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Digitization and digital literacy of the population in Estonia

Municipalities support adult education



Project IO # 1 and IO # 2 prepared by Association of Estonian Adult Educators Andras

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Introduction

This report on digitization and citizens' digital literacy is one of the intellectual results of the Erasmus + co-funded project "Municipalities Support Adult Education" (MSAE). The project is implemented from 2020 to 2022.

Local authorities are the closest support institution for local people, working closely with local adult education providers. This determines the special role of local governments in adult education.

The aim of the project is to develop and increase the role of local governments in supporting adult education in order to promote greater participation of adults in education.

This report provides an insight into digitization and the digital competence of the population in Latvia. Similar reports are prepared by all project partners, which allows comparing the situation in Latvia, Lithuania, Estonia and Italy.

This report has several sections. The first chapter substantiates the importance of digital skills, analyzes the digitization situation in Estonia and partner countries.

The second chapter analyzes the digital skills of the residents of Kanepi county and the opinion of the residents about the home page of their municipality.

A summary and conclusions can be found at the end of the report.

Digital skills are required in all types of jobs¹

Digital technologies are widely used in workplaces in the European Union. 93% of European workplaces use desktop computers, 94% use broadband technology to access the internet, 75% use portable computers and 63% other portable devices. 22% use intranet platform, 8% automated machine or tools or 5% programmable robots. Larger workplaces report a higher use of digital technologies than smaller ones.

Most jobs require basic digital skills. Basic digital skills include being able to communicate via email or social media, to create and edit documents digital documents and to search for information, or to protect personal information online. 98% of workplaces require managers and 90% that professionals (e.g. engineers, doctors and nurses, teachers, accountants, software developers, lawyers and journalists), technicians, clerical workers or skilled agricultural workers should have at least basic digital skills. 80% of workplaces require basic digital skills for sales workers. Workplaces also often require basic digital skills for building workers (50% of workplaces), plant machine operators (34%) and even employees in elementary occupations (27%). However, there are still some workplaces that do not consider digital skills to be important for some occupations e.g. craft workers, waiters and cooks.

Digital Economy and Society Index 2020 Estonia²

Digital Economy and Society Index (DESI) monitors Europe's overall digital performance and tracks EU countries' progress on digital competitiveness by providing data on the state of digitalisation in each Member State, helping them to identify areas for priority investment and action.

According to the DESI index for 2020, only 58% of Europeans have digital skills at least at basic level and 33% above basic level. **(See Figure 1)**

1. Figure Level of digital skills of the population

¹¹ <https://digital-strategy.ec.europa.eu/en/news/new-report-shows-digital-skills-are-required-all-types-jobs>

²² <https://digital-strategy.ec.europa.eu/en/policies/desi>

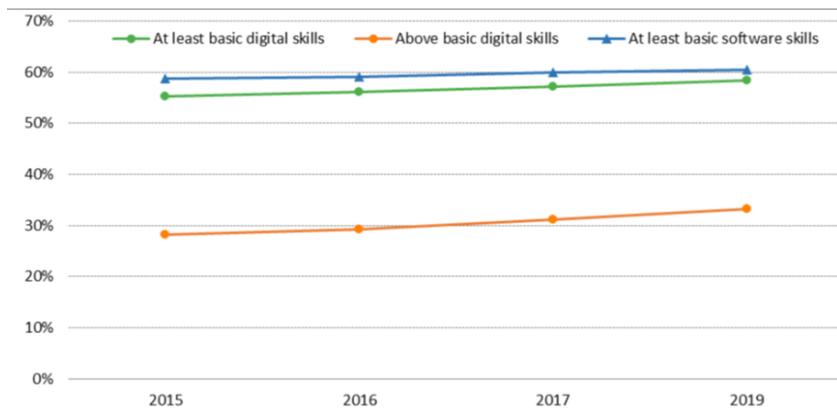
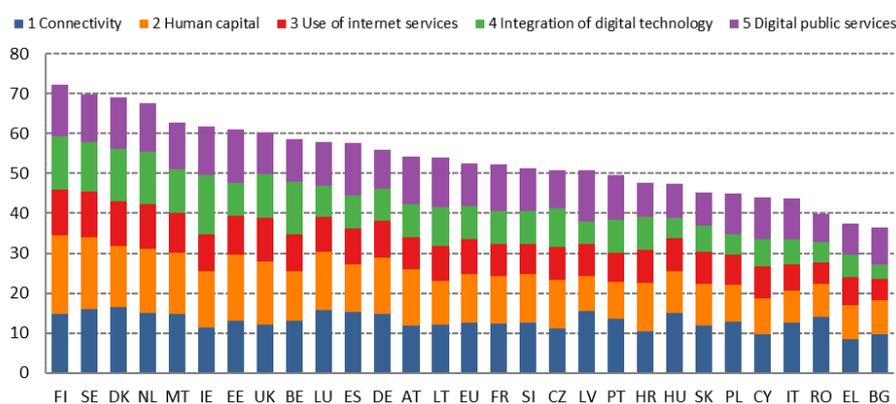


