saying it had decreased. The most commonly reported change, noted by over 150 people, was more frequent engagement in streaming video content since the advent of the pandemic, especially during lockdown periods. Many commenters subscribed to paid streaming services, especially Netflix. Others mentioned discovering YouTube or watching more ABC iView and SBS On Demand content:

"Yes - more Netflix :-) Like everyone"

"Thank God for Netflix during Covid"

"Yes - got on to Netflix. Couldn't go out and hate housework."

"I have watched many foreign television series on SBS, cut right back on my walking."

"Yes - more SBS on Demand. Don't have any paid TV by choice"

"TV streaming, but only free services especially ABC iView"

"YES. TV catch-up has been a boon and it doesn't COST."

"I FOUND YOUTUBE !"

"More streaming services used during Covid. And YouTube for painting classes and tuition sessions."

"I used my smart TV during lock down for work outs and have continued to do plus recommenced my gym membership"

"We took out a Netflix subscription. During COVID we have watched a vast quantity of opera, theatre, ballet, concerts online. Hubbie has become a Youtube addict."

"Streaming services increased in first half of 2020, but backed right off since."

In some of the ambiguous responses, respondents said they had watched more television or movies since COVID-19, but it was unclear if this was streamed content or ordinary television viewing. Others said they watched a lot of streamed content but did not make it clear whether that had changed since COVID; indeed, some 'no' responses said the respondent had always watched a lot of streamed content and COVID did not change that.

Other respondents said they anticipated purchasing a smart TV and a Netflix subscription soon, or that they had wanted to do so but were prevented by their budget, their internet connection technology or tight data limits. For other 'no' responses, the respondents were

not interested in streaming video content or in paying for streaming services or were already heavy users:

"No change - I love my internet and Foxtel."

"Satellite doesn't allow much data downloading so these programs are really unavailable, would love access"

"Yes have less data for streaming as data is being used to click and collect shopping, zoom calls, paying bills, searching for information for day to day living. Constantly stressed about running out of data. Reduce social zoom calls etc to save data"

"We had Netflix but it [took] too much of our internet time. We are in retirement resort and owner controls our time, here we are still on ASDL, before we came here we had unlimited"

"Not a TV watcher. Comfortable and capable doing it but just don't want to."

Some people whose use of technology increased under COVID engaged with online services for entertainment beyond video streaming:

"Have subscribed to more online news eg The New York Times"

"Reading library books online"

"Podcasts - every day as I've had a cataract operation & am required to sit still and I can't watch tv. I'd never accessed them before but amazed at the huge variety of great stories."

"I enjoy my Audible membership for books so I can still garden/paint/housework/iron etc while listening"

"I have probably spent more time doing online puzzles, and more time on Facebook looking at other people's cooking (air fryer, slow cooker). These pages were very busy during lockdown."

"Covid forced the abeyance of two lecture organizations to which I belong. Now Zoom makes the lectures available to a much wider (even international) audience...and in some ways is actually more intimate - all without the need to dress up, drive in traffic and find a park. I very much miss the social interaction, but Zoom is becoming my preferred way to attend lectures."

"I am more comfortable using Zoom for meetings, as this is how meetings are now being scheduled and I quite like the fact I do not need to leave home to attend a meeting that may have meant up to 6 hours of return trip travelling. To me COVID-19 has some positive impacts."

"I've have spent much more time on the computer overall. I have accessed more talks, documentaries and lectures online and have done 2 Future Learn. I listen to more music online and read the newspapers in digital version."

"During COVID I became aware of all the online options available such as VIRTUAL TOURS of museums, art galleries, destinations, which I wrote down but haven't accessed very much YET! But look forward to doing."

Another common comment was that people had engaged more in contacting friends, family and networks through text messages, email, social media and other online communication platforms:

"More Txt frequently to family & friends, More emailing to distant friends & occasional phone calls"

"Used Zoom, FaceTime more often"

"My close family are now on WhatsApp and Signal. We chatter on them and include photos."

"More reliable on online services and communications. I don't do much social media networking like Facebook except for close family members but send emails/texts/video links all the time."

"Increased online activity particularly Twitter to 8 plus hours a day"

"I also use Twitter a lot, for company as much as anything"

"Had to get onto Facebook out of deep feeling of isolation!"

"Social media options have increased as others have requested it"

"Nothing has changed except the length of my skype calls to those I love and cannot visit."

A few people said their social media use had decreased, giving reasons such as scams, accounts being hacked, Facebook's changes to news sharing in early 2021, or because the respondent developed other interests. Some whose technology use had not changed since COVID said they do not like social media because of its negative impacts on society,

including giving extremists a voice, spreading misinformation, invading privacy, and fostering loneliness and poor communication.

General shifts under COVID to online service provision necessitated increased technology use for many, albeit unwillingly at times:

"Yes in regard to ordering from the Supermarket for home delivery."

"Using it more and for a wider range of purposes eg lessons."

"I access the Government COVID app whenever I am required to because I am visiting premises where it is necessary"

"My email usage has increased considerably as all service providers are not able to communicate other ways because of restrictions."

"I have probably become more reliant on Google My Business and Facebook to inform me of business hours since COVID-19 and I find many businesses and organisations have purposely turned clients away from face-to-face contact and into the self-service approach (e.g. McDonalds)."

"Used Facebook briefly during 2020 when gym closed down but offered online classes via Facebook. I closed my Facebook account once the gym reopened."

"I have used zoom for U3A classes but would not choose it normally as I am not really comfortable in that area and miss the face to face with the group and presenter. This has been the norm since Covid."

Online government service provision was singled out for criticism by a few people:

"Trying to use Govt. services online. Must say most times unsuccessfully."

"Since Covid I am applying for a low income health care card. Accessing Centrelink online is a nightmare."

"No. Only visit MyGov when they send an email that there's a message; couldn't they just send the message!"

"I applied for jobseeker and have had to learn how to use MyGov which has been quite stressful. The 6 years prior I have been eligible for the dole but elected not to apply because Centrelink is so difficult to navigate. I had made several failed attempts. We previously lived on my husband's part disability pension which had become very stressful as we were always working out how to survive."

Some people commented on the unfortunate personal reasons for changes in their technology use:

"It increased as we weren't going anywhere which caused more tension."

"Yes locked up for months during lockdown there was nothing else to do"

"Yes. Staying at home more because of age and 2 chronic conditions. Better alternative than crowded places. Oldies are vulnerable to Covid and I believe we should be taking responsibility for our health and not expecting the world to stop on our behalf thus destroying the economy"

In general, some respondents felt unable to make changes to their technology use because of current limits to their abilities and little available assistance:

"No because I don't know how and we haven't got nbn hooked up."

"Would like to become comfortable listening to Podcasts and using the headphones I have"

"There is so much electronic choice. It is difficult to be competent at all of them."

"I have no-one with the time or knowledge to help me. There is a lot I would like to do but at the present time there is no-one close who can help me."

Ability to use digital technologies

Another measure of digital engagement is people's ability to use digital technologies and services. Once again, we asked several questions about ability, each pertaining to a specific digital activity.

Overall, the proportion of participants rating their ability to use digital technologies as "good" or "excellent" increased between 2018 and 2021. The degree of change was more marked than the changes in frequency we reported in the previous section. The proportion of participants rating themselves as good or excellent at using word processing software increased from 59% in 2018 to 65% in 2021; good or excellent at emailing rose from 83% to 90%; and good or excellent at internet banking or paying bills online rose from 72% to 80%. Good or excellent ability at finding information online showed a larger increase from 72% to 82%, and good or excellent ability at using a smartphone increased massively from 49% in 2018 to 63% in 2021. See Appendix 3 for details.

The explanation for these shifts may be that self-ratings improve as technologies become more a part of everyday life. This is especially relevant to changes before and after the advent of COVID, because smartphones have become a necessity for many people for checking into venues and conducting activities online has become a norm globally.

People who have spent the greater part of their lives using these technologies may also have a better ability to use them than people who lived many years of their lives without them. For example, people in their 50s may have better digital abilities than people in their 80s simply because digital technologies have been present throughout their adult lives, so they are more used to them. However, this explanation is unlikely to be the correct one for this study because the 2021 survey had a lower proportion of participants from the 50-59 and 60-69 age groups than the 2018 survey (see Appendix 1 for age breakdown).

Reported changes in ability since COVID-19

In addition to comparing quantitative differences between responses in 2018 and 2021, we asked participants to comment on whether their ability to use digital technologies had changed since COVID. Of the 1,335 people who wrote a comment for this question, 211 (16%) said their ability to engage in these activities had changed since COVID, 832 said it had not, and 292 offered a more ambiguous kind of answer.

As for the 'frequency' question, some of the 'yes' and 'no' type responses simply indicated that the respondent's abilities had changed, or that they had not, Again, most of the 'no' type responses (over 750) were of this sort. Other respondents elaborated further.

The COVID-related change in ability that respondents noted most often was learning how to use video call and video conferencing platforms (over 120 responses). Zoom was the

platform mentioned most often but others featured too, including telehealth appointments. A few people also mentioned an increased ability to use adjunct technologies such as webcams. Some were excited about these developments, while others would like to see further improvements to their abilities:

"I've become proficient at Zoom and MS Teams through necessity."

"I have had to learn Zoom and FaceTime and understanding how to use them has made a huge difference in relieving the sense of isolation that the Covid lockdown has caused. I now use both frequently and confidently."

"I was going to say no, but we have attended our regular church services by Zoom ever since March 2020. So yes Covid has impacted on our social activities and has changed the way we do things. We expect this to continue for some time as my wife is immunocompromised as a result of heavy chemo treatment and we are limiting our contact with others."

"I can now use zoom - and use it quite a bit"

"I had used Zoom for work before COVID-19, but my skills improved."

"My Zoom and Teams skills have become finely honed."

"Am confident with Zoom which I hadn't heard of before COVID"

"Zoom has entered my life and it is good!!"

"ZOOOOOOM"

"I'm Zoom-hosting like crazy. Lots of people are using Zoom but in my age group, it's still only a subset who know how to set up and operate a large Zoom meeting, particularly so with things like running polls (which I have used to run voting in AGMs), breakout rooms, etc."

"Any changes coped with as they occur with the help of online seniors computer clubs and a range of other nfp [not for profit] community network webinars and zoom meetings sourced online during Covid-19 lock down."

"Forced into videoconferencing for volunteering and social contact. Would like to be much more confident in using the tools - especially for volunteering."

"It has changed - I've done video calls with family and learnt about Zoom. But I still feel uneasy with my security using these features and unsure how to use them properly."

"I've used zoom but only with the direction of others. I can be taught and follow the steps to do stuff, but have no instinctive knowledge as to how to do something."

A small number of people said they did not like or did not trust Zoom, or that they have not been able to use Zoom and have missed out on opportunities as a result:

"My use of internet has increased eg zoom, facetime etc. I don't like it, hit and miss on my competency, very frustrating. the environment changes so much so often one can hardly keep knowledge current."

"Hate using Zoom"

"everything has changed for me I am a social person but am not good at zoom meetings"

"I have missed meetings because I find Zoom impossible."

"Pressure to use zoom etc.etc.etc. I have no interest in it, and I have nobody close handy to help me with it."

"No, I would have liked to learn how to zoom and what I needed to have to be able to do this as I have most of my family in different countries around the world."

In addition to video conferencing, around 75 respondents commented on how life under COVID had changed their banking and shopping habits. About a third of these did engage in online banking or shopping, many doing so for the first time because of COVID:

"Started using internet banking during covid!"

"I buy more online than I did. For example I never shopped for groceries prior and I have bought more household goods on line."

"And of course online shopping became a bit more necessary with the lockdown in Melbourne so I was able to explore more of this. As I hate shopping for clothes etc I find online shopping wonderful!"

"So much easier to buy household needs online! No risks to health having everything home delivered. Enjoy the specials offered by many places online."

"I refuse to do any form of internet banking online as I have been scammed twice in the last decade. However in late December 2020 I went to the local branch of my credit union and a lovely staff member loaded their app on my smartphone and took me step by step through what it provides. I have since Bpaid utility accounts, transferred money in payment of services rendered and transferred funds within my personal accounts. This has relieved some stress of modern day banking."

Hesitance or refusal to use internet services, especially internet banking, was a more prominent sentiment than embrace of these technologies. There were a range of reasons for this including past experiences or the fear of being scammed:

"My husband and I have purposely opted not to use internet banking. This is a choice we have made."

"As a practicing JP I would never use internet banking and nor is it recommended seniors use it, we will never be as smart as the hackers and should not allow any banking details to be put online. Also we need to arrange a separate card with access to a limited amount of money to be used for internet purchases. I am as sharp as a tack and have been hacked three times from a debit card for smaller amounts of money, there are very smart people working the internet and anyone using internet banking will be caught it is just a matter of time. Paying bills online ok until it is not, pay over the phone from a debit card is a better way, once the bank details are put onto the internet they pose a danger."

"I choose not to use on-line banking, I choose not to use wifi on my phone because I have no faith in on-line privacy or security. I have had my bank account accessed illegally."

"No - I was a victim of a ransomware virus but good fortune thwarted the attempt but because of the experience I decided that I would not use internet banking anymore. I feel safer now while using my computer and I can walk to my bank branch so easily if I need to do banking."

"I don't trust internet banking. Too many friends have had troubles either being hacked or scammed. My phone is not connected to the internet as the iPad is sufficient for my needs."

"I don't do online banking as I don't feel comfortable putting financial details online, but I do pay bills when there is a direct link."

"It isn't that I can't - it is that I WON'T. No way will I put my credit card numbers on this thing and that is the way it is."

"Not really. I only do what I'm comfortable with and trust, not what companies and banks try to push you into because it is better for them and gives them more access to your financial life."

"I use internet banking but get lost trying to pay bills!"

"Forced to shop online - prefer not to"

Solidarity with bank staff and others whose jobs may be at risk if technology replaces them was also a reason for mixed or negative feelings towards online transactions:

"I have learnt to use internet banking but am sad that it does my friendly bank tellers out of a job."

"I will never pay bills or bank online. It is not secure. Plus, I do not receive a salary for doing the work of bank staff."

"No, this hasn't changed since COVID-19 but I should clarify the fourth question. I pay some bills online. I don't do internet banking. I prefer dealing with a human. I was once asked by a bank teller had I ever considered internet banking. I asked her why she was trying to do herself out of a job?"

About 25 commenters mentioned QR codes and COVID contact tracing apps in the context of improved abilities. However, once again, not everyone was happy with the heavy reliance on these and the expense entailed:

"Had to get a new phone for the QR code app to work. Previous phone was 'over 2 years old' according to The Phone Surgery, and was too old to cope. An expensive exercise!"

"I had to borrow money to buy a smart phone. It's an expensive gadget used for QR code. I haven't got used to it."

"Yes I have had to upgrade my phone. I am not sure about these QR codes as I don't really understand them"

"The silly state government made restaurants/cafes have patrons sign in during Covid 19 using a QR code. One needs an I-phone and the knowledge to do so. I don't know many seniors with an internet phone. If one didn't have this device, one was refused service!"

"With the wider introduction of electronic [QR] codes when you enter for example a restaurant/hotel dining room I am treated like a 2nd class citizen as I don't have a modern "smart" phone and have to resort to pen and paper to record my details which is reluctantly provided. In my wife's case a similar situation has also arisen when the sign in app on her phone does not work properly as intended."

"No change, apart from more friends/acquaintances co-opting me to help load/use the covid-related apps etc. Based on my older rellies - it is wrong for the government or software designers to assume that everyone has a mobile/smart phone - even if older folk have one (usually thrust upon them by well-meaning relatives) some can barely make a phone call with one, let alone use an app or scan a QR code. And some businesses seem to be opting out of their responsibilities and simply posting a notice with a QR code without checking that it has been entered, or providing a handwritten alternative."

"smart phone, what is smart about it I'd like to know; QR code give me a CARD with the info imbedded into it, to tap against an EFTPOS machine as I do with my Debit or Credit cards. It would be considerably faster than the fiddle fuddle I see when people use their so called smart phone and it would give independence to those without a mobile phone and save many many many working hours for small / all businesses where the friendly staff (and I have asked them) are more FED-UP and FRUSTRATED with having to sign people in. It is so time wasting for them and their customer, but a necessary evil all the same."

"Having to register at shops is becoming digital and therefore a problem"

Other changes respondents noted in their technological abilities included buying a smartphone for the first time, learning to use a new kind of device (e.g. switching from Android to Apple or library computer to tablet), learning to use phone apps, linking different devices such as phone to TV, going cashless, streaming content, messaging people and using online chat, playing with and home-schooling children online, working from home, accessing new kinds of online permit, and signing documents electronically. Again, some of the improvement was forced and not easy. In some cases, respondents had not yet taken the action they saw was on the horizon:

"Yes. I had to buy a new computer and it has been very difficult to get familiar with it because of its new look and functions. It's the same with my phone. I had to upgrade it and it is different from what I have been used to."

"I purchased my first smart phone in the Covid phase but it has been a bit of a challenge at times."

"Only just started using a smartphone, they're more difficult, prefer using a computer."

"The cost of a smartphone, when unsure as to how to use one, is cost prohibitive for a person on a fixed income/pension."

"It has changed as they are MAKING me use it and it really stresses me out. And I am already on depression medication"

"Don't own a smart phone and Since COVID-19 realize I now need a smart phone"

"Have a normal mobile. Am updating soon because of COVID-19."

"Don't own a smartphone. My phone is only for calls, messages, photos. This has caused issues with all COVID-19 downloads, apps etc as I cannot do any of these things. Another problem is that if I seek help at my Library, on getting home, my screen setup for phone or downloads do not match the information I have been given. So I cannot proceed."

"I don't own a mobile phone to save costs as it's an easy thing to do without given I already own a computer and am used to using it. Lack of mobile phone has been an issue at times tho and may be an issue for Seniors generally as I've read 18% of Aussies don't own them and the majority of these are Seniors. Early in the pandemic when Woolworths stopped delivering to all but priority customers I was unable to register as their form did not permit entry of landline data. I phoned them to point out that lack of ability to enter landline phone numbers excluded many of those who were in the group they were trying to serve without success. I've also had difficulties with online banking recently as we can no longer change a password without a mobile phone as they no longer email a change form and instead require attendance at a bank. I would like National Seniors to promote access to services for Seniors without mobile phones."

Other obstacles respondents mentioned included bushfire related connectivity issues, the lack of available and accessible help, illness or disability constraints, limits to data, limited funds, or generally a lack of need or interest. Some people said their skills had not improved because they were already proficient, while others said they did not improve because they were not tech savvy.

Some respondents simply said their skills had improved since COVID through greater use:

"I am using the Internet for about 2 months - still learning"

"Got better at just browsing the net"

"I've learned to use my phone a little better."

"I am never too old to learn something new. Covid has given me the time to improve my skills by spending more time on my laptop/ mobile."

