

Using internet in retirement boosts cognitive function

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Using the internet during your retirement years can boost your cognitive function, a new study has found.

Researchers from Lancaster University Management School, the Norwegian University Science and Technology and Trinity College Dublin examined the cognitive function of more than 2,000 retired people from across Europe, and found that post-retirement internet usage is associated with substantially higher scores on tests.

The study, published in the *Journal of Economic Behavior and Organization*, uses data drawn from the Survey of Health, Aging and Retirement in Europe (SHARE) that collects information about the health, employment history and socio-economic status of older people.

Focusing on a sample of 2,105 older people from Austria, Belgium, Denmark, France, Germany, Italy, Israel, Spain, Sweden and Switzerland who have been retired since 2004, researchers examined retirees' cognitive function in both 2013 and 2015. They specifically focused on a word recall test, where individuals were asked to recall a list of 10 words immediately, and then again five minutes later.

Results found that, on average, people who used the internet after they retired were able to recall 1.22 extra words in the recall test compared to non-internet users. However, retirees who used the internet were also more likely to be male, younger, better educated, and have been retired for a shorter period. They also appear to be in better health—even though they drink and smoke more.

Dr. Vincent O'Sullivan, a co-author from Lancaster University Management School said: "Our results reveal that using the internet, post-retirement, leads to a marked reduction in the rate of cognitive decline.

"Interestingly, this protective effect was found to be most significant amongst women, with female retirees who regularly surfed the internet able to recall 2.37 more words compared to women who didn't go online. The results were also consistent among men, with retired internet users

able to recall 0.94 more words than men with similar characteristics who didn't use the internet.

"We also found that retirees who used computers in their jobs before retirement were more likely to keep using computers once they retired, and hence had better cognitive function."

Researchers compared the cognitive function of retirees who used to work in jobs where computers were commonplace to retirees who worked in jobs where computers weren't often used. For example, among teachers, computers became common in the workplace much later than sectors such as financial services. Their results revealed that people with pre-retirement exposure to computers were more likely to continue to use them once they retired.

Among the overall results, the researchers also found a stark difference in the patterns of internet usage between European countries, with no more than 12% of retirees using the internet in Italy, compared to over 60% in Denmark.

"Research has shown that retirement from the workforce is a critical period for cognitive function, which declines with age and can be a predictor for a range of key health outcomes among older people," said co-author Likun Mao, formerly a Ph.D. student at Lancaster but now at Trinity College Dublin. "Although there is a widespread belief that [computer](#) usage improves [older people](#)'s cognitive function—such as memory, attention, spatial abilities and problem solving—there has been mixed evidence from previous studies.

"We were able to discern that pre-retirement computer usage does not directly influence post-retirement cognitive decline, and we ensured our results referred only to post-retirement internet usage."

Professor Colin Green, of the Norwegian University Science and Technology, added: "Within our study we estimated statistical models which controlled for individuals' ages, education levels, occupational skills and years since retirement, so we are confident that our results are robust and relate only to the use of the [internet](#), post retirement.

"This sets it apart from other studies and raises the interesting question of what it is about [internet use](#) exactly, that drives this positive effect on cognitive function. Interacting with others online, finding out information in order to attend social activities or simple tasks like shopping online can all make life easier for retirees, but we are yet to understand which, if any, of these tasks actually go as far as improving cognitive performance."

More information: Colin P. Green et al, Internet usage and the cognitive function of retirees, *Journal of Economic Behavior & Organization* (2021). [DOI: 10.1016/j.jebo.2021.08.013](https://doi.org/10.1016/j.jebo.2021.08.013)

Provided by Lancaster University

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