Figure 2 shows the ranking of Member States in the Digital Economy and Society Index in 2020, based on 2019 data, where we see that Finland, Sweden, Denmark and the Netherlands have the most modern skills digital economies in the EU, followed by Estonia. In Latvia and Lithuania these indicators are at an average level, in Italy - lower.

2. Figure. Digital economy and society index, 2020



Based on data prior to the pandemic, Estonia ranks 7th out of the 28 EU Member States in the 2020 edition of the European Commission's Digital Economy and Society Index (DESI) (see Figure 2).

Estonia continues to perform well on digital public services and very well on the human capital indicators. However, sustained action by all stakeholders is still important, not least because skills shortages and mismatches are among the main obstacles to business investment. The use of internet services remains consistently high. Estonia continues to invest in the deployment of broadband infrastructure, but the country's ambitious 5G goals will depend on the timely award of the pioneer bands. A key challenge in the Estonian economy remains the digitisation of companies that do not yet take full advantage of the opportunities offered by digital technology, as well as more generally the integration of digital technology.

Estonia had reviewed and updated its 'Digital Agenda 2020' strategy in 2018. This undertaking is anchored in clear and transparent criteria, which will help the country in implementing the necessary measures to achieve its ambitious targets. By end of 2020, the government plans to prepare and in 2021 adopt the digital strategy for the next 5 years.

The role of digital to manage the coronavirus pandemic and to support the economic recovery³

The current COVID-19 crisis is having an important impact on key societal indicators, relating to the use of internet services by citizens. This does not show in the latest 2019 official statistics as reported in DESI. Consequently, the DESI 2020 findings need to be read in conjunction with the strained demand that has been put on digital infrastructure and services during the pandemic and the immediate actions taken by the Member States. Similarly, as Europe progressively exits from the pandemic, the recovery must be planned taking into account the lessons learnt from this crisis. This means a particular attention to the indicators relevant for a stronger and more resilient digital transformation and economic recovery, notably very high capacity networks (VHCNs) and 5G, digital skills, advanced digital technologies for businesses and digital public services.

Estonia has taken a number of measures in digital to deal with the COVID-19 crisis. Initiatives to minimise contagion and to support the health system include the deployment of an AI-powered chatbot to answer people's questions about COVID-19; the development of a digital platform for monitoring personal protective equipment stocks and forecasts; the inclusion of remote specialist care in the list of refundable services by the national Health Insurance fund. Estonia has also shown great leadership in making available to the general public a number of e-learning solutions via the Education Nation online platform. Many different webinars and support materials have been organised and created to facilitate remote online learning. Digital technologies have been further integrated in the provision of public services, for example via an online trade fair for temporary job offers created by the Estonian Unemployment Insurance Fund, which also moved the provision of active labour market services, if applicable, to digital channels. Supplementary budget has been allocated for high-speed internet in rural areas. Estonia's efforts were also visible in the 'Hack the Crisis' joint digital hackathon organised in March 2020, which resulted in many of the above mentioned solutions, and which led to the launch of the 'Global Hack' international hackathon in April 2020, with thousands of participants from more than 40 countries. Looking forward, it is important that Estonia focuses on the digitisation of its businesses across sectors, supports the take-up of fixed broadband reaching speeds of at least 100 Mbps, and takes the necessary steps to meet the country's ambitious 5G goals, which depend on the timely award of the pioneer bands.

Estonian human capital⁴

Estonia ranks 3rd in the EU on Human capital. 62% of the population have at least basic digital skills and 37% have above basic digital skills, both above the EU average (58% and 33%

³ <https://digital-strategy.ec.europa.eu/en/policies/desi-estonia>

⁴ <https://digital-strategy.ec.europa.eu/en/policies/desi-estonia>

respectively). The percentage of ICT graduates (7.4%), ICT specialists (5.7%) and female ICT specialists (2.6%) in Estonia increased in 2019 and is higher than the EU average.