"I'm more tech savvy since working at home I have to work out IT issues myself"

"I've become better than excellent"

Around 120 commenters said their use of these technologies had increased in frequency or had changed in some other way, but they did not comment on changes to their abilities or said their abilities had not changed. About 50 people simply wrote comments like "no smartphone" in answer to this question, or said they had a smart phone but only used it for calling and texting, seeming to suggest that their abilities had not changed, but this was not always clear. Some mentioned Zoom and other video conferencing platforms, possibly implying that their ability to use Zoom or similar increased too, especially if they learned it for the first time. We classified all these response types as ambiguous when counting the numbers.

Comfort with digital technologies

The degree of comfort with digital technologies is another key measure of digital engagement. A person might use digital technologies and services often and their abilities may be good enough to meet their needs, but that does not necessarily mean they are confident within, or happy about, the digital world.

In contrast to the frequency and ability trends, levels of comfort with most digital technologies appeared to decrease between 2018 and 2021. The surveys asked about comfort with several specific digital activities, and on most measures the proportion expressing comfort with them fell. In 2021, a slightly lower proportion of people said they were "very comfortable" using self-checkouts at the supermarket (51% in 2018 fell to 48% in 2021), using ATMs (83% to 79%) and resolving minor issues with technical devices (40% to 34%). Comfort with online dating was also lower, but very small numbers of people engaged in it, and it remained "not applicable" for over 88% of participants in both 2018 and 2021. In 2021 an extra question was added regarding comfort with online video calling, and 59% of participants expressed some level of comfort performing this task. See Appendix 3 for details.

Some responses to using self-checkouts and ATMs were motivated by COVID restrictions and concerns about these technologies' impacts on jobs. These themes are explored further in the qualitative analysis below. The lower proportion of people "very comfortable" with resolving minor issues with technical devices could be partly explained by the fact that COVID circumstances forced many older people to use new devices such as smartphones as noted in previous sections. Using a device does not mean people feel able to troubleshoot problems, and this situation may have made people feel less comfortable by exposing them to technical issues they would otherwise never have been aware of.

Regarding online shopping, while the proportion of participants rating themselves "very comfortable" fell by 1% (38% to 37%), a greater proportion rated themselves "somewhat comfortable" (24% in 2018 versus 28% in 2021) and fewer participants responded that this question was not applicable (27% in 2018 and 24% in 2021), so the proportion of people expressing some comfort with online shopping actually increased overall.

Reported changes in comfort since COVID-19

In addition to comparing quantitative differences between responses in 2018 and 2021, we also asked participants to comment on whether their comfort using digital technologies had changed since COVID. In line with the response rates for the 'ability' and 'frequency' questions (discussed above), 1229 people left a comment in response to the question. However, the vast majority answered in terms of changes in their abilities or frequency of use, not comfort, or they simply mentioned a form of digital technology without further

comment. To avoid repetition with the ability and frequency questions, and to avoid over-interpreting ambiguous answers, we limited our analysis for this question to responses that specifically spoke to the theme of increased comfort since COVID. For example, if a person said "Yes, I've used Zoom for the first time", we classified that as a change in ability, a comment like "Yes, more video calling" we classified as a change in frequency, and comments like "Zoom zoom zoom" we classified as ambiguous. After excluding these and other irrelevant responses, we ended up with a much smaller dataset of 206 responses that spoke to the theme of comfort.

The reduced dataset revealed that the question itself was ambiguous. The word 'comfortable' was intended to refer to confidence in one's abilities, but it can also potentially mean ethical approval of the technology, a simple like or dislike of the technology, or discomfort with non-technological issues associated with digital technologies such as security or accessibility:

"commenting on above question language - 'comfortable'? Do you mean comfortable in the sense of capability using? Or ... comfortable in the sense of liking/disliking?? I'm comfortable in the usage sense of above questions but don't like using aspects of above - do you see the difference??"

"'Not comfortable' because I choose not to do the actions - not because I can't"

"No it hasn't changed however although very comfortable with Self Checkouts and ATM I purposely refuse to use as they take away jobs and eventually control our lives."

"I have always been reasonably comfortable with technology but am becoming increasingly cautious because of all the ways one can get scammed or hacked by just using everyday technology devices & services"

"Online dating - it's not the technology that's an issue, it's the scammers!"

"I think you need to reframe the question of VC [video calling] - I have used VC since it was possible but have problem now due to hearing. In principle great and in particular for country people - and I will be chatting to my daughter and grandson this afternoon but bound to get something wrong!"

These types of responses that identified the ambiguous meaning of the question give reason to exercise caution when interpreting the statistics reported above.

In line with this, one of the question's listed digital activities stood out as being ethically uncomfortable for many respondents. Over half of the 206 responses (121, 59%) mentioned

self-checkouts at the supermarket, with almost all these commenters saying they refused to use self-checkouts for ethical reasons. The main reason was that, in their view, the checkouts put people out of a job. This position was generally unaffected by COVID:

"I refuse to use self checkouts as there are few enough jobs in the town I live without the supermarket cutting out more of them. If possible I use customer service at the bank as well, for the same reason."

"Re using Self Check-outs: Can, but will not use self check-outs on principle - to me they represent people losing their jobs or being cut back on hours."

"Refuse to use self checkouts, not my job to do supermarkets work"

"Nothing has changed for me. I refuse to use self checkouts as I don't work for the store or get a discount for doing someone else's job. If there are no [staffed] checkouts available and if there is not a staff member available to put my shopping through the self-check out, I will abandon my shopping and go elsewhere."

"Won't use Self checkouts as I like the personal touch."

"I find online shopping and self checkouts as pure evil and completely unnecessary on a day to day basis."

"Increased use of self-checkouts, which I dislike due to lack of human interaction, and the possibility of more jobs being lost to machines."

"I will never use self-service checkouts, these were introduced to reduce the actual number of full and part time employees. The stand I have taken is not to use this facility. If my preferred checkout is not available, I put down the purchases I was going to make and leave the store."

A few people mentioned other reasons for avoiding self-checkouts, such as frustration when the technology malfunctions, concerns about COVID transmission, or enjoying the personal interaction they would normally have with checkout staff.

As noted above under the 'ability' question, some people also mentioned ATMs in the same vein, wanting to avoid using them because they represent lost jobs, but in some cases being forced to use them more because of closed bank branches. Some respondents expressed hesitancy to use ATMs for security reasons, preferring to only use them in safe locations or to take out cash at the supermarket. A few people said their use of ATMs had declined in recent years, including during the pandemic, because of the move to cashless transactions:

"I have not used self checkouts or an ATM machine for about 12 months. I have been staying at home and relying on deliveries because of health issues with COVID. I have lost some confidence as a result. I expect to regain it if I ever return to my old life."

"Have not had a need to use an ATM for some years. All my banking is online. I use the iphone 'wallet' to pay for most things."

Other listed activities received different kinds of comments. Respondents expressed a variety of views on their comfort with online shopping, with many mentioning reasons unrelated to their digital skills for feeling uncomfortable with it. These included a preference for looking at what they were buying in person, wanting to choose the quality and brand of goods themselves, and enjoying the real-world shopping experience. Some people who had tried online shopping were put off by deliveries not arriving or going to the wrong address, receiving bad service including no refunds for inappropriate goods, and encountering online system problems, especially at the beginning of the pandemic when online shopping services were overwhelmed with customers. Security risks were another reason people hesitated to use online shopping, and some did not like the marketing emails they received when signing up to an online service. Some people said they would browse and compare goods online before making purchases another way. Very few people mentioned discomfort with the technological aspects of online shopping, but one reason of this kind was the need to keep passwords for everything.

Similarly, all comments about online dating specified non-technological reasons for feeling uncomfortable with it, including scam risks, fake profiles and discomfort with the kinds of information online dating services collect from customers. Many people simply did not wish to use such services because they were in a relationship, happily single or had waning interest in intimacy. There were no positive comments about online dating.

The one digital activity that people most often expressed comfort with in comments was video calling, though again experiences were still mixed on this. Some people simply did not like online calls because of poor quality sound and picture, their limitations for people with some kinds of disability, the awkward and unnatural nature of conversations conducted online, or because they felt people don't look their best during online calls. A few respondents were concerned about the disadvantage that reliance on such technologies posed for seniors who are not comfortable with them or cannot use them, for example conducting housing strata meetings online with no alternative options. But in the general sense of feeling confident to use the technology, many people noted that this had improved under COVID:

"Yes. I have become more comfortable with video calling, workshops and meetings."

"Yes. I am using online video conferences much more, and becoming more comfortable with it."

"Yes, I have had to get used to video calling and meetings."

"Use of FaceTime, zoom etc have been a learning experience. I feel comfortable contacting family etc thanks to the quarantine we have suffered in Victoria"

"Slightly more comfortable with being video called"

"Online calling is much more used since covid. This includes friends, especially those interstate - I felt it was more important to see as well as talk with them. This is now more of a habit, and I'll probably use video calls more than just voice calls into the future."

"much more use of on line video calling - gone from not comfortable to very comfortable"

"More use and therefore more comfortable"

"More comfortable with Zoom than 12 months ago!"

At the same time, some respondents were still somewhat uncomfortable with video calls, even if their technical skills had improved:

"Never done video calling or zoom meetings before covid but now somewhat comfortable with them but would only use this medium if absolutely had to. Would find other alternative if I could."

"I have had to use Zoom but still don't like it"

"Zoom has been new to me in this Covid phase but I'm not comfortable with it."

"I dislike video calls and speakerphone call with multiple people but have accepted doing them, so as to keep in touch with friends and family."

The final digital activity the question listed was fixing minor technical issues and only a few commenters wrote about their levels of comfort with this. For some it is not a problem, but for others it entails high levels of frustration, even when they are comfortable with other digital technologies:

"I have an engineering and science qualification so will attempt to resolve computer and phone issues."

"I have become more relaxed with technical issues with the computer and internet but when they fail I have to control myself from panicking. I am not quick at fixing technical faults as I tend to forget what I did last time."

"Hated video calling before, now it doesn't worry me. Have become more uncomfortable with fixing technical issues though - and the television and all its gadgets/apps is just the worst."

"I find mobile phones hard as there are no written instructions."

"I get distressed when the technology doesn't do what I expect, but I am getting better at looking up online how to fix things. I have learned that it's not just me - my issue is usually revealed to be shared by others."

Two respondents mentioned specific effects of COVID on their comfort with digital technology that we did not ask about in the question:

"Since covid no seniors computer group locally they have stopped classes since 2019."

"Was HELL doing Aust Tax return with community helper because I didnt have some type of computer programme so she could see me and my paperwork. But she persevered without it. It took 8 hrs over 2 days where normally I see tax helper at local community centre face to face takes half hour."

Finally, some respondents shared their general views on digital technology and how it had impacted their lives. For some, new technologies had presented an array of problems that had made their lives worse:

"I refuse to use self checkouts because it costs jobs. On the odd occasion I have tried I need help. No change during Covid. Increased ATM usage became more frequent because branches closed during lockdown and beyond. I found this annoying because I would have had to go into the city to deposit cheques or arrange bigger withdrawals. A problem with my computer meant that I couldnt access a few of my usual programs and couldnt help from usual sources. Telstra wasnt answering calls for help either. I tried online shopping for the first time during Covid and only 2 out of 4 parcels arrived, so I wont waste my money doing that again. I dont know how to use paypal so by paying with credit card I lost the money. I tried to chat with friends on zoom but we couldnt work it out and went back to video chat on facebook."

For others, new technologies had improved their lives when it specifically met their needs:

"Yes i am more dependant on technology now it's a lifeline, a security blanket, keep it by bedside - in case!"

"Become aware that there is so much out there that I do not know. Have done a few courses over the years but really it is better to learn what you need rather than a whole lot of other stuff which you might never use. My nephew sent me an App the other day which teaches how to cook the perfect steak! Wonderful. Struggled all these years and now I have an app that will take the guesswork out of steak cooking on my Weber Baby Q. What a delight!! I have a colleague who stoutly refuse to have a mobile phone or any other device and she has missed out on so much. Our Book Group was able to seamlessly adapt to Zoom meetings and for a whole year she has missed out on our meetings because of her intransigence."

Attitudes towards digital services

As well as asking people about their frequency of use, digital abilities and comfort with digital technologies, we asked an array of questions to gauge their general attitudes to the digital world and their relationship to it.

There was evidence of greater frustration, but also greater acceptance, in attitudes towards digital services in 2021. In 2021, more people agreed that they felt frustrated using digital services than in 2018 (32% rose to 46%). At the same time, many more agreed that digital services made their lives easier (71% rose to 87%). While there was a large increase of 17% in the proportion who agreed they would always prefer to talk to a person than communicate online (65% to 82%), the proportion who agreed that online services can sometimes be more useful than face-to-face contact or telephone contact also rose (56% to 64%). These may seem like contradictory responses, but they make sense in context, as is apparent from the free text comments which we discuss below.

The perception of a generational divide increased in the period. More people in 2021 agreed digital services were designed for younger generations (37% rose to 45%). Most strikingly, while three-quarters of people in 2018 agreed generations use digital services differently, almost everyone surveyed in 2021 agreed with this statement (76% rose to 95%).

More people were worried about the privacy of their information online in 2021 than 2018 (75% increased to 85%). There were also small increases in the proportion of people wanting more training in digital services (53% to 59%) and the proportion who agreed that the cost of digital services was prohibitive (15% to 18%). See Appendix 3 for details.

Qualitative analysis of attitudes towards digital technology

As for previous questions, participants had an opportunity to write a comment in response to this set of questions. The 460 people who wrote comments approached the topic from a range of angles that reflected the breadth of the original prompt statements. Despite their diversity, analysing the comments together gives a relatively clear picture of what works and doesn't work for older people about digital services. Many comments focused on meeting communication needs through digital and non-digital forms of communication, especially to solve problems, so the results offer practical advice for anyone seeking to communicate effectively with older Australians.

Major theme: Pre-produced and form information versus live conversation

The major theme drawn from these comments pertains to the benefits and costs of different communication media and modes. The consensus was neither wholly negative nor wholly positive, instead treading a middle road in which digital communication services are useful under certain conditions and not others.

One basic principle is obvious: if the communication is effective, for many people it doesn't matter what the platform is. However, people's disabilities and other circumstances can impact the effectiveness of some forms of communication, and different approaches to communication are needed to suit different communication aims and topics:

"Digital services are great as long as they work or you don't have an issue that you need to discuss. If you have an issue, then face to face or at least talking to someone via phone is preferable to digital solutions."

"Many of the answers to the above questions depends upon the circumstances. Generally, it is better and much quicker to do your business online than waiting to talk to somebody via the phone or drive and find a car park to see someone. However, if you want to discuss a complex matter or a matter that is nuanced, then a discussion either face to face or by phone is preferable. So, it depends."

"Face to face or voice contact is better if you need to find out specific details, & need to go back a forth a few times. Online is good to keep a written record of communication"

"As a person with hearing difficulties I became unable to decipher the conversation of a caller on a landline (and often face to face as well). With new hearing aids connected to my iPhone via Bluetooth I can now have successful telephone conversations. Digital services are essential to me. I am reticent to join training courses on digital technology in a group situation because of my hearing. I would probably do better online. Poor microphones on personal computers, reverberating rooms and poor microphone use can be a problem for me."

"My tracheostomy limits my communication"

A prominent take-home message in this regard is the important distinction between accessing pre-produced information and form-based help on the one hand and talking to a person on the other hand. This distinction holds true for many older Australians, irrespective of the communication medium being discussed. For example, when a person needs a problem solved, talking to a person face to face, via phone or even via chat applications is often preferable to any kind of pre-produced information. Some older people want to be able to access pre-produced information initially to solve problems, but ultimately most want to be able to access live communication whenever they need to, with a person who can provide answers beyond form-responses. Taking all of this into account, including different kinds of disability, the ideal communication set up would be to allow multiple methods of accessing information and assistance to accommodate different needs:

"I will often access websites to see what info is online before I phone to make an enquiry."

"I prefer the convenience of digital but in some circumstances phone or face to face is more productive."

Pros and cons of specific communication media

Beyond that major conclusion, respondents also shared their views on the benefits and costs of specific communication media, including call centres, websites, online chat (incorporating email and texts), interpersonal telephone calls (non-call centre), and face-to-face communication.

Call centres. People expressed frustration with call centres for numerous reasons.

The first is the technological set up involved, which commenters often found alienating and annoying. People do not like having to wait in a telephone queue and perhaps losing one's place or having to wait for a call-back. People also do not like having to deal with pre-recorded or "robot" voices to select an option, particularly if numerous options are given before the desired one or before being able to speak to an operator, or if none of the options are relevant:

"The easy part of communication is the technology, the annoying part is waiting for a human to answer the call"

"You can save so much time by texting or emailing people rather than sitting on the phone for hours. I dislike going through all the numbers press 1 for this press 2 for that etc.... I dislike talking to those people who have a mechanical sounding voice"

The second reason for frustration with call centres is about communication difficulties. Some people find the lack of body language inherent to phone conversation difficult. For people with limited hearing who rely on lip-reading, phone conversation can be inaccessible. Several respondents said the volume of conversation can also impact communication. In addition, some respondents mentioned they had experienced communication difficulties when call centre operators spoke with an accent unfamiliar to them or a non-Australian dialect of English:

"I would generally prefer to speak to a person than to communicate digitally, but it is often very difficult to understand people from a call centre due to (1) my hearing, (2) my understanding of technical terms used, and (3) the accent from some of the callers."

"I enjoy listening to other accents - the cadence and inflections of them - but I have to work really hard to pick up their meaning."

"You should have a separate question about using the telephone, especially when you are forced to contact an off-shore call centre to try to resolve a problem or get information!! Face-to-face, body language, eye contact - that's communication! Too many websites use corporate-speak or weasel words, more concerned with public relations and providing 'positive' information, or selling you something. They rarely answer queries in a plain-language, straightforward manner - more likely shoehorn your round question into their square pre-set answer. Ditto call centres."

The third kind of problem presented by call centres is about call centre staff expertise. Respondents noted that call centre staff often work for multiple businesses so have limited or superficial understanding of the issues callers are facing. This means they often give scripted or form answers to questions that do not help the caller. If based overseas or interstate, they will often lack local information relevant to the caller. If the staff member is young, they may not understand the problem an older caller is having:

"Sometimes it's quicker to communicate online (via chat or lodging a query), especially with services that use offshore support - which can be really frustrating as these people tend to have to cover a variety of organisations and their knowledge is often superficial (based on scripts they follow). Also one can spend an inordinate amount of time waiting in "a queue" when trying to communicate via telephone."

"Talking to a person is often easier if the problem is not answered in FAQs. On the other hand some important callcentre operators haven't a clue what is the problem in the first case."

Websites. People expressed more mixed sentiments about websites than call centres, but most comments about websites were negative, again for a range of reasons.