However, businesses have identified skills shortages as some of the main obstacles to investment (84% of firms) but the share of investment in human capital and skills is low. This is particularly important, given that the digitisation of many industries and sectors will impact people unevenly, with vulnerable groups at higher risks.

Estonia updated its Digital Agenda 2020 in 2018 and began a review process in 2019. Under this agenda, Estonia committed to launching a number of initiatives to ensure the supply of ICT specialists and the acquisition of higher ICT skills in traditional sectors of the Estonian economy. The Estonian Lifelong Learning Strategy aims to ensure that 80% of the population acquire digital competences by 2020 (Individuals aged 18-74 with computer skills). The strategy has a 'digital focus on lifelong learning' as one of five priorities. The goal is to apply modern digital technology in learning and teaching in a more efficient way and with better results, to improve the digital skills of the general population and to ensure they can access the new generation of digital infrastructure.

Use of internet services⁵

Estonia ranks 7th in the EU on the Use of internet services in 2019.

Overall, the use of internet in Estonia is high (88% of people). People in Estonia are keen to carry out a range of online activities, the most popular being reading the news (89%, against an EU average of 72%) and banking (89%, against 66% at the EU level). The share of people taking an online course is higher in Estonia (15%) than the EU average (11%). Estonia also performs above the EU average in playing music, videos and games (83%), using social networks (72%), and shopping online (75%). It falls just below the EU average when it comes to selling online (20%), video on demand (27%) and video calls (59%).

Local government and public services⁶

An ICT strategy for the development of information and communication technology for local governments has been agreed in Estonia, the main points are:

- The e-services provided to the local government population are necessary, complete, modern, in use;
- The ICT infrastructure and technology of governments is standardised, coordinated, stable, sustainable and secure;

⁵ <https://digital-strategy.ec.europa.eu/en/policies/desi-estonia>

⁶ <https://www.elvl.ee/kov-it-koordineerimine>

- The ICT development of local governments is coordinated.

The plan is to connect the local government service portal and the local government procedural information system to the state information system in order to reduce the cost of local self-selection and make the availability and use of services easier and faster for people.

Digital skills survey analysis of Kanepi municipality

The Estonian survey was conducted in Kanepi municipality. It is a small local government in Southern Estonia with 4790 inhabitants, 524,49 km², there are 49 villages, 3 schools, 4 kindergardens, the largest settlement is the borough Kanepi (557 inhabitants).

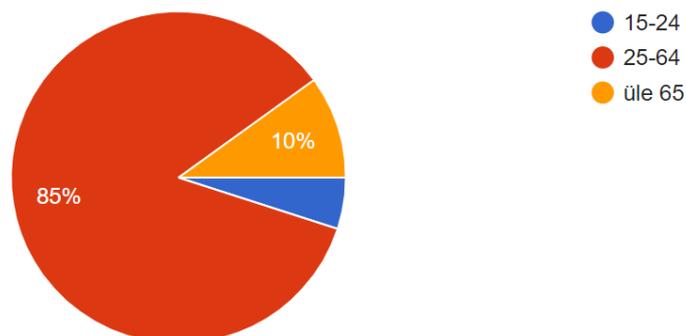
The questionnaire was published on the [website of Kanepi municipality](#), on the [Facebook page of the municipality](#) and sent to the employees of the subdivisions of the municipality (schools, kindergardens, social care centres) by e-mail.

Characteristics of respondents

There were 80 respondents, 85% of them (68) were 25-64 years old, 8 65 years old or older and 4 younger than 25.

1. Teie vanus

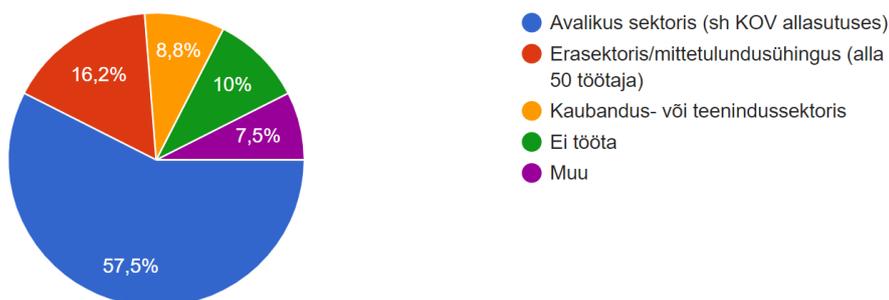
80 vastust



More than half of respondents (57%, 46 respondents) are working in the public sector (at schools, kindergardens, social care centres or are rural municipality officials, 13 in private companies or for NGOs, 7 in the trade or service sector (which is also private sector), 8 are not working and 6 are working for „something else“.

2. Kus te töötate?

80 vastust

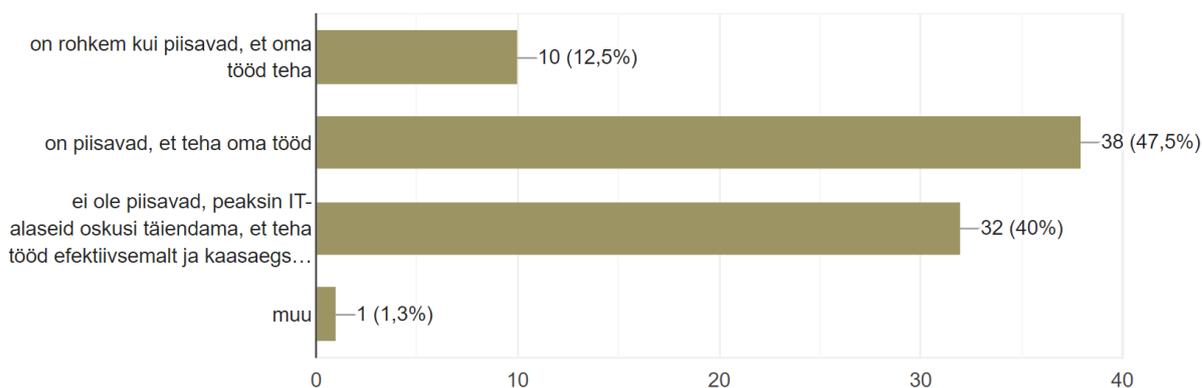


Digital skills in working life

47,5% of respondents (38) rated their work skills as sufficient to do their job. 12,5% (10) find that their ICT skills are more than enough to do their job and 40% (31) consider that their ICT skills are insufficient and that they should upgrade their IT skills to work more efficiently and modernly.

3. Hinnake oma tööalaseid IT-oskusi. Minu oskused:

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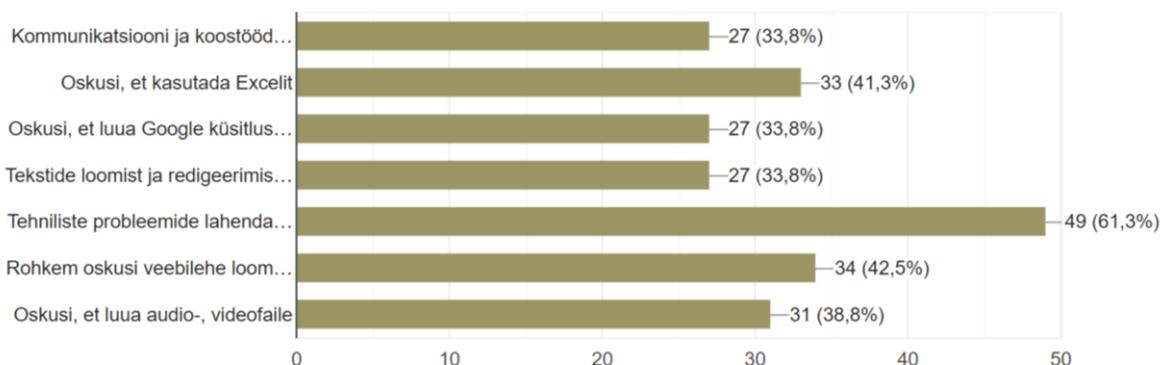
Answer to the question: "What do you think you should learn to improve your IT skills in work and private life?" (*multiple choice*):

1. Technical problem solving skills when working with a computer – 61,3 %
2. Skills for creating a website, adding information to a website – 42 %
3. Skills to use Excel – 41,3 %
4. Skills to create audio, video files – 38,8 %
5. Communication and collaboration skills in an electronic environment – 33,8 %
6. Skills to create Google surveys – 33,8 %