First, people often find websites hard to navigate, with confusing and unclear instructions and hard to find information. It can be time consuming to track down the information they want. Some commenters felt websites are skewed towards young people:

"Personal service is still much better. Some internet site have old information or incorrect information. Websites like Centrelink are like a maze or treasure hunt."

"The newer websites are not as well designed as the old one so one can spend too much time looking for something that should have been simple. The people designing them are not intelligent enough and may be immature or not culturally attune to peoples' purposes."

"My frustration with on-line services does not derive from my lack of confidence or skill, but from the poor and untested design of so many websites etc. So many are user-unfriendly, and it's more than obvious that the brilliant IT designers have never had a user experience."

Second, help functions are frequently inadequate on websites. People variously noted that FAQ pages often did not answer their questions, help buttons are usually unhelpful, and computer-generated responses to queries were often irrelevant or were merely inadequate, pre-set answers. Respondents noted websites are not good at handling grey areas or nuance. The impersonal nature of websites can make people feel undervalued, for example if the help operator for a website is having more than one conversation at a time:

"some sites like myGov are not flexible enough to accommodate the wide range of variants older people face especially when born overseas."

"Sometimes the questions have more than one answer or are unclearly worded"

"So often the FAQ's are not the questions I want answers to."

"Organisations have forced digital services on everyone. If try to ring them they put you on hold for hours - literally: eg tried calling CBA recently and was on hold for over an hour, so gave up. It would be OK if their "help" online and robot answering system had relevant answers - but they don't!"

Third, the fallible nature of the technology makes using websites prohibitive. A good internet connection is often required but not always available, especially in rural areas and/or at peak times. Computer systems experience glitches, with some people noting this was a problem for Centrelink sites. Another example was map-based websites and applications that regularly pinned the respondent's address incorrectly:

"Rural internet services severely limit usefulness and reliability of online services"

"Some online services don't work as well as they should. There are often glitches that won't allow the user to proceed. This is frustrating, especially if you're disabled."

"You cannot always answer questions online correctly as there may be some reason why you can answer yes and no to the question but you're not given a choice and cannot ask a question of a computer! And help buttons are useless 99% of the time! Also when I had no work during start of Covid and had to go to Centrelink I could not access the system at all and after had lots of trouble getting reports in etc. So spent lots of time

lined up at Centrelink sorting out the problems which were not my problems but the systems. If I had just gone in to Centrelink in the first place I would not have wasted so much time and go so frustrated!!"

Fourth, people expressed concern about the risks associated with the anonymity of web-based communication, such as the potential for bullying and abuse.

On the positive side, the ability to access the internet 24/7 is a benefit of website-based information. At least one person noted that using web-based support can be faster than using a call centre. Websites can also be good for people with limited hearing:

"Internet Banking is an absolute boon. It is so convenient."

Respondents noted that a website's design makes all the difference, and that well designed websites make things easier.

Online chat, SMS, emails, communication apps and similar. Once again people expressed mixed feelings about online chat technologies including SMS and email. They noted these can often save time when the alternative is waiting to communicate, but they can also waste time when talking would be quicker. Some respondents felt they were a useful way to arrange for face-to-face or phone communication if needed. During housebound periods they were noted to be a great way to communicate with family and friends, though some people leave it to others to engage with the technology on their behalf:

"I find it much easier to send an email as I have time to gather my thoughts and make sure what I send makes sense."

"It's quicker and easier to ask questions online. I find online chat very useful (e.g. with telecomms, electricity companies). It's annoying holding on on the phone."

On the negative side, respondents variously mentioned disliking the expectation to respond 24/7 that comes with online chat technologies, the potential for scams and malware, the concern that emails go into the "digital void", and the draining nature of a text-based back and forth conversation compared to a phone call. Some respondents were also concerned that digital chat technologies were a threat to the art of conversation and communication values such as common sense and courtesy:

"Technology was supposed to be a great asset to us when it comes to communicating with one another. However it can be very frustrating! For us older folks we want to talk to a person! Not type sentences to a machine? Then there is the time waiting for your several steps to get to someone to answer! Once someone answered quickly! Good luck now!"

"Modern systems which force us to use "bots" or call centres when dealing with commercial enterprises are unsatisfactory. Today I spent 40 minutes in a Telstra online chat and they could not solve my problem. A human voice would have made explanations a lot simpler."

In-person communication, including face-to-face meetings and interpersonal phone calls. A lot of respondents clearly expressed a preference for communicating with others in person, especially face to face but also on the phone. The major benefits of in-person communication include the ability to explain and deal with complex problems and negotiations, because in-person communication involves dialogue and the chance to clarify points, the ability to tailor communications to circumstance, and the opportunity to build relationships with people. Some people talk better than they type or feel that having a freely flowing conversation can waste less time than undertaking a pre-designed troubleshooting process. Face-to-face communication is particularly valued for some kinds of conversation. One is when buying items, because some respondents like to see and try goods before they buy them. Another is meetings with a GP: one respondent felt doctors exhibited a higher "care factor" in face-to-face meetings compared to telehealth appointments. However, a disadvantage of live conversation is the lack of a paper trail:

"Being able to talk face to face is quicker, you pick up any mistakes as you go along, usually the transactions is completed first time, it is less time consuming, saves energy, helps one to have people contact, is non-sedentary and creates exercise going to and fro and gives you peace of mind knowing that you've paid your bills, you've changed details etc. Less stressful."

"Sometimes I have hearing difficulties over the phone. Face to face can be easier because I can lip-read."

"Prefer face to face services to digital ones. Hearing loss is a factor."

"Where face to face is important to building up the required relationship then within practical constraints that should always occur."

"Definitely speak to a person instead of a pre-recorded press 1 press 2. Or use Live Chat - totally useless. Neither of these give you the nuances of the question/answers. Lets just say I get really really angry. Even Centrelink etc do it. I get into trouble if I go into the Centrelink office - 'you don't need to come in, you could have done this online!!!!""

"Face to face communications are good - however - having a trail of what is said (eg from webchat, email, sms, messenger etc) is also good. I find I get better customer service and faster 'issue' resolution if I use Facebook or

Twitter than waiting for a call to be taken and then a discussion with a person. I HATE automated reply systems that are becoming increasingly common. It does worry me that there will emerge a negative societal / cultural change with less and less face to face contact and full form writing."

Hand-written correspondence. For a few respondents, hand-written letters were valued as comforting, personal and useful to avoid waiting on hold with a call centre or similar:

"The speed of internet and online is good, but a handwritten or typed letter is more comforting."

Other themes

Respondents also signalled other issues and concerns about digital services.

Several people expressed concern about the job losses entailed in the shift to digital services. This was occasionally linked to privatisation of essential services and the cost-cutting and outsourcing that accompany such processes. Cynically, some suggested businesses use digital technology to actively ignore clients, to shield the organisation, or to avoid leaving a paper trail, for example if a business conducts all communication through social media or chat functions rather than email. More philosophically, some respondents objected to the social disconnect and disempowerment resulting from the digital transition, with one expressing resentment that COVID had been used to *"keep people at arm's length"*:

"The push to use on-line services is not primarily about providing better service to the customer, it is all about reducing costs for the provider. I find some on-line services are good e.g. bill paying but others are a pain in the @#$%."

Some respondents were concerned that the shift to digital was premised on an assumption that it was convenient for people to do everything on their phone, whereas they preferred not to:

"My main issue is that certain activities are only available to those joined at the hip to a mobile device. I prefer to separate activities, rather than doing everything on my phone. I prefer to read paper books, make phone calls to consult experts, but use the comfort of my office desk to do searches for research, and then have my entertainment sitting in my lounge chair."

The rapid rate of change in the digital world, including the need to constantly update and re-learn devices, was mentioned by many participants as a factor that prevented them from

being able to keep up even when they would like to. The lack of clear instructions on using new digital devices frustrated some respondents, including younger people's lack of understanding about what older people need in terms of assistance. For some, the difficulty of learning to use new devices amounted to a waste of time and a harder not easier life. A central trustworthy resource or service for assisting older people would be desirable for some, but should be pitched at different ability levels, topics and needs. Some respondents described services they had used to try to improve their digital skills but found them unhelpful as they were pitched at the wrong level or concerned less relevant skills:

"Technology changes far outpace seniors ability to keep up. I have very strong feelings on how disadvantaged older persons are in this rapidly developing technical space. Governments have not considered the impacts that technology has had on older persons and developed strategies to support them."

"We are being forced into the digital world and I am trying to keep up to date with most of it but it is moving so fast."

"I have attended short smartphone courses at the local library, but they cover such a wide range of abilities (& get bogged down with individuals' specific concerns) that the learning was limited."

Some respondents noted the importance of having someone to help older people set up their digital technology, and the concern that if there was no one to help they would not be able to use the technology. Some considered it ageist of governments and businesses to insist that all transactions be done online given many older people lack experience using computers and are unable to access appropriate help:

"The increasing requirement, in particular by Government services and banks, that we do business online is age biased against older people. Many have NEVER used computers, others use them only for emails and possibly social media and to access particular interests or hobbies. Filling in Government forms online is totally exasperating. Try a Centrelink application, Citizenship application form, or renewing a Shooters License. Some staff at some Government agency offices are fantastic at helping, others are not and getting there assumes you still drive and communicating assumes you still have good hearing. On behalf of the elderly the move of public service away from service and to digitisation or VERY LENGTHY phone holds makes me ANGRY."

"i think the pressure to force us to use on line services is dreadful. there is a portion of the community that cannot read or write or use a computer and

they are becoming the lost people of society the the government wants to pretend don't exist. Many of these people have worked their own business for years and the changes particularly in the taxation department has put up their costs and they are just going to be left behind. and saying they can go to the library to get help is stupid have can they go to the library if they have to work. The government is full of dead-shits who have no imagination"

The jargon and symbols associated with digital technology, and the assumption that everyone understands what they mean, are an obstacle to some respondents' digital engagement. Some expressed a concern for the younger generation's common sense as a result. Respondents made the point that different levels of exposure to digital technology is an important consideration when comparing young and old users' comfort levels with it. They noted the need to use digital technology frequently to retain the skills once learnt, and the fact that younger people likely learn from each other whereas older people tend not to:

"The language that is used is baffling to me. Instructions are confusing. there is a perception that to use technologies you know what they are talking about. Symbols used on technology are odd words. what ever happened to a simple ON Or OFF word."

"Digital devices, apps, etc do not come with a comprehensive manual. Online "Help" has only varying degrees of helpfulness. Younger people are braver in using them, and I suspect they learn from each other. My acquaintances do not discuss their devices, apps, etc; therefore I (like many others?) am largely going it alone digitally, with mixed success."

The high monetary cost of digital technology, including monthly internet and phone bills as well as one-off purchase costs, was noted as a problem for some older people. Respondents objected to bearing the cost of the digital transition when it was being imposed by government and business:

"why do we pay for internet when its government and business that makes us use it"

"If our govt wants to conduct all its business online, then maybe they should issue us all mobiles, computers and training in their use"

Several respondents mentioned digital security, scammers, hackers, cyber-bullying and insufficient content restrictions as part of the suite of concerns about digital technology:

"There are so many scams and hackers on digital services I would feel unsafe using one to do personal business."

"I am fairly savvy using the computer, but worry about my digital privacy when using apps on my mobile telephone. I would be great if there was a website where we could go, to learn about such matters so we could learn to help ourselves improve in these areas."

Some people expressed more general sentiments, saying things like, *"Love all the Technology"*, *"I think digital services are wonderful"*, *"It depends on the situation"* or *"I would be very happy if every computer in the world blew up"* and *"If technology makes us feel disempowered and disconnected because it replaces human contact this cannot be considered progress."*

One respondent summarised their mixed views:

"Digital services have totally changed my life, and life in general… I think they have tended to trivialise sincerity, even perhaps the truth, have muffled general ingenuity, enslaved humans to data and bits of plastic, and have dramatically improved the chances of a favourable outcome to life and death situations, and triggered a move towards more 'mindfulness' or awareness".

Discussion

As with previous National Seniors studies on this topic, this report demonstrates older Australians' diverse levels of interest and skill when engaging with digital technologies and services. Many seniors are highly skilled, frequent users of digital technologies and hold positive attitudes towards them. Others are highly selective about the digital technologies they will use, for various reasons including ethical and social values. Some seniors struggle with digital technologies and services they would like to use or are being forced to use, but their struggles can take different forms including unavailable training and assistance, economic pressures, lack of appropriate infrastructure, and poor design by the businesses and organisations that provide technological services.

The results show that older people should not be stereotyped as either digitally illiterate or universally able to adapt to the digital world. The reality is more complex and must be gauged by understanding the contexts of older people's lives and the social meanings of technology for them.

Increased frequency of digital technology use and ability since 2018

The impact of context is apparent from the fact that there were some notable differences in people's patterns of digital engagement in 2021 compared to our 2018 survey on this topic.

The general societal move towards handheld smart devices was reflected in the device respondents used to complete the survey. A far greater proportion of respondents over 60 used smart phones and a greater proportion of those over 80 used a tablet. Although desktop computers and laptops were still the devices used by the majority, fewer people used them than in 2018 in all age groups over 60. People's self-reported ability to use a smart phone increased dramatically between 2018 and 2021, with 63% of respondents now rating their ability as good or excellent compared to 49% in 2018.

Seniors' self-reported ability to do a range of other digital activities also increased, if more modestly. This is likely related to the fact that 87% of 2021 respondents agreed that digital services made their lives easier, compared to 71% in 2018. When asked what apps they used, just over 600 respondents listed more than 400 apps that serve a great variety of functions. This demonstrates clearly that many older people will happily use digital technologies when they are relevant to their lives.

Some of the changes can be attributed to increased familiarity with digital technologies and forced use of them. When asked if COVID-19 had affected the frequency with which they used digital technologies or their ability to do so, almost all the respondents who said 'yes' reported an increase in ability and frequency not a decrease. The major changes these seniors reported included new abilities to use video calling platforms such as Zoom,

increased use of video streaming services such as Netflix, increased proficiency at online shopping, and the necessity of buying a smartphone and learning how to use it because of COVID check-in procedures. The frequency with which people accessed other forms of online entertainment and other social media platforms such as chat technologies also increased under COVID. People reported more frequent use of online government services in 2021 than in 2018, which is likely partially attributable to COVID, though those commenting on this expressed frustration with these services.

Decreased comfort with some digital technologies since 2018

Discomfort with ethical and social aspects of technology

At the same time as digital abilities and frequency of use increased, people's levels of comfort with some digital technologies and services decreased between 2018 and 2021. One of the more intriguing statistics to emerge from the survey was a small decrease in the proportion of people comfortable with using supermarket self-checkouts and ATMs. Over 100 comments revealed why: while people may feel technically competent at using these technologies, many are ethically uncomfortable with them because of concerns that they are putting people out of work. This seemed to be especially noticeable and concerning to people in small communities such as rural and remote towns where jobs are already scarce. A flow on effect of this, reported by some, is the negative impact it has on customers if the replacement technologies are inadequate or problematic in other ways, making banking and shopping more difficult for some older Australians.

People are also uncomfortable with some digital technologies because of security issues and scams. Many more people were concerned about the privacy of their information online in 2021 than in 2018, showing that either these problems have increased or awareness of them has.

Generally, comments about comfort levels showed that many older Australians are highly concerned about the impacts newer technologies are having on society. Not using a technology does not always mean a person cannot use it; it frequently means they refuse to engage with it on principle or prefer engaging with the world in other ways. There is discontent among older Australians with the general move to digital platforms and the decrease in alternative options, with particular concern for those unable to adapt to this for various reasons.

Money is one reason. The cost of buying a smart phone is often prohibitive, especially if it needs replacing every few years. The cost of internet services and other digital technologies can also be prohibitive to engagement. Our surveys showed a slightly greater proportion of 2021 respondents agreed that the cost of digital services is prohibitive than 2018 respondents, though in both cases the proportion was low (18% vs 15%). The significant cost

of keeping up with digital technologies to engage in basic activities like entering restaurants, banking or communicating with Centrelink prompted some respondents to suggest that government and business should subsidise the expense of buying smartphones. This suggestion seems reasonable in the circumstances.

Frustration when technology goes wrong

Seniors' level of comfort at resolving minor issues with technical devices also decreased between 2018 and 2021, while both their level of frustration with digital services and their desire for more training increased. Our analysis points to several possible reasons for this.

One reason may be the rapid pace of technological change generating greater feelings of powerlessness than in previous years, with the complexity of newer devices prohibiting effective troubleshooting by users. Some respondents' comments revealed that they have had trouble learning new technologies and have relied on others to do it for them or simply missed out on opportunities because they lacked assistance. One person's complaint that smart phones lack written instructions seems salient to this point, considering how many other kinds of device still come with a manual so are perhaps easier to understand and troubleshoot.

The increased levels of frustration could also be because the types of available assistance have deteriorated. It certainly seems clear from the open text comments that older people feel very frustrated when help services are inadequate. These include poorly designed websites that are hard to navigate, have inadequate FAQs, or rely on computer-generated answers to solve problems. They also include call centres for which there are long queues, digital voices to direct the call prior to speaking to an operator, and operators who do not know enough about the service, business or local area to be able to troubleshoot problems beyond a superficial level. In general, respondents expressed a strong preference for interpersonal interactions over digitally mediated interactions. The proportion of people who agreed that they would always prefer to talk to a person than communicate online increased from 65% in 2018 to 82% in 2021, and while the question about this did not specify the circumstances, the comments people wrote show it certainly applies to getting assistance with technical issues. Older Australians want well designed websites and also local, specialist, live phone or in-person help services which can respond to customers' specific circumstances. Aware of disabilities and other limitations, people want help and important information to be available in multiple forms to suit different people's communication needs and technological abilities.

Another possible reason for the increased levels of frustration with digital technologies is a generational divide – or at least the perception of one. The survey showed more older Australians now believe there is a digital divide between older and younger people, with almost 45% of 2021 respondents agreeing digital services are designed for younger

generations compared to 37% in 2018. Even more strikingly, almost all the 2021 respondents (95%) agreed younger generations use digital services differently to older generations, compared to three-quarters of respondents (76%) in 2018. The experiences that have created this perception are likely to adversely affect seniors' sense of self-efficacy at resolving minor problems with technical devices.

Finally, the pattern of increased frustration could be due to COVID forcing more people to use technologies they do not feel confident with. While people's levels of confidence with digital technology can increase with use as noted above, it can also be extremely frustrating to deal with such technologies when they go wrong. General discontent over being forced to rely upon new technologies is likely to magnify the sense of frustration when they don't work. Research has shown that people are much less likely to accept risk when a hazard is imposed on them involuntarily. The same may apply to lower stakes issues like failed technology, with people more likely to experience frustration when they are forced to use it than when they have free choice [11,12].