7. Creating and editing texts, adding pictures, working with tables – 33,8 %

4. Mis te arvate, mida peaksite õppima, et tõsta oma IT-alaseid oskusi töö- ja eraelus?

80 vastust



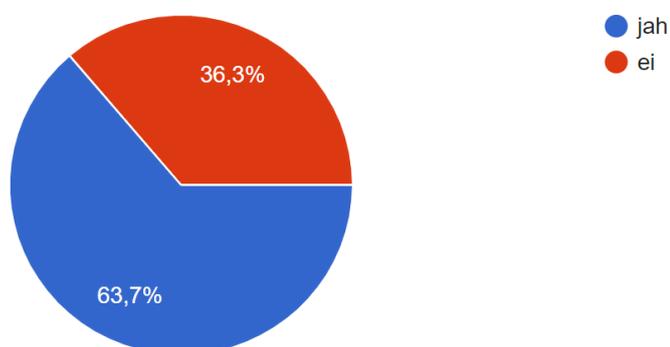
Also were mentioned: saving, sorting, searching for found materials, security risk management, courage to use a computer.

Information on the websites of the local government and their subsidiaries

About 2/3 of respondents are using webpages of the local government and their subsidiaries:

5. Kas kasutate infoallikana oma linna/valla veebilehte?

80 vastust

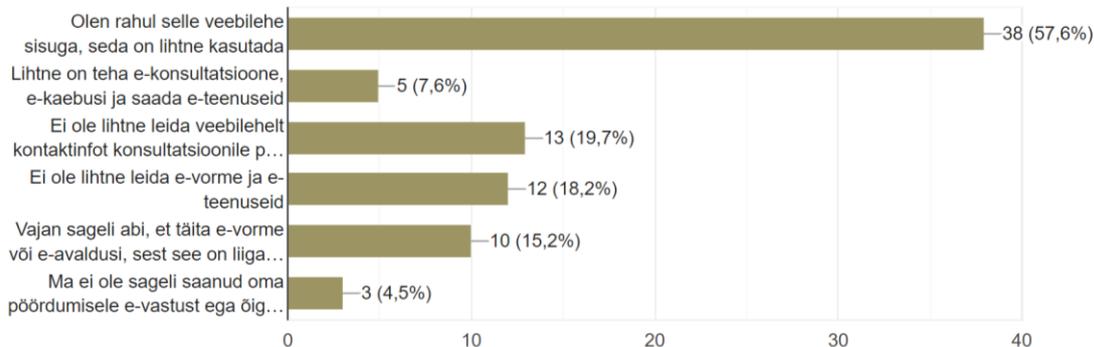


More than half of the respondents are satisfied with the municipality's website.

6. Mis on Teie arvamus linna/valla veebilehe kohta?



66 vastust



Dissatisfaction:

- 19.7% find that it is not easy to find contact information on the website for consulting and advice
- 18.2% find it easy to find e-forms and e-services
- 15.2% often need help filling out e-forms or e-applications because it is too complicated.

7 respondents have said that they do not use the municipality's website.

Use of electronic public services

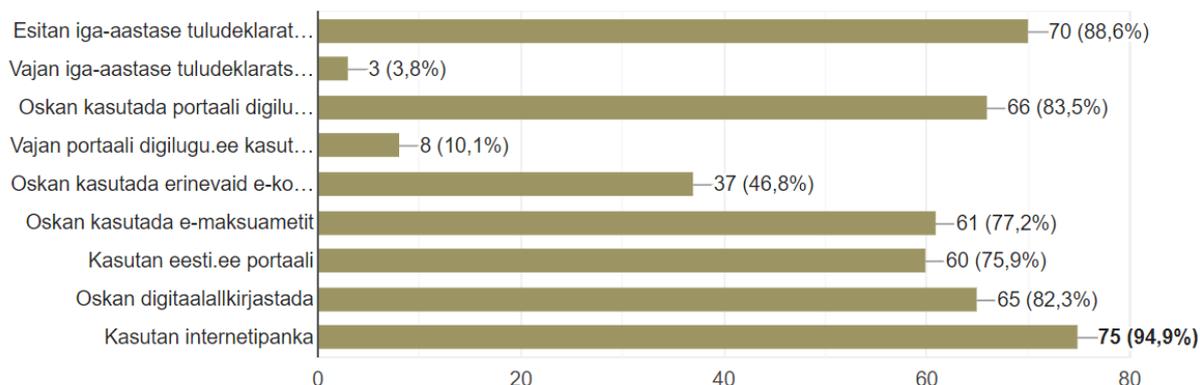
Almost 95% of respondents use the internet bank and 88,6% of respondents are able to declare their annual income tax return by their own.