Conclusions

In following up our reports in 2017 and 2019, National Seniors changed the focus in this 2021 survey from digital use, often described as digital literacy, to digital engagement. In this 2021 survey we have gathered verbatim sentiments – that people wrote and submitted to us in the privacy of their own homes – in order to understand the ways older Australians engage with the digital world. Much of this digital engagement has been forced, with non-digital choices contracting over time, and with little support to transition to major personal and environmental changes. The sentiments of seniors expressed here clearly highlight the important fact that evidence of use does not necessarily imply comfort or preference. This was evident in the increased use of digital modes due to the pandemic but, while some revelled in it, it remained uncomfortable for some who did this only out of necessity. There is then a continuing task to hear and understand the sentiments associated with digital engagement if we are to enable older Australians to satisfy their needs and interests within this rapidly changing world.

The 2021 survey documents the progression over time of the digital revolution, shifting skill sets from the mechanical and physical to digital, intangible skills that are particularly related to online interactions, apps and using newer devices like smart phones. The lack of tangibility and sometimes the lack of visibility of apps and robotic voices are a challenge for many coming to terms with digital engagement. Socially, the digital revolution has shifted people's orientation from face to face and local to virtual and global. Is it any wonder then that many older voices, who prefer a local identity and community engagement, express a lack of comfort with this radical change?

Further, there is also a strong view in the comments from older Australians that the digital world is designed by and for young, not older people. This is another hidden barrier to acquiring the skills and motivation to engage with the now pervasive digital world. The evidence here is that much of the digital engagement is due to poor design for the needs and abilities of older Australians. There is also a need for peer learning opportunities in which older people help each other to learn. One participant noted that younger people help each other and that's how they learn, so this may be something that older people can cultivate within their families, friendship circles and networks to avoid being left behind.

On the plus side, a majority of seniors are coping with these changes with positive attitudes or resolute determination and resilience. Our results demonstrate that when the technology is designed well, is affordable and works, older Australians enjoy the new experiences, information, assistance, opportunities and sheer fun that digital technologies can bring. Many appreciate the connectivity that video-calling and group chat platforms have granted them at a difficult time in history, and the entertainment possibilities provided by video streaming services and the like. Older people enjoy apps that enhance their interests, needs

and lifestyles. Many want more training and better access to digital technologies. This report has shown that there is a need for better website and app design and improved help and support services to enable older people to use digital technologies without stress.

A major negative influence on digital engagement has been the growing influx of scams and 'junk' advertising. This is driven by the pervasive use of personal data by business, with older people being a large market to target. Without a grasp of these hidden processes older Australians are also the most prone to scams. This must be prevented by government actions and by developing older people's resilience through well-developed (appropriately tailored) information on how to identify a scam and not be caught up in them. At this point in time there are too few resources enabling older Australians to protect themselves.

Our focus on engagement has also shown that there are different reasons why older people prefer non-digital options, other than the often mis-chosen label of 'illiteracy'. Some respondents won't use digital supermarket checkouts and ATMs because they reduce work options and quality of work life for younger people. Some wariness about digital technologies can also be due to a simple preference for face-to-face interactions and community engagement.

But there are also some older people who do struggle to use digital technologies, and this can have a major adverse impact on their lives. COVID-era requirements such as online meetings, check-in apps and digital vaccination 'passports' are now commonly excluding older Australians from normal community life and social activity. It is high time, therefore, for government and business to use the savings they make from going digital to enable older and vulnerable Australians to actively participate in a digital world and enable effective workarounds for those who don't 'go digital'. It's also well overdue for governments and businesses to fund and support older people to design digital solutions that are appropriate for older people. There are seniors in our communities who are well able and keen to do this. Our report shows older Australians are hungry for technologies that support their lifestyles if they are taken seriously as digital consumers and their needs properly understood.

Appendix 1: NSSS-7 and NSSS-9 methods

National Seniors Australia is a not-for-profit, non-government advocacy organisation for Australians aged 50 years and over. Every year, National Seniors conducts an online survey of members' behaviours and views across a range of topics relevant to lifestyle, health and wellbeing. The survey is open to members and non-members aged 50 plus from all states and territories.

This report compares the results of two National Seniors Social Surveys, conducted in 2018 and 2021 respectively. Both surveys asked a series of questions about digital engagement, and those plus demographic questions provide the data for this report. The full list of digital engagement questions from both surveys is reproduced in Appendix 2.

On both occasions, a link to the survey was emailed directly to all members of the National Seniors community who had given their permission to receive online communication from the organisation. The survey was also promoted in National Seniors' online newsletter and social media channels and people had the option of completing a paper-based survey if they wished to (though few of those we mailed were returned). Questions were 'point and click' multiple choice or short answer format accompanied by free text boxes so participants could elaborate on their responses if they wished.

The 7th National Seniors Social Survey (NSSS-7) was approved by the NHMRC accredited Human Research Ethics Committee of Bellberry Limited (APP 2017-12-981). The survey was open from 14 February 2018 to 29 April 2018. The 9th National Seniors Social Survey (NSSS-9) was also approved by Bellberry Limited (APP 2020-12-1319) and was open from 15 February 2021 to 1 March 2021. Anonymous and non-identifiable responses were collected online via the survey tool Survey Monkey.

Participants

Participants from both NSSS-7 in 2018 and NSSS-9 in 2021 are included in this study. The 2018 population includes 5,466 participants, of whom 4,574 answered all the digital engagement questions and were able to be scored with Senior Surfer ratings (see Appendix 4 for more on this). The 2021 population includes 5,430 participants, of whom 3,787 were able to be scored as Senior Surfers.

All participants were aged 50 or over and all states and territories of Australia were represented among participants. Notably, the age demographic of participants varied between survey waves, with participants from age groups under 70 having a stronger representation in the 2018 population, and participants from age groups 70 and over making up a larger proportion in the 2021 population. This suggests that results comparing the differences between 2018 and 2021 should be interpreted with caution, as digital

engagement is known to be associated with age and it is possible that age differences in the cohorts being compared are the largest explanatory factor for any differences in frequency, ability and comfort using digital technologies.

Note that it is expected that some individuals will be represented in both the 2018 and 2021 populations, however as the survey is anonymised, it is not possible to link individual responses over time.

Age groups of participants in NSSS-7 in 2018 and NSSS-9 in 2021

	2018	2021
50 to 59	715 (13.1%)	329 (6.2%)
60 to 69	2,124 (39.0%)	1,731 (32.5%)
70 to 79	1,997 (36.7%)	2,493 (46.8%)
80 plus	563 (10.3%)	778 (14.6%)
Unknown	47 (0.9%)	99 (1.8%)

Quantitative analysis methods

The software package Stata v15.1 was used for all quantitative analysis. Cross-tabulation of responses was used to generate descriptive statistics for all variables.

Variables of interest

The data for this study came from the responses to the demographic questions and the digital engagement components of the National Seniors Social Surveys conducted in 2018 and 2021 (see Appendix 2 for questions)). Of particular interest were questions relating to:

- Years using the internet
- Devices used to access the internet
- Number of apps used
- Frequency using technology
- Ability using technology

- Comfort using technology
- Attitudes towards using technology
- Changes to these responses as a result of experiencing the COVID-19 pandemic.

Note that, based on feedback received from NSSS-7, the scale for rating "Ability using technology" was changed between 2018 and 2021 to include an "excellent" option, as participants had noted that having a highest rating of "good" did not allow them to accurately represent their ability. For comparison purposes between years, "good" and "excellent" have been combined in this analysis.

Qualitative analysis methods

Part of this report is based on text comments that survey respondents submitted to optional comment boxes. We analysed text comments using the thematic analysis framework described by Braun and Clarke [13]. Themes were identified through inductive analysis, i.e., data were coded without reference to an explicit pre-existing theoretical framework. However, for most questions data were in part analysed with a purpose in mind: to answer the question that was set. For example, for the question about whether people's digital abilities had changed during COVID, the text responses were analysed for answers that spoke to that question's theme of "changed abilities", not to other themes such as "changed frequency". The analysis was guided by a critical realist approach that aimed to summarise and reflect participants' views as accurately and objectively as possible, without reading other layers of meaning into them. The researchers acknowledge the influence of their pre-existing theoretical knowledge and understandings on the themes identified from the data.

Quotes from survey participants were selected both to illustrate the variety of ideas expressed by the cohort and to demonstrate the prevalence of commonly articulated ideas. Sometimes using quotes entailed reproducing only part of a person's comment if the rest was not relevant to the theme. We endeavoured to reproduce each selected quote verbatim whenever possible. In a small number of cases, we omitted or altered part of a quote for clarity and indicated this with square brackets []. In additional cases, minor typos, obvious missing punctuation and obvious spelling errors were corrected for readability (no square brackets). Quotes were only corrected in this way if there was no ambiguity about the participant's intended meaning in the part of the quote that was corrected. All other phrasing idiosyncrasies were retained in the quotes.

Appendix 2: NSSS-7 and NSSS-9 questions about digital engagement

This appendix contains the full list of questions related to digital engagement that we asked people in the two surveys (NSSS-7 2018 and NSSS-9 2021). The year or years that each question was asked in are indicated.

- How long have you been using the internet? (2018 and 2021)

- What devices do you use to access the internet? (2018 and 2021)
  - A desktop computer
  - A laptop or notebook
  - A tablet
  - A mobile phone
  - Other (please specify).

- What device are you using right now to complete this survey? (2018 and 2021)
  - A desktop computer
  - A laptop or notebook
  - A tablet
  - A mobile phone
  - Other (please specify).

- How are you completing this survey? (2018 only)
  - On my own
  - With someone else but I'm entering the responses
  - With someone else entering responses for me.

- Have you ever been the victim of an internet scam? (2018 only)
  - Yes
  - No.

  Participants had the option of providing a free text comment about their scam experiences.

- How would you rate your ability to do each of the following? (2018 and 2021)
  - Using word processing software like Microsoft Word
  - Finding information online
  - Emailing
  - Doing internet banking or paying bills online
  - Using a smartphone.

  Answer options for all: I can't do this; Poor; Acceptable; Good. *In 2021 we added the fifth option:* Excellent. *Participants in 2021 also had the option of providing a free text comment about changing abilities since COVID-19.*

- How comfortable are you doing any of the following? (2018 and 2021)
  - Using Self Checkouts at the supermarket
  - Using an ATM
  - Resolving minor issues with technical devices (e.g. computer, phone, TV)
  - Online dating
  - Online shopping
  - Online video calling (this last activity 2021 only).

  Answer options for all: Very comfortable; Somewhat comfortable; Not comfortable; Not applicable. *In 2021, participants had the option of providing a free text comment about their changing comfort since COVID-19.*

- How often do you do each of the following? (2018 and 2021)
  - Use an internet search engine (e.g. Google)
  - Do banking online
  - Access government services online e.g.myGov
  - Send a text message
  - Use Facebook
  - Use LinkedIn (2018) or Use other social media (2021)
  - Use TV or movie streaming services e.g. Netflix, Stan, Prime (2021 only).

  Answer options for all: At least every day; At least once a week; At least once a month; Rarely; Never. *In 2021, participants had the option of providing a free text comment about their changing frequency of use since COVID-19.*

- Do you use any of the following apps on a smartphone or tablet? Please select all that apply. (2018 and 2021)
  - I don't use apps
  - Facebook
  - LinkedIn (2018 only)
  - Uber
  - Instagram
  - Twitter
  - WhatsApp
  - Skype
  - Zoom (2021 only)
  - Netflix (2021 only)
  - Maps (e.g. Google maps)
  - An internet banking app
  - A music app (e.g. Spotify, iTunes)
  - An email app (e.g. Yahoo, Gmail, Outlook)
  - A weather app
  - Express Plus Centrelink app
  - Express Plus Medicare app (2021 only)
  - COVIDSafe app (2021 only)
  - Other (please specify).

- Please say whether you agree or disagree with the following statements about using digital services in general: (2018 and 2021)

  I feel frustrated using digital services
  For some tasks, I prefer to interact online rather than face-to-face or on the telephone
  I would like more training using digital services
  I worry about the privacy of my information online
  Mobile phone and internet costs prevent me from using digital services
  Digital services are designed for younger generations than mine
  There is a digital divide between generations
  Digital services make my life easier
  I would always prefer to talk to a person rather than use a machine.

  In 2021 the response options were expanded from Agree *and* Disagree *to a 6-point Agreement scale:* Agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Disagree; It depends*. Participants in both years also had the opportunity to write free text comments in response to this question.*

- Not everybody is the same when it comes to "surfing" the internet and using digital technology. Consider the options below. If you had to choose, which kind of a "Senior Surfer" would you say you are? (2021 only)

Super Surfer	I'm very comfortable using the internet and digital technology in my everyday life
Savvy Surfer	I'm comfortable using the internet and digital technology, but I don't use it that often and/or there are some areas that I'm not that comfortable with
Sometimes Surfer	I use the internet and digital technology when I have to, but I'm not always comfortable or very good at it
Seldom Surfer	I use the internet and digital technology but not very much and I prefer other ways of communicating/getting things done.

  Participants also had an opportunity to provide free text comments, with the prompt: Please tell us more about what kind of Senior Surfer you are if you would like to.

Appendix 3: Detailed quantitative findings

This Appendix shows the numeric details of the survey results discussed in the text, including comparisons between 2018 and 2021 and results of questions asked only in 2021.

Devices used, by age group

As discussed in the main text, use of desktop and laptop computers declined during the period while use of mobile phones and tablets increased. These shifts were especially marked in older age groups, with phone use doubling for 70+ groups and tablet use almost doubling for the group aged 80 and over.

		 DESKTOP COMPUTER	 LAPTOP COMPUTER	 TABLET	 MOBILE PHONE
50-59 years	**2018** (N=715)	33%	26%	21%	20%
	2021 (N=329)	31%	29%	19%	21%
60-69 years	**2018** (N=2124)	36%	30%	20%	14%
	2021 (N=1731)	30%	27%	20%	23%
70-79 years	**2018** (N=1997)	46%	30%	18%	7%
	2021 (N=2493)	39%	27%	20%	14%
80 years +	**2018** (N=563)	60%	26%	11%	3%
	2021 (N=778)	52%	22%	19%	8%

Devices used, by gender

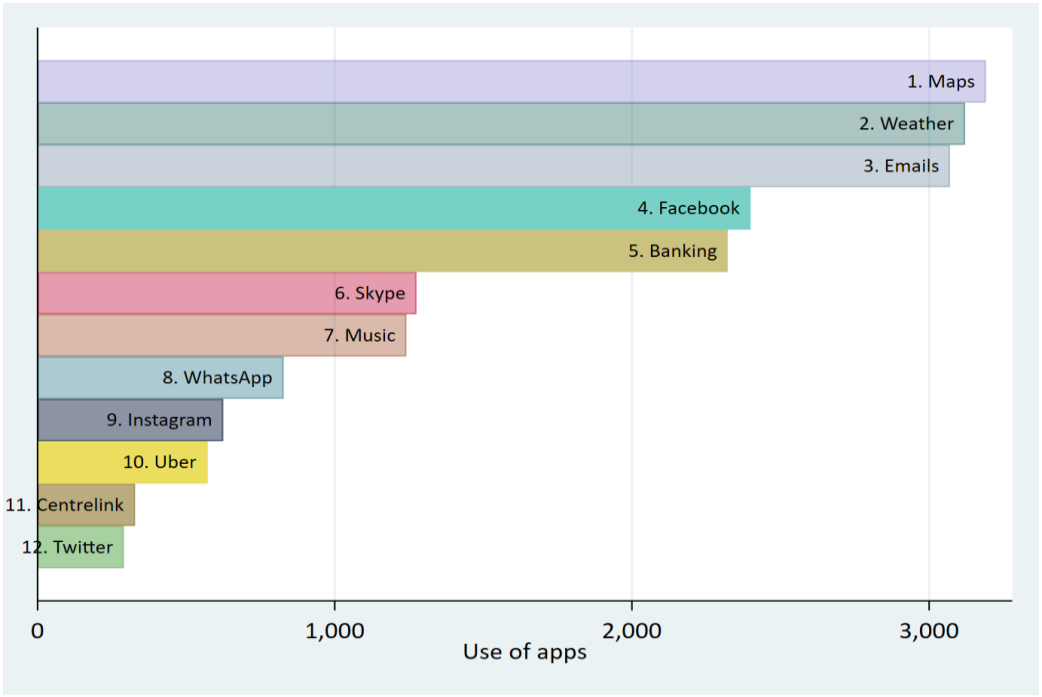
The patterns by binary gender were marked, with women using the four device types almost equally, while men showed a strong preference for desktop computers and a much lower preference for tablets and phones.

		 DESKTOP COMPUTER	 LAPTOP COMPUTER	 TABLET	 MOBILE PHONE
Women	**2018** (N=3,073)	35%	29%	23%	13%
	2021 (N=2,980)	29%	25%	25%	20%
Men	**2018** (N=2,316)	50%	30%	12%	8%
	2021 (N=2,391)	47%	27%	13%	12%

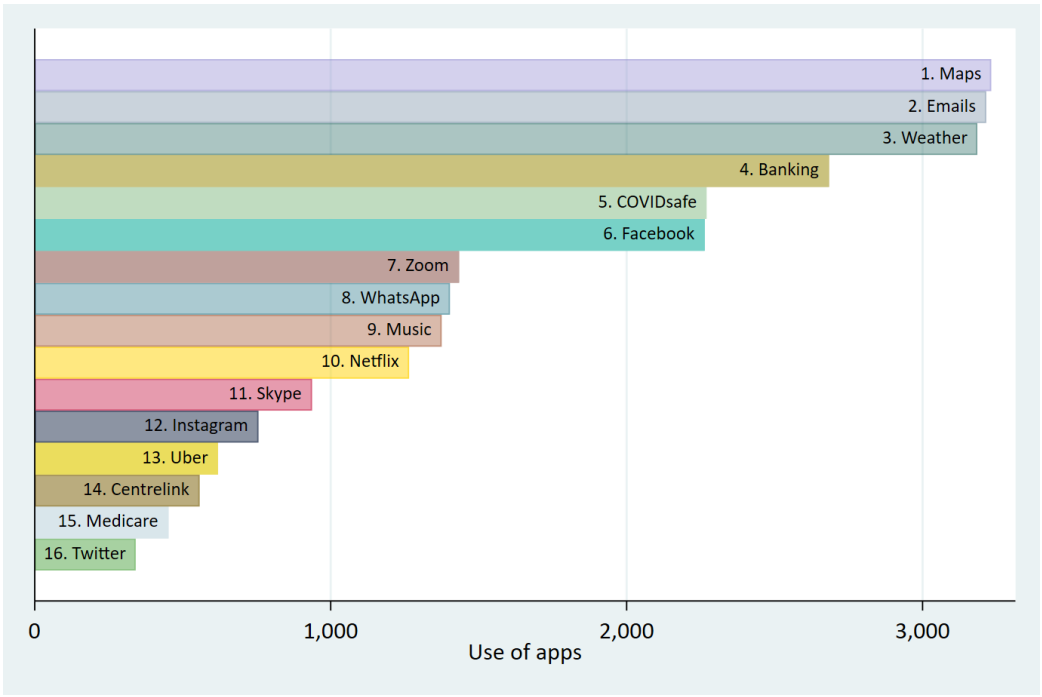
Trends for non-binary people and people of other genders are not shown in the gender comparison figures because the numbers are too low for statistical work, but their presence is acknowledged with respect.

Use of apps

There were some changes between 2018 and 2021 in the apps older Australians use. Some of this change can be attributed to COVID, for example the COVIDsafe app and the extensive use of Netflix. Other aspects could be attributed to changing global trends in app preferences, such as the rise of WhatsApp and Zoom and the decline of Skype.



2018

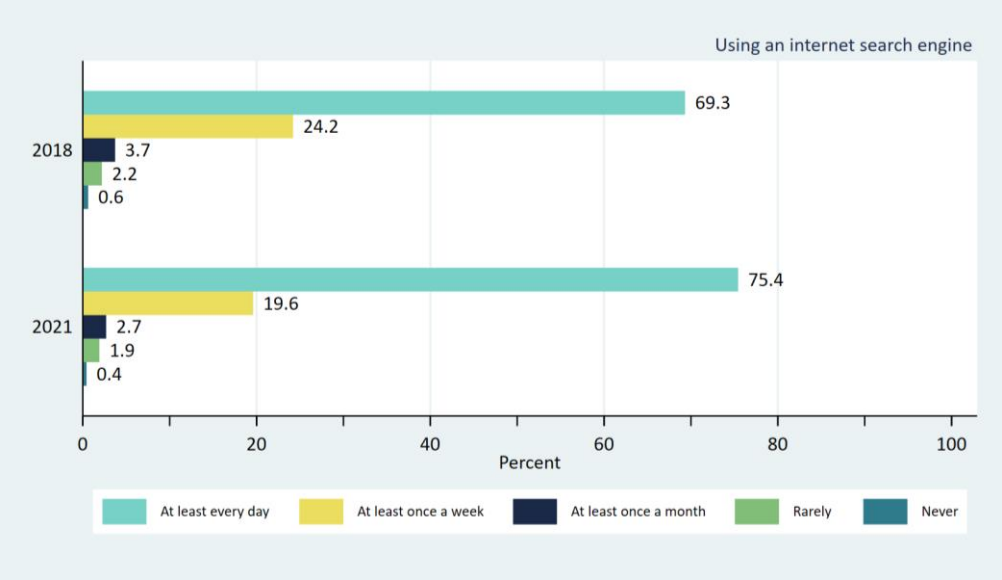


2021

Frequency of using digital technologies

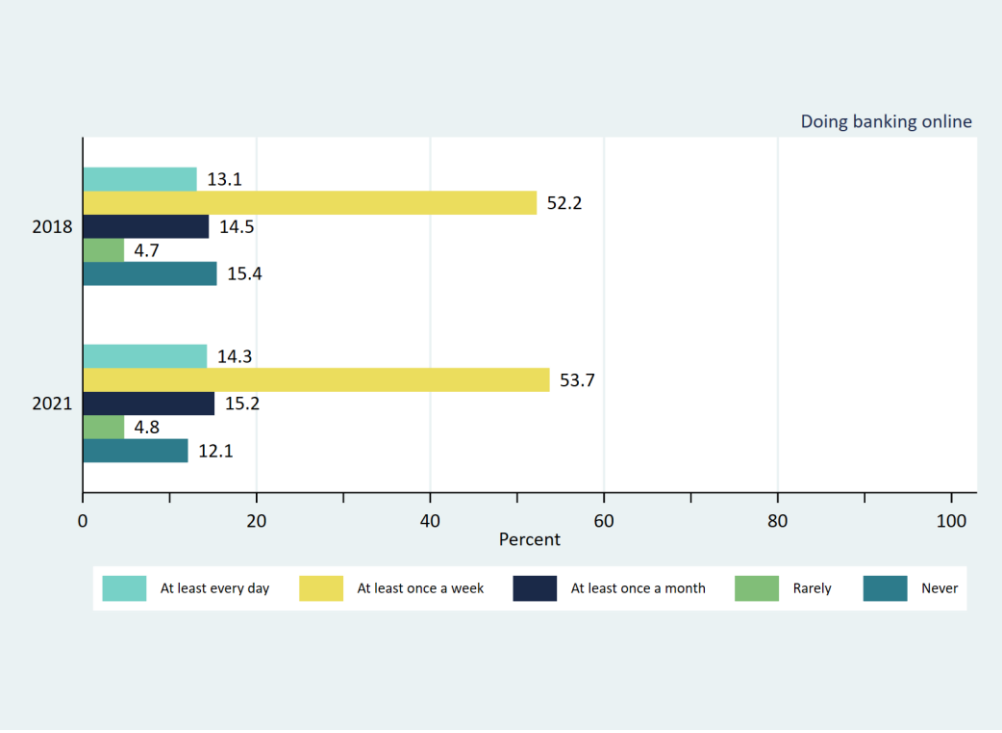
The period saw increases in the frequency with which older Australians engaged in some digital services.

- Frequency using an internet search engine (e.g. Google)



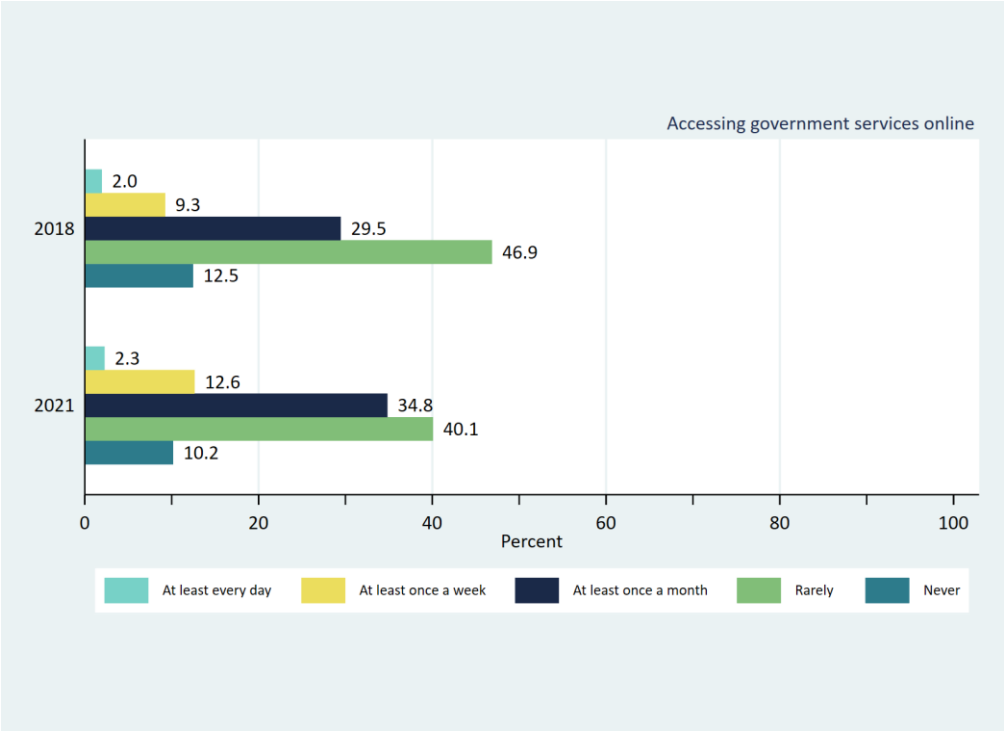
Source: NSSW Wave 7, 2018, N= 4,972; NSSS Wave 9, 2021, N=4,584.

- Frequency doing banking online



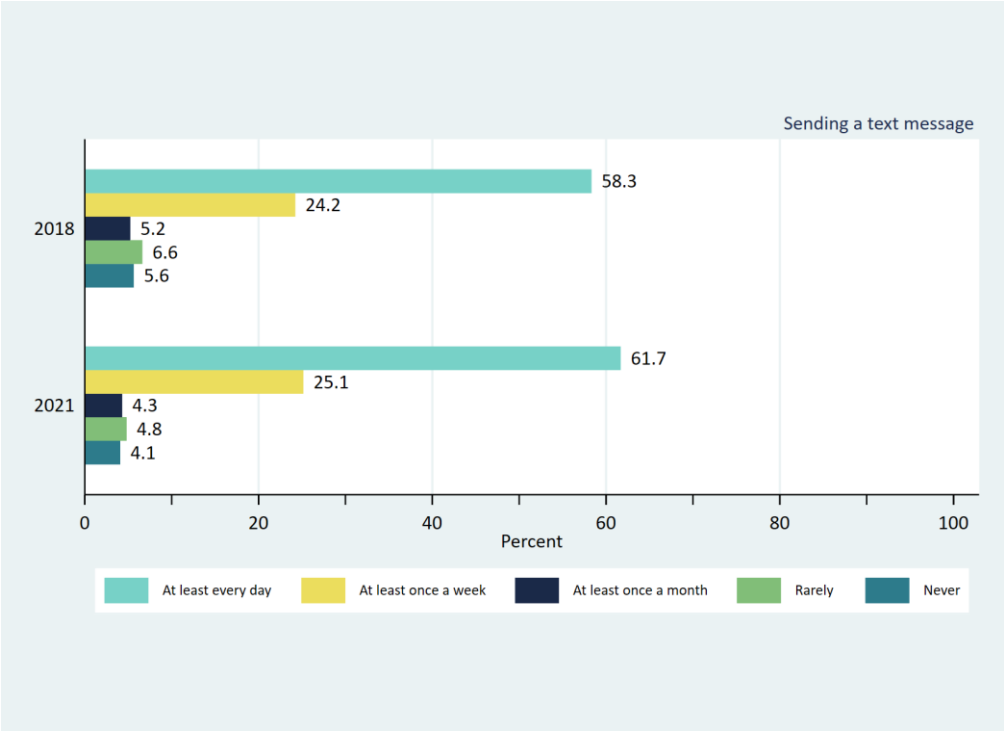
Source: NSSW Wave 7, 2018, N= 4,944; NSSS Wave 9, 2021, N=4,441.

- Frequency accessing government services online (e.g. myGov, Centrelink, My Aged Care)



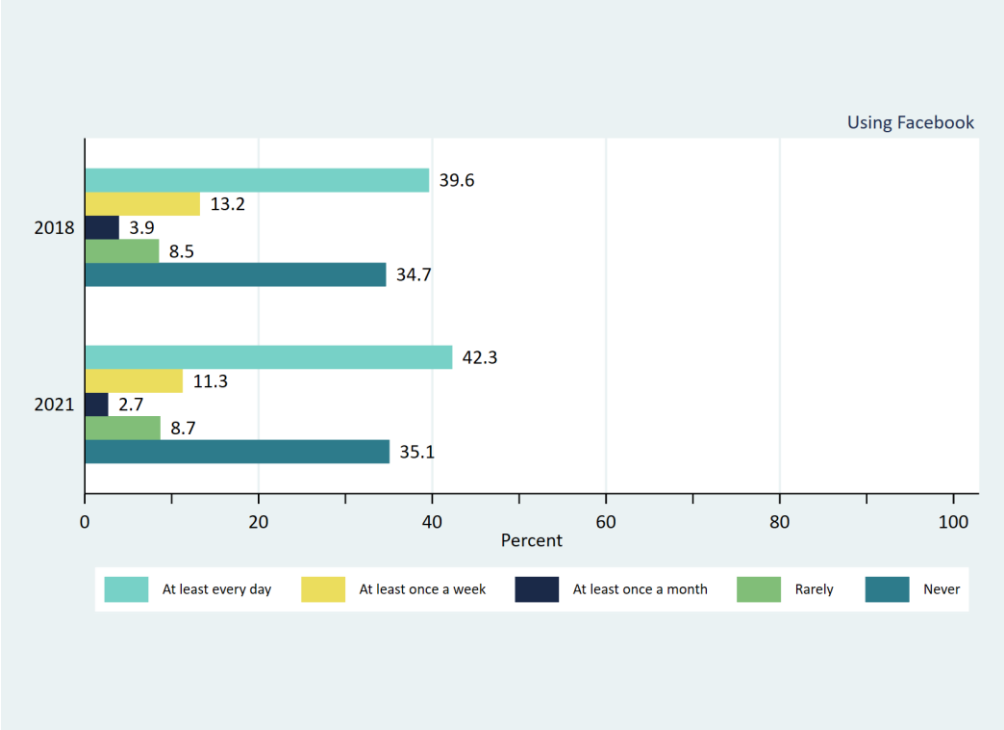
Source: NSSW Wave 7, 2018, N= 4,960; NSSS Wave 9, 2021, N=4,573.

- Frequency sending a text message



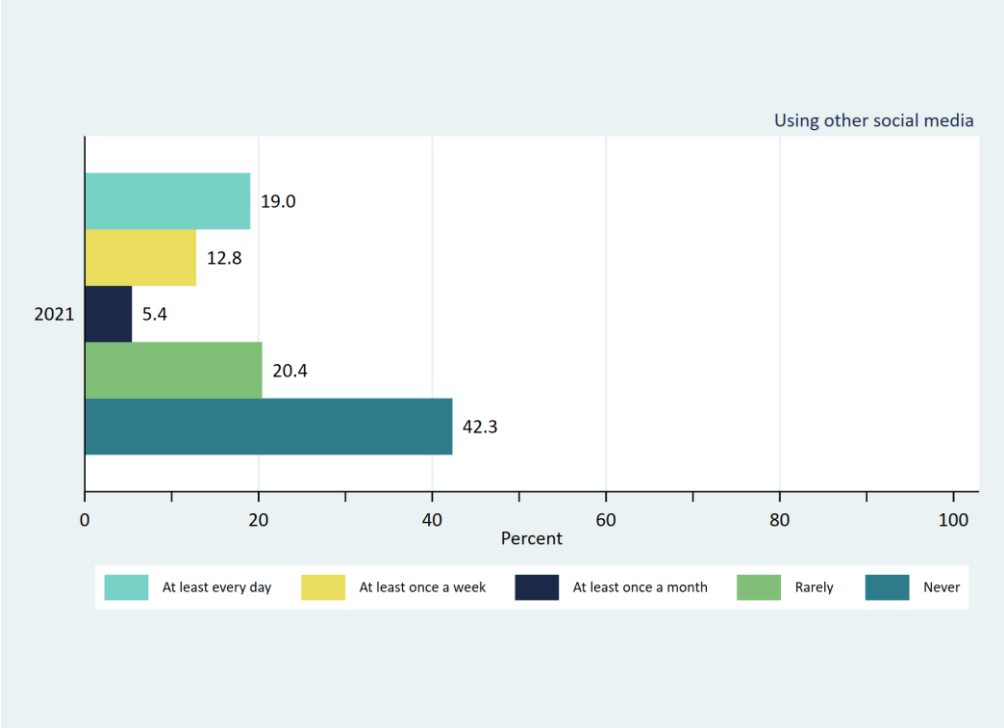
Source: NSSW Wave 7, 2018, N= 4,953; NSSS Wave 9, 2021, N=4,566.

- Frequency using Facebook



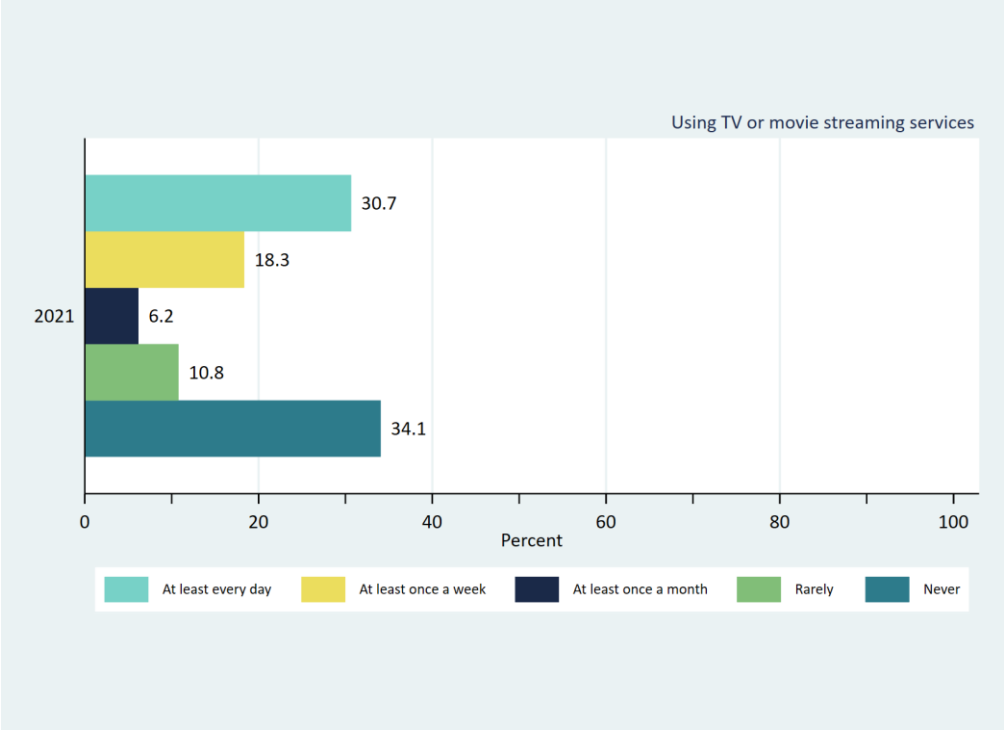
Source: NSSW Wave 7, 2018, N= 4,947; NSSS Wave 9, 2021, N=4,540

- Frequency using other social media



Source: NSSS Wave 9, 2021, N=4,498; note that use of other social media was not asked about in NSSS Wave 7 in 2018.

- Frequency using TV or movie streaming services (e.g. Netflix, Stan, Prime)

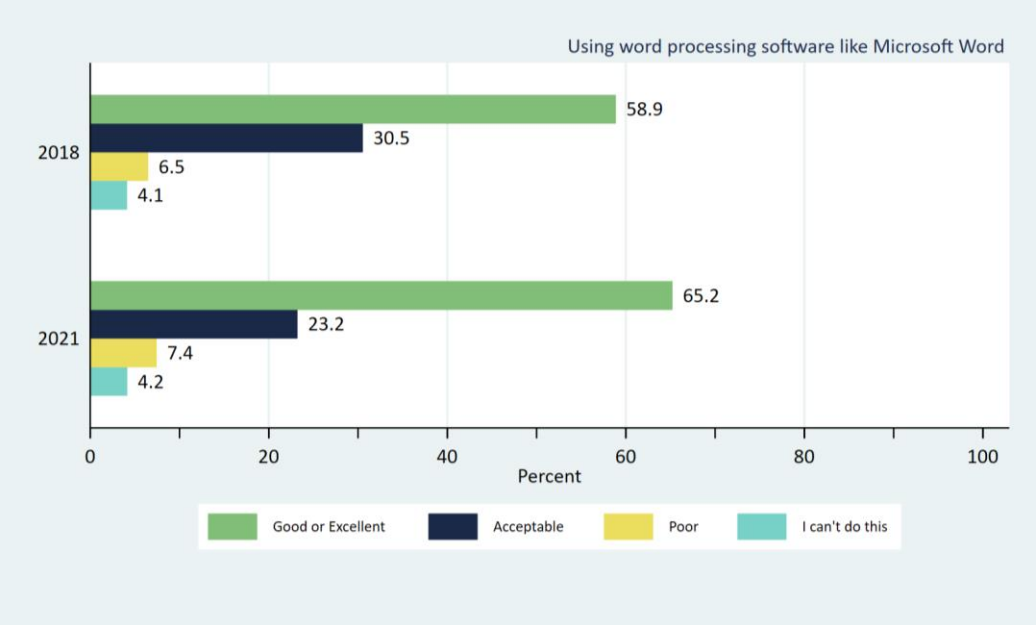


Source: NSSS Wave 9, 2021, N=4,574; note that use of TV or streaming services was not asked about in NSSS Wave 7 in 2018.

Ability to use digital technologies

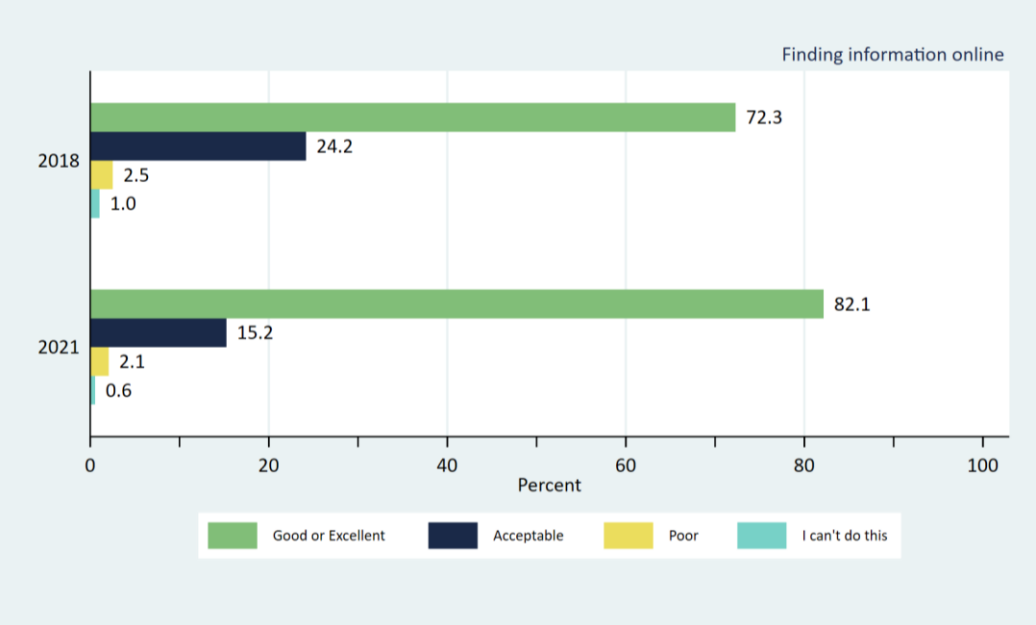
The period saw increases in older Australians' ability to complete activities involving digital technology and services.

- Ability using word processing software like Microsoft Word



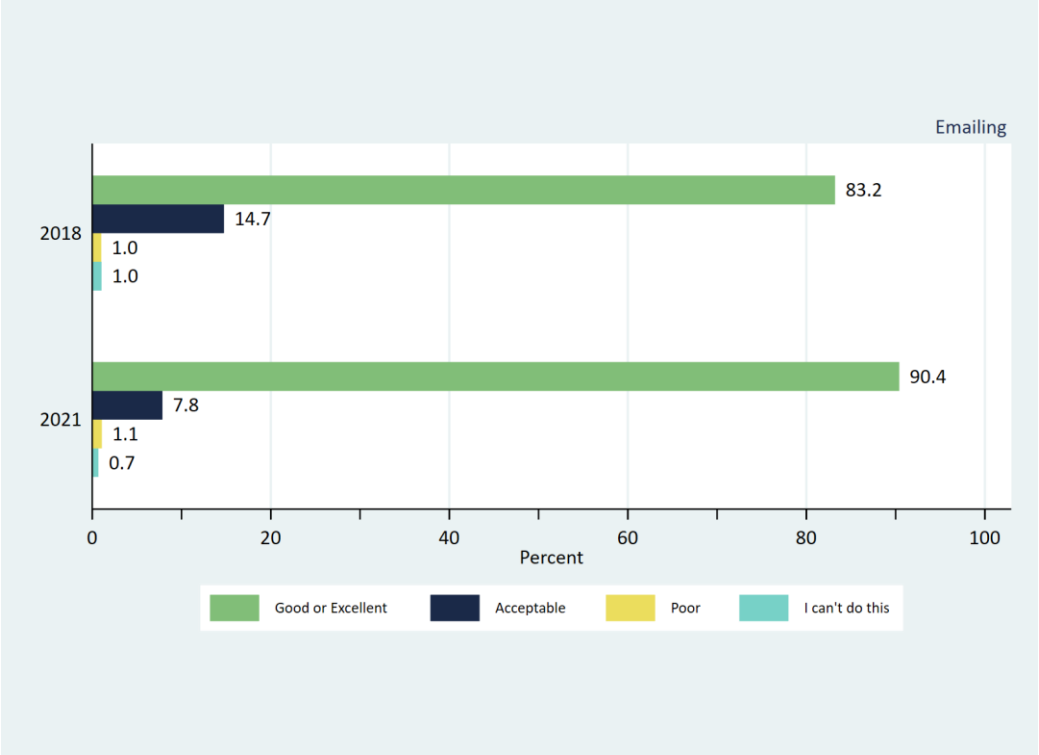
Source: NSSW Wave 7, 2018, N= 4,982; NSSS Wave 9, 2021, N=4,602.

- Ability finding information online



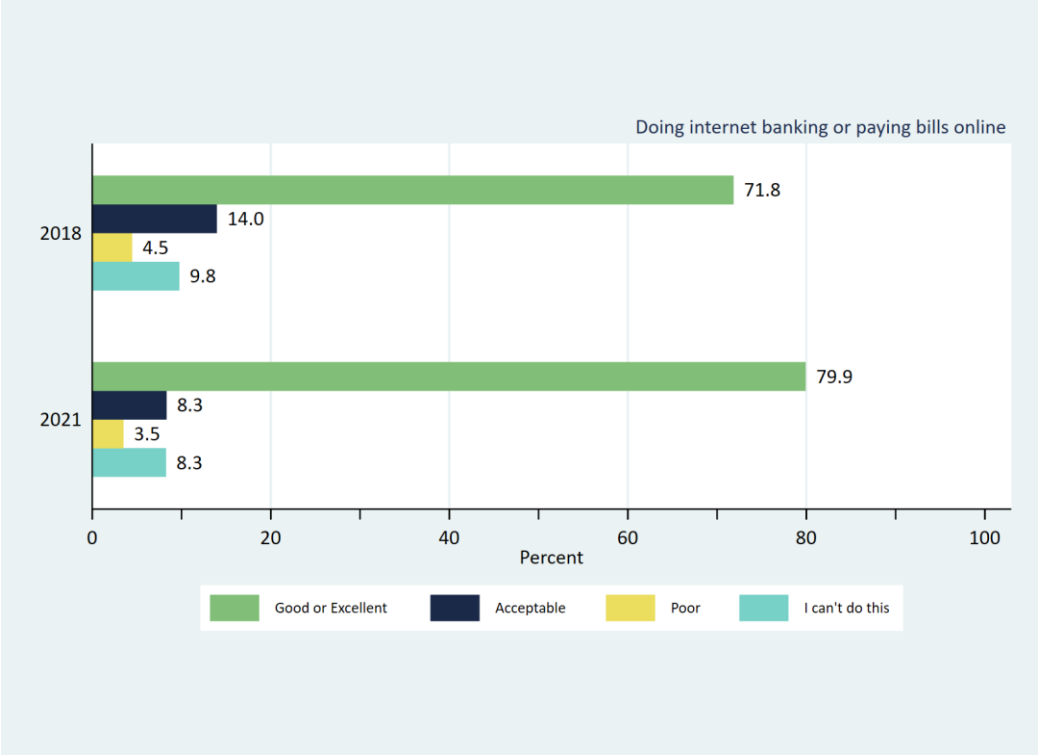
Source: NSSW Wave 7, 2018, N= 4,962; NSSS Wave 9, 2021, N=4,532.

- Ability emailing



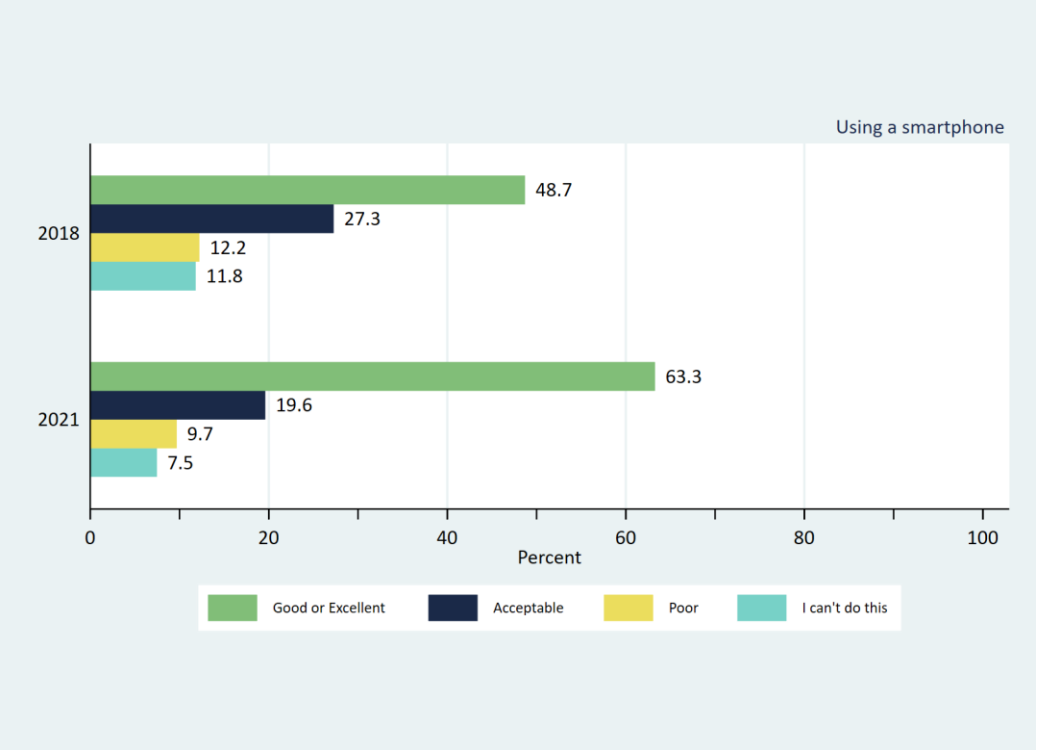
Source: NSSW Wave 7, 2018, N= 4,903; NSSS Wave 9, 2021, N=4,510.

- Ability doing internet banking or paying bills online



Source: NSSW Wave 7, 2018, N= 4,953; NSSS Wave 9, 2021, N=4,566.

- Ability using a smartphone

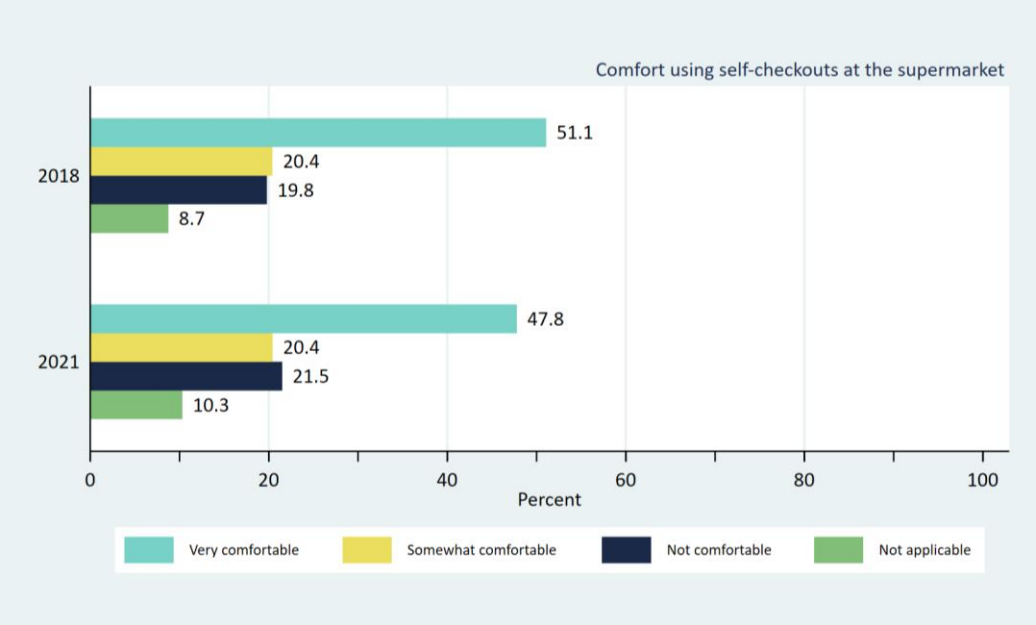


Source: NSSW Wave 7, 2018, N= 4,919; NSSS Wave 9, 2021, N=4,567

Comfort using digital technologies

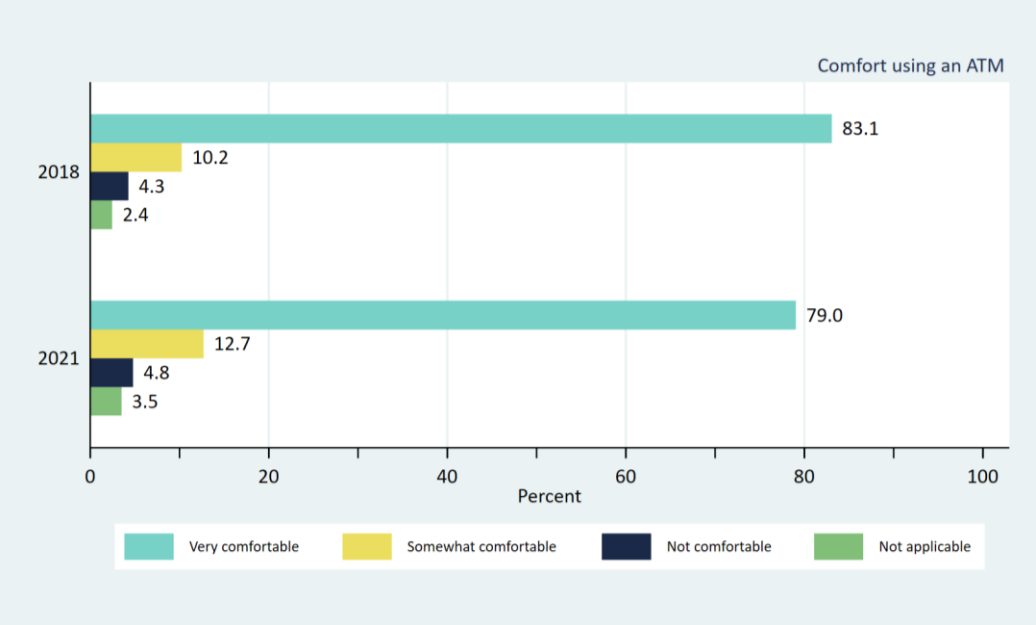
The period saw a decline in older Australians' comfort levels with some aspects of digital technology.

- Comfort using self-checkouts at the supermarket



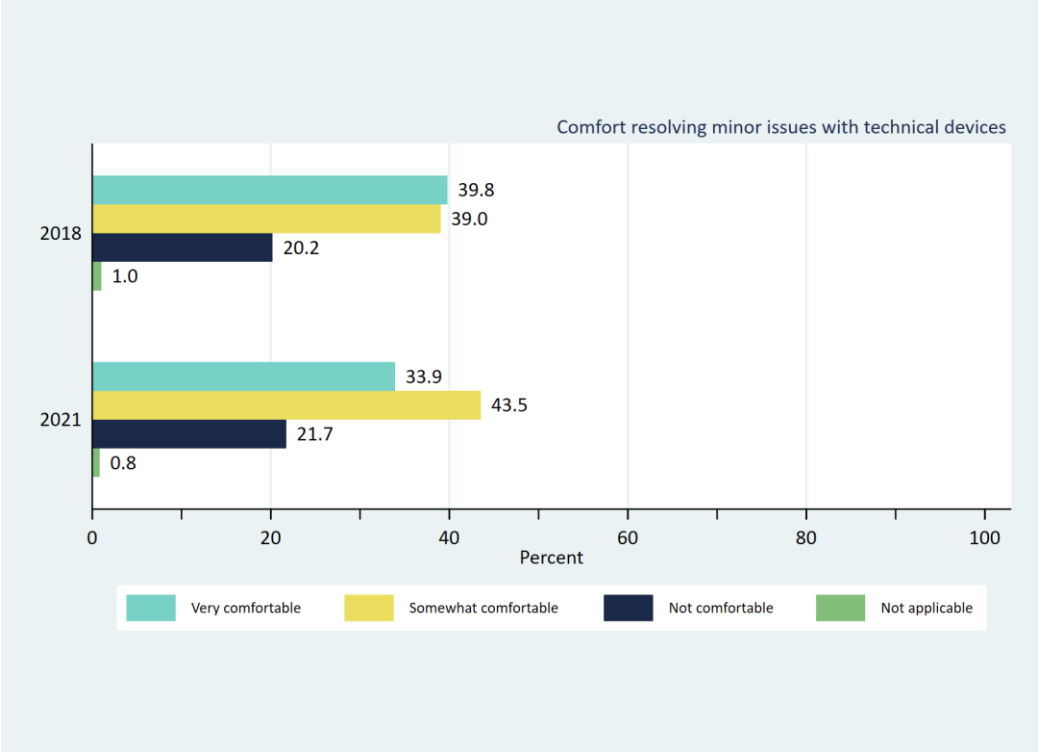
Source: NSSW Wave 7, 2018, N= 4,974; NSSS Wave 9, 2021, N=4,583.

- Comfort using an ATM



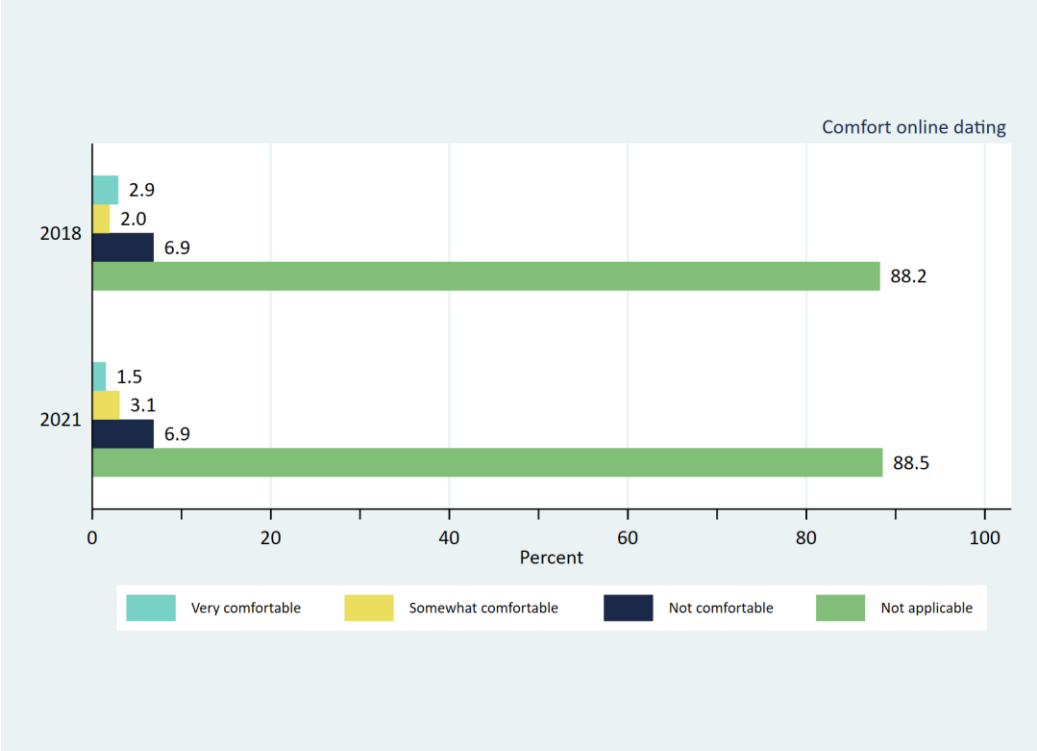
Source: NSSW Wave 7, 2018, N= 4,956; NSSS Wave 9, 2021, N=4,511.

- Comfort resolving minor issues with technical devices (e.g. computer, phone, TV)



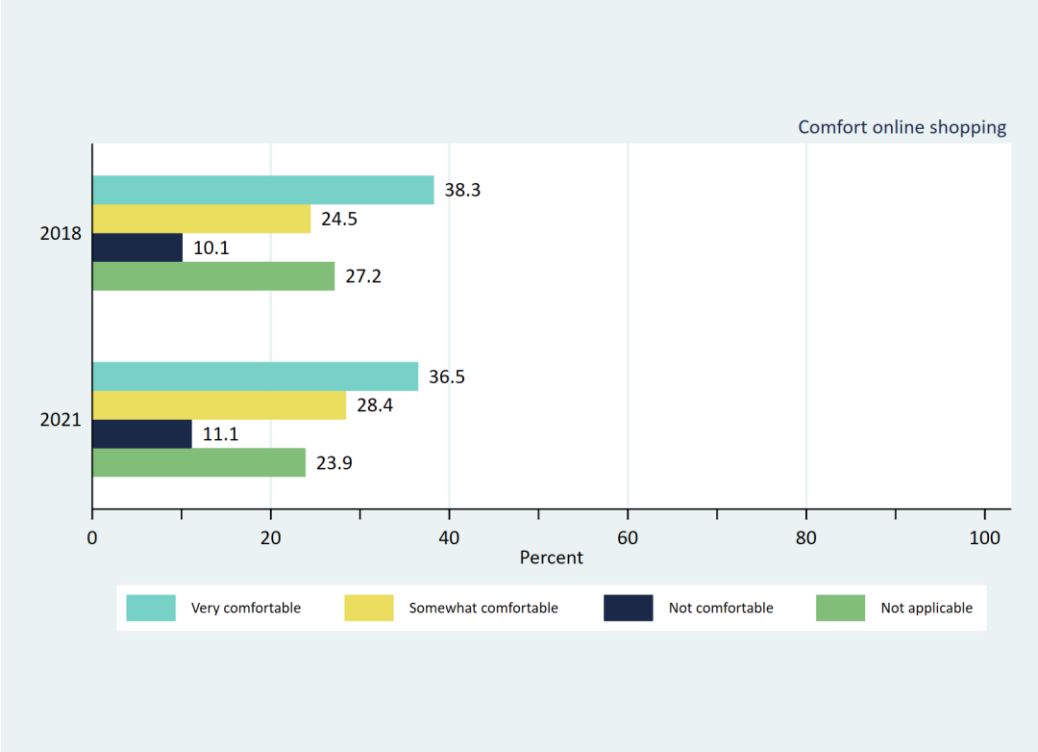
Source: NSSW Wave 7, 2018, N= 4,967; NSSS Wave 9, 2021, N=4,584.

- Comfort online dating



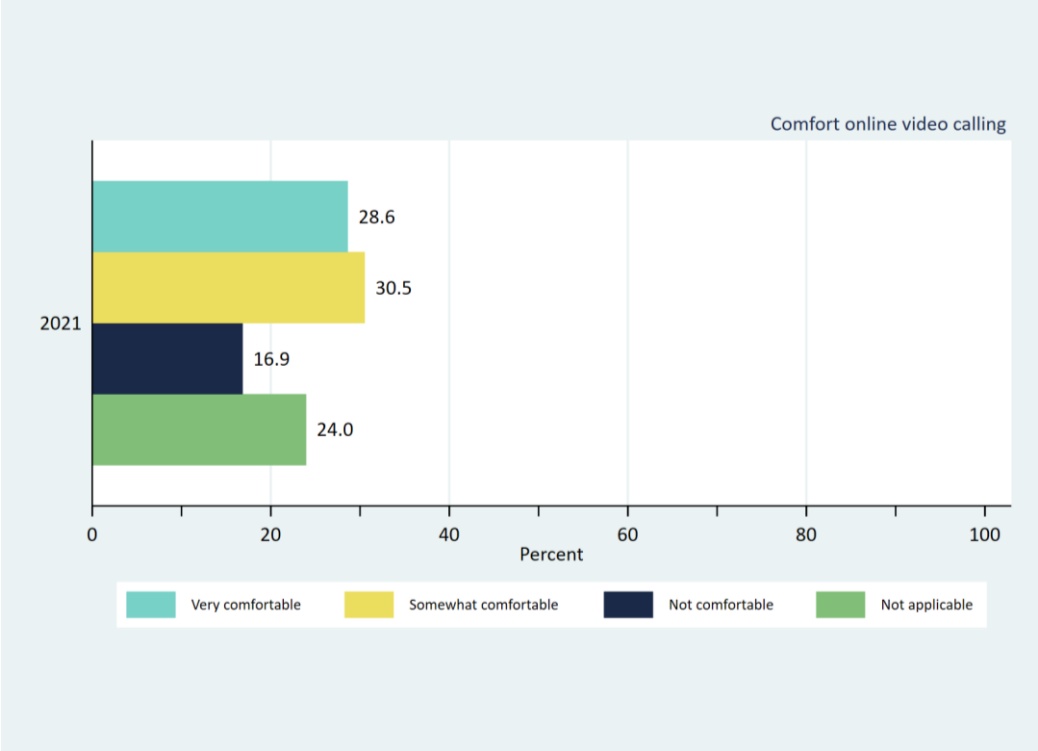
Source: NSSW Wave 7, 2018, N= 4,942; NSSS Wave 9, 2021, N=4,544.

- Comfort online shopping



Source: NSSW Wave 7, 2018, N= 4,948; NSSS Wave 9, 2021, N=4,521

- Comfort online video calling

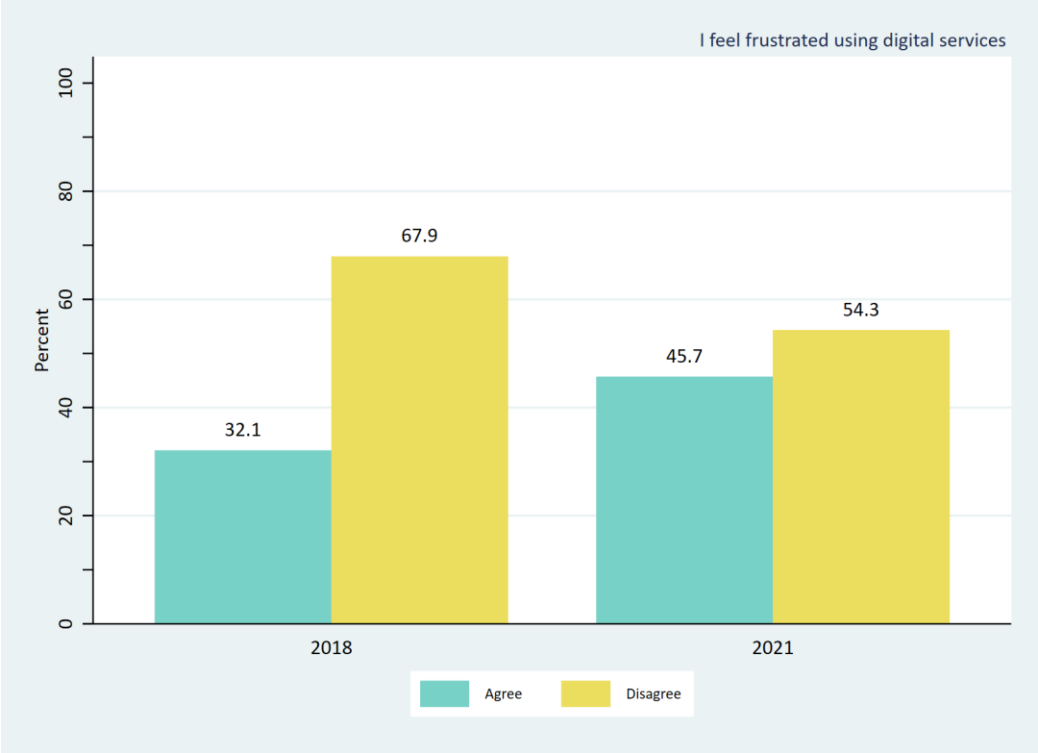


Source: NSSS Wave 9, 2021, N=4,528; note that online video calling was not asked about in NSSS Wave 7 in 2018.

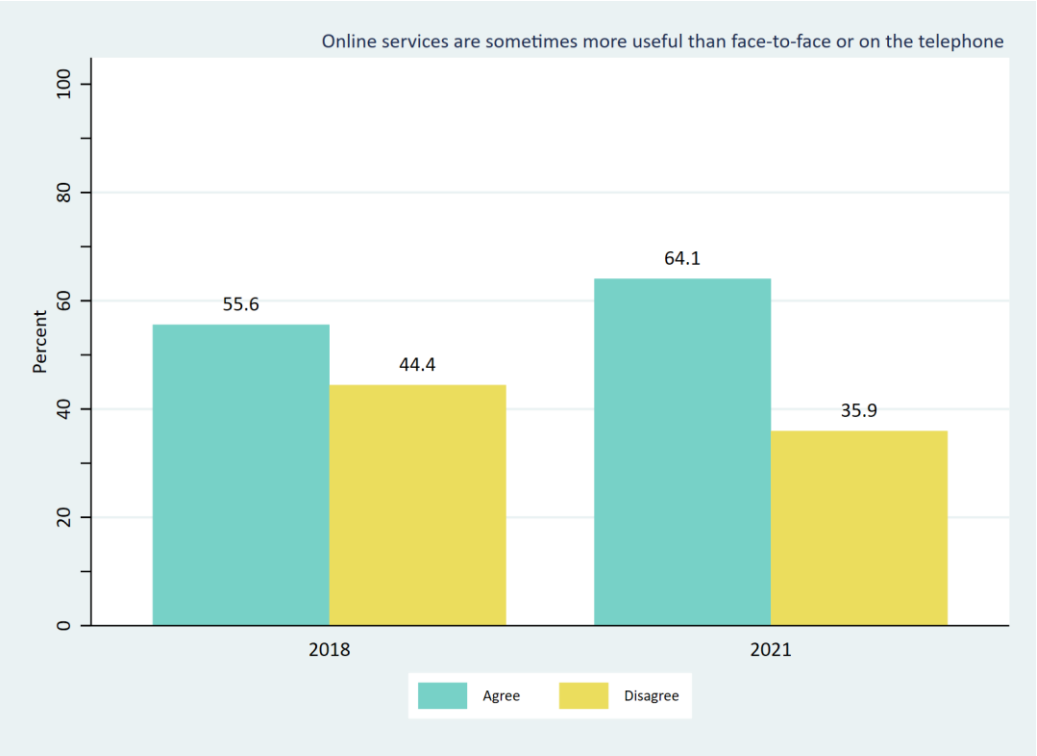
Attitudes to digital technology

Between 2018 and 2021, older Australians' attitudes towards the place of digital technology in their lives shifted, sometimes greatly.

- In 2021, a higher proportion of survey respondents agreed that they felt frustrated using digital services than in 2018.

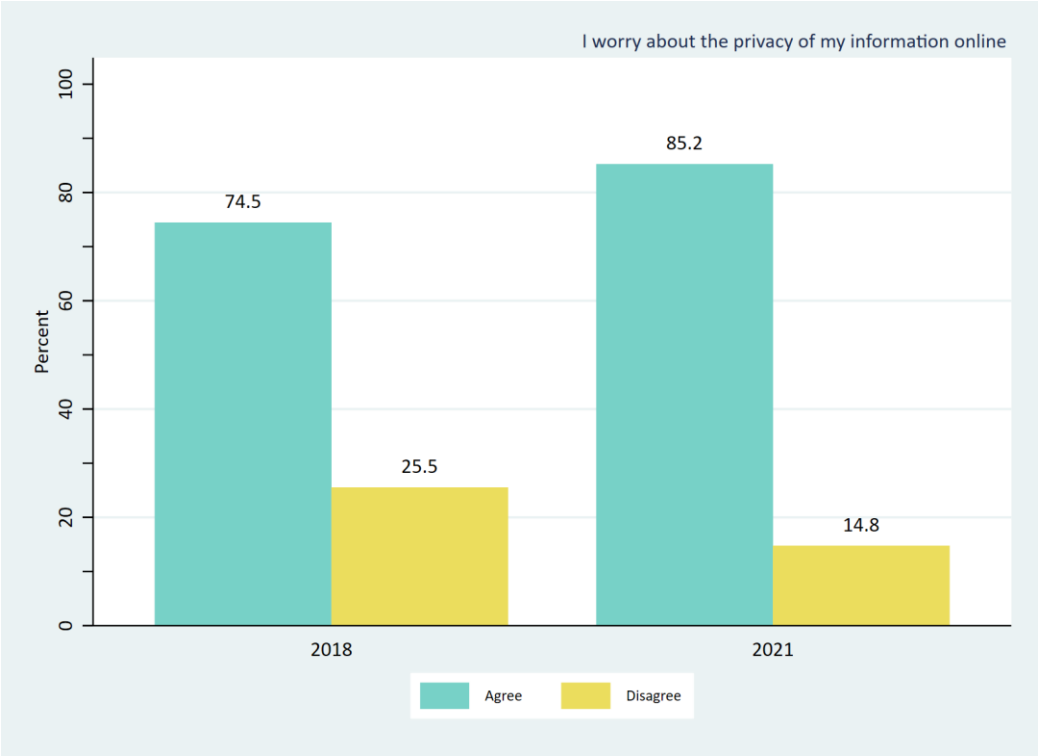


- In 2021, a greater proportion of participants agreed that online services can sometimes be more useful than face-to-face or on the telephone than in 2018.

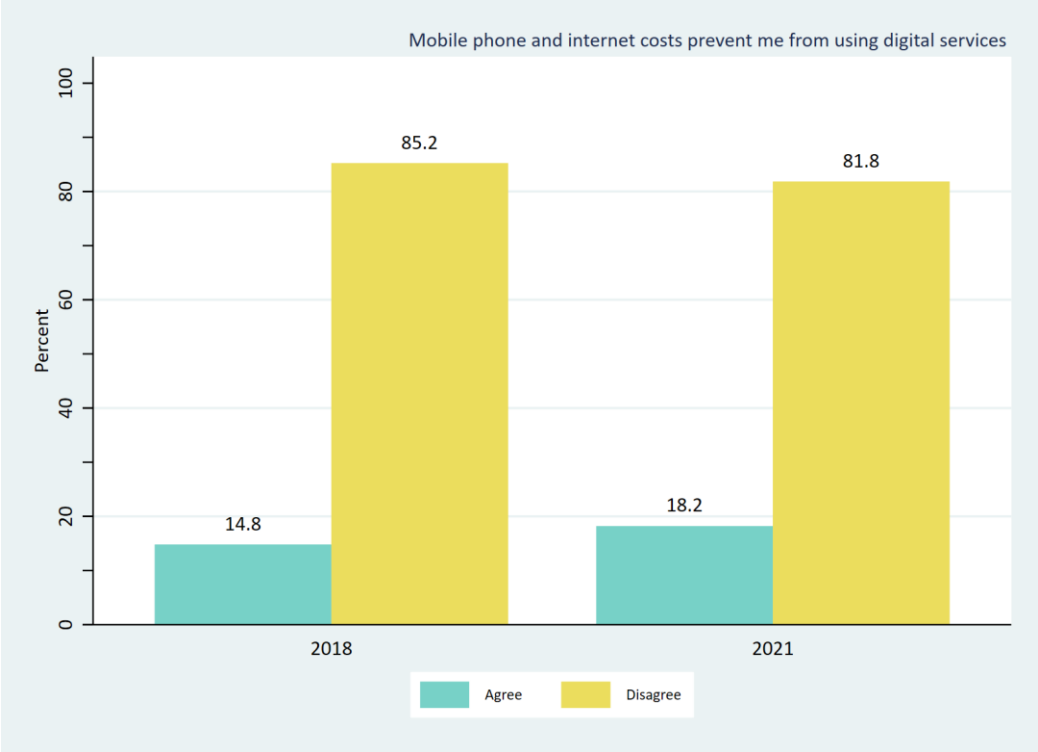


- In 2021, proportionally more participants expressed that they would like more training using digital services than in 2018.

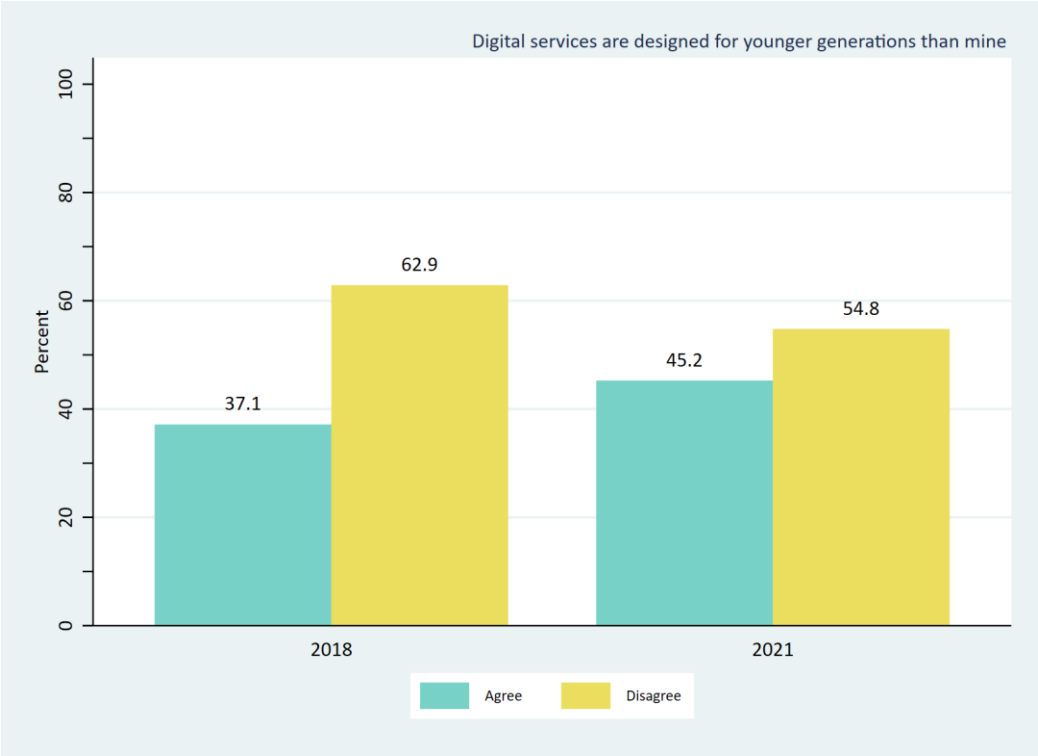
- In 2021, a greater proportion of participants worried about the privacy of their information online than in 2018.



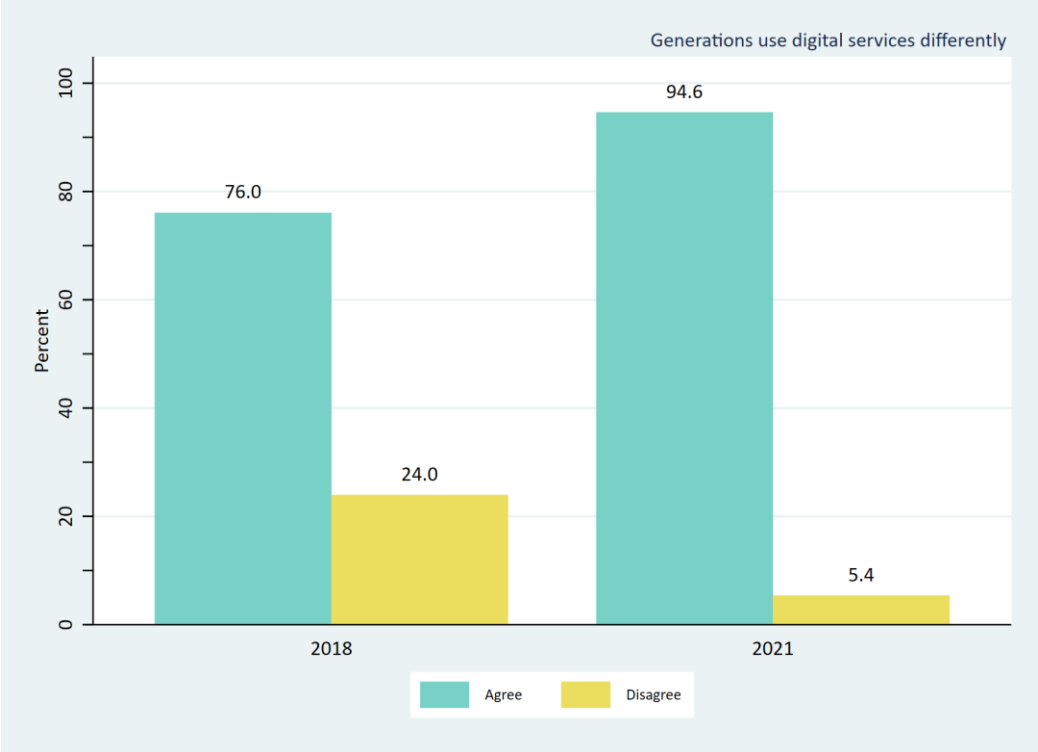
- The proportion of participants expressing that the cost of digital services was prohibitive was slightly higher in 2021 than in 2018.



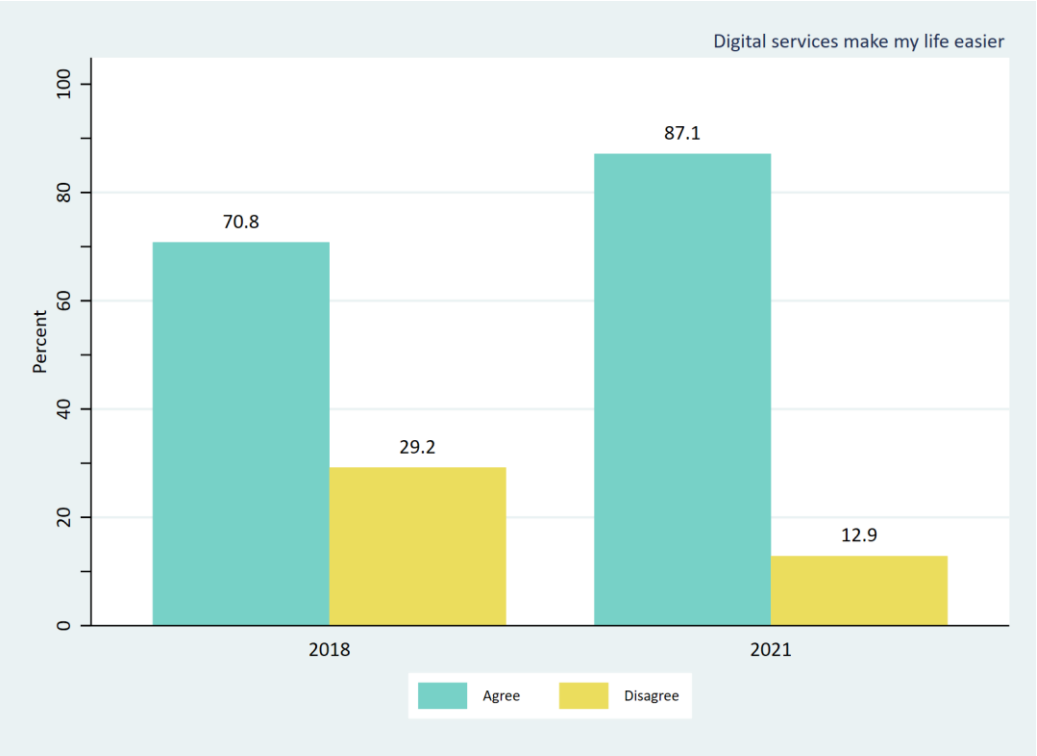
- In 2021, the proportion of participants agreeing that digital services were designed for younger generations increased compared to 2018.



- A greater proportion of participants agreed that generations use digital services differently in 2021 than in 2018.



- In 2021, proportionally more participants agreed that digital services made their lives easier than in 2018.



- The proportion of participants agreeing that they would always prefer to talk to a person rather than communicate online increased compared to 2018.

Appendix 4: Senior Surfer scale statistics and self-ratings

Senior Surfer scoring methods

As noted in the main text, the 2019 report analysing the 2018 NSSS-7 data pioneered the use of a "Senior Surfer" score as an original, innovative measure of older Australians' digital engagement (called "digital literacy" in that report). We repeated the exercise in 2021 with NSSS-9 survey data.

In both years, patterns in responses to the key survey questions were analysed together to group participants in terms of their digital engagement, with each participant given a Senior Surfer categorisation. Senior Surfer categorisations were unweighted, based on a simple addition of responses to questions relating to frequency, ability and comfort using various digital technologies. Not all participants could be categorised as Senior Surfers, as eligibility depended on answering all the relevant digital engagement questions.

The Senior Surfer categorisations were based on five components, each scored 0-3:

- Number of years using the internet, scored as:
  0=0 years; 1=1-9 years; 2=10-19 years; 3=20+ years

- Averaged frequency of use score across 5 questions in the 2018 survey (internet use, online banking, government services, texting, Facebook) and an additional 2 in the 2021 survey (other social media, streaming services), scored as:
  0=rarely or never; 1=at least once a month; 2=at least once a week; 3=at least every day

- Averaged ability score across 5 questions (using word processing software, online information seeking, emailing, banking, smartphone use), scored as:
  0=can't do this; 1=poor; 2=acceptable; 3=good (or excellent in 2021 survey)

- Averaged comfort score across 4 questions in the 2018 survey (self-service checkout, ATM, problem-solving tech issues, online shopping) and an additional 1 in the 2021 survey (online video calling), scored as:
  0=not applicable; 1=not comfortable; 2=somewhat comfortable; 3=very comfortable
  Note that online dating was not included due to the high proportion who answered "Not Applicable" for this option (>88%).

- Quartiles of numbers of apps used, which equated to the following scores:
  in 2018: 0=0 apps used; 1=1-4 apps used; 2=5-6 apps used; 3=7+apps used
  in 2021: 0=0 apps used; 1=1-5 apps used; 2=6-8 apps used; 3=9+apps used

Scores for all five components were added together to create an overall Senior Surfer score.

Senior Surfer cut-offs

Cut-offs for Senior Surfer groups were applied to the overall Senior Surfer score to make group sizes as similar to the latent class model as possible.[1] Senior Surfer scores were divided into four categories to represent four different levels of digital engagement:

- Super Surfers scored above 12 and up to 15
- Savvy Surfers scored above 9 and up to 12
- Sometimes Surfers scored above 6 and up to 9
- Seldom Surfers scored 0 to 6.

Comparison of 2018 and 2021 Senior Surfers results

While there were only small shifts in the Senior Surfer scores of the cohort between 2018 and 2021, the shifts suggest an overall increase in digital engagement among older Australians (see table next page).

In the 2021 survey, participants were also asked to rate what kind of Surfer they would consider themselves to be, based on written descriptions of the four categories. When comparing these self-categorisations to the Senior Surfer scores we calculated based on participants' answers to other questions, considerable discrepancies can be seen.[2] While we scored 33% of participants as Super Surfers based on our calculations, 50 percent of participants stated that they rated themselves in this category. Correspondingly, fewer participants rated themselves as Savvy or Sometimes Surfers than we did (44% calculated versus 33% self-rated for Savvy Surfers, 19% calculated versus 13% self-rated for Sometimes Surfers). The proportion of participants rated as Seldom Surfers remained similar whether scored by us or self-rated.

[1] The term 'latent class model' refers to a situation where the traits that researchers are measuring are thought to be indications of an underlying (i.e., latent) trait that can't be measured directly. In the case of the Senior Surfer scores, people's answers to the survey question were the traits we measured, based on the idea that underlying them is a general trait of 'digital engagement level'. The Senior Surfer score is an attempt to measure that latent digital engagement trait. The four ranked categories we created corresponding to Senior Surfer scores can be seen as four 'classes' of digital engagement. The traits we measured (such as ability, comfort, and frequency of digital technology use) are the factors we believe can be used to estimate (or, as statisticians might say, to model) which latent digital engagement class a person falls into. Hence the technical term 'latent class model': the Senior Surfers score system is an attempt to model the latent classes of digital engagement. See National Seniors' 2019 *Senior Surfers* report for more detail about how we arrived at a four-group model for the Senior Surfers score [1].

[2] Note that in 2018, participants did not have the option to rate themselves as a type of Surfer so comparisons cannot be made between self-categorisations and calculated Senior Surfer scores for that year.

Proportions of Senior Surfer types among participants in NSSS-7 in 2018 and NSSS-9 in 2021

		2018 scored n=4,574	2021 scored n=3,787	2021 self-rated n=4,586
Super Surfers	Surfers who are very comfortable using digital technology in their everyday lives.	**31.4%**	**33.4%**	**50.2%**
Savvy Surfers	Surfers who are also very comfortable using digital services but perhaps might not use them as often or have some areas with which they are not so comfortable.	**41.6%**	**43.9%**	**32.8%**
Sometimes Surfers	Surfers who use digital technology as necessary but are not always comfortable or proficient.	**21.8%**	**18.9%**	**12.8%**
Seldom Surfers	Surfers who can use the internet and digital technology but rarely do and likely prefer other methods of interaction.	**5.2%**	**3.9%**	**4.2%**

At face value, the large discrepancy between the Senior Surfers scores we calculated and participants' self-ratings makes it look like older Australians have delusions of grandeur about their digital skills. However, that is a superficial and likely false reading of the situation. Definitions of technical competence can of course vary, and the Senior Surfer score definitions were based on a simple additive measure, so at this basic level it is not surprising that respondents' self-rating differed from ours on average.[3] But even beyond this self-evident reason, respondents' open text comments grant us insight into other reasons for the discrepancy.

Responders' comments related to self-rated Senior Surfer categories

Of the 4586 people who answered the question asking them to rate themselves using the Senior Surfer categories, 857 people made comments in the optional comment box. The distribution of commenters among the four surfer categories was about the same as for the whole sample, both for their self-rating and for our scores, so the commenter subsample is likely to be reasonably representative of the whole.

The comments help explain the discrepancies we observed between respondents' self-rating and the score we gave them. Of the 857 commenters, about 40% (344 people) rated

[3] While the measure is an additive one, not weighted and not refined via statistical modelling techniques, it was not created arbitrarily. To generate the four categories in 2018, we used a statistically grounded latent class model approach to maximise the likelihood that the four categories represent a real-world phenomenon not just an analytical convenience. See our 2019 report for methodological details [1].

themselves the same as we rated them, 30% (256) rated themselves higher than we did, and 10% (83) rated themselves lower. (The others did not rate themselves and/or we could not rate them.)

From the range of comments, it was clear that the question was quite broad and did not appear to account for changing technology, for fixing technology problems, or for the varied reasons why people do not engage in specific digital activities. This suggests we should not read too much into the discrepancies between self-rating and our rating, many of which are likely due to survey methods, not to older Australians inaccurately rating their abilities. Here we summarise some possible reasons for the discrepancies, based on the comments.

New versus familiar technology. A respondent may rate themselves highly because they are very comfortable using digital technology they are already familiar with, but they may come out lower on our scale because they don't cope well with newer technology or changes.

"Professional career in IT since 1965 but retired in 2002 so no longer totally au fait with all current tech."
(their rating was Super, our rating was Savvy)

"This question does not ask about my knowledge about latest technology and confidence with the changes it regularly brings."
(their rating was Super, our rating was Savvy)

Question wording does not mirror measures precisely. A respondent may rate themselves highly when using the exact wording of the question, but aspects they struggle with drive down their rating using our measures. Alternatively, they may rate themselves lower than our scale did because they are aware of activities they cannot do, but our measures did not consider those activities.

"Whilst rating myself as a super surfer, because it fits the above definition and I use it everyday on PC, phone and tablet, I often struggle with the layout, processes and steps of whatever it is I am working on."
(their rating was Super, our rating was Savvy)

"The holes in my understanding are social media platforms (that doesn't bother me too much) and aspects of cyber-security that I would like to better address to ensure most effect[ive] use of resources online."
(their rating was Savvy, our rating was Super)

Super skilled at getting help. A respondent may rate themselves highly even though there are aspects they struggle with, because one of their high-level skills is knowing where to find help. Alternatively, they may rate themselves lower than we did because they sometimes need help from others.

"I use the internet in my work. Have two savvy sons I can call on if I encounter problems."
(their rating was Super, our rating was Savvy)

"I introduced my children but now they tell me how to use it."
(their rating was Sometimes, our rating was Super)

Not engaging doesn't always indicate a lack of skills. A respondent may rate themselves highly on the digital activities they do engage in, but we rated them lower because they do not or cannot engage in certain activities, even if their reason for not participating is unrelated to their ability. Alternatively, a respondent may rate themselves lower than we did because they would rather not engage with technology as much as they must.

"I would love to actually have better access not slow satellite which is ridiculous for a property less than 100 kms from Perth"
(their rating was Super, our rating was Savvy)

"Use it for many applications except banking"
(their rating was Super, our rating was Savvy)

"Use a desktop computer daily for all digital needs. Dislike and do not use mobile phones and any form of social media."
(their rating was Super, our rating was Sometimes)

"don't really like using internet for communication. Prefer seeing people"
(their rating was Sometimes, our rating was Seldom)

"Spent my working life chained to a computer (using mainly email and word processing) - would be happy never to use a computer again."
(their rating was Seldom, our rating was Sometimes)

Subjective middle rating categories. The difference between the two middle categories (Savvy and Sometimes) is somewhat subjective.

"I use the internet a lot - but there are lots of things I don't really know. I stumble through!"
(their rating was Savvy, our rating was Sometimes)

Unfamiliar jargon makes people feel unskilled. A respondent may rate themselves lower than we did because alienation from technological jargon gives them a false sense of inability.

"I also find the language of computers which is evolving every day very difficult to follow. For example, ABC Radio National has a program on technology and I try to listen but usually end up turning it off because of

the "lingo" which I cannot follow and the speed with which younger people talk."

(their rating was Savvy, our rating was Super)

Practical insights from seniors' self-rated digital skills

These comments show that skills like targeted help-seeking may be underrated as a form of digital engagement and can be just as important – for anyone, not just seniors – as being able to engage in a digital activity solo. While our Senior Surfers score included points for being able to resolve minor technical issues, it did not include points for help-seeking behaviours. In a world with a rapidly changing digital landscape, most people need assistance with technical issues, and knowing how and where to find relevant assistance is a valuable skill.

In addition, it is important to differentiate between skill at using familiar technologies and the ability to adopt and become proficient at using newer technologies. Some people are good at both while for others these skills differ. The Senior Surfers score approach in its current form was not able to capture that distinction.

The comments also showed why some seniors' self-rating was lower than ours. Technological jargon and a cultural association between technology and youth may have had negative impacts on some respondents' perceived self-efficacy. These things can make older people feel stupid when in fact their skill levels are high. Researchers may underrate this when evaluating seniors' abilities; we did not include any measures corresponding to it.

These findings can potentially help future researchers refine the Senior Surfers scale or account for these factors in other ways. They can also help professionals who teach or communicate about digital technology, and those whose job it is to help others, to better understand the skills and limitations of older people. The data suggest that cultivating positive attitudes towards older people's help-seeking behaviours, giving advice in a jargon-free way, and providing assistance in a manner that is not patronising but is age-appropriate would all go a long way, as would recognising existing and longstanding expertise with older technologies rather than treating people like idiots if they need assistance with newer technologies.

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