- I use the Internet bank - 94.9% (75 people)
- I file my annual income tax return myself - 88.6% (70 people)
- I can use the portal digilugu.ee - 83.5% (66 people)
- I can digitally sign 82.3% (65 people)
- I can use e-tax office - 77.2% (61 people)
- I use the eesti.ee portal 75.9% (60 people)
- I can use various e-consultation services 46.8% (37 people)
- I need help filing an annual income tax return - 3.8% (3 people)
- I need help using the digilugu.ee portal - 10.1% (8 people)

7. Kas te oskate kasutada allpool nimetatud elektroonilisi avalikke teenuseid? (Märkige mi vastuse varianti)



79 vastust

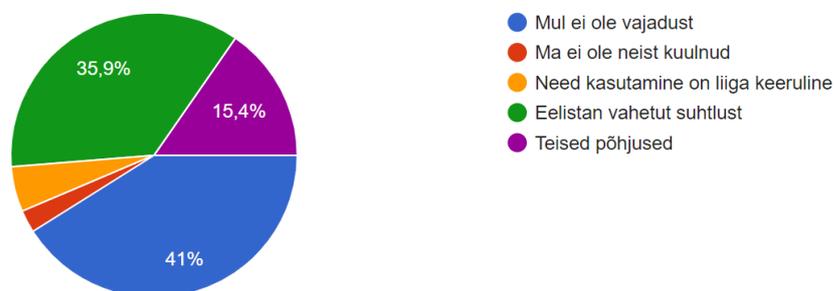


To the question of the reasons why the respondents did not use public portals and free public electronic environments, the respondents pointed out:

- No need (16 respondents)
- Direct communication preferred (14 respondents)
- Use is too complicated (2 respondents)
- Have not heard of them (1 respondents)
- Other reasons (6 respondents)

8. Kui te ei ole kasutanud avalikke portaale ja tasuta avalikke elektroonilisi keskkondi, siis mis põhjustel?

39 vastust



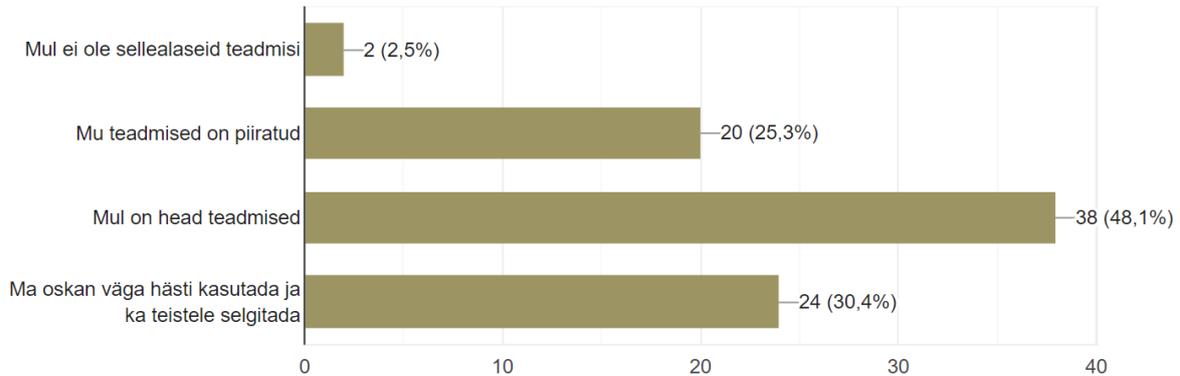
Information technology competencies and data literacy

Self-assessment of your skills, use of search engines and finding information (Google, Wiki or other). Results:

- 48% of the respondents rate their knowledge as good
- 30.4% of the respondents are very good at using and explaining to others
- knowledge is limited - 25.3% of respondents
- Cannot use at all (no knowledge) - 2.5% of respondents.

9. Tean, kuidas kasutada otsingumootoreid ja leida infot (Google, Wiki või mõni muu)

79 vastust



I regularly store information on an external storage medium (memory stick) and / or in the cloud.

Here the answers were split in half – half of respondents consider their knowledge and skills to be good or very good in this respect, and the half consider their skills to be limited or non-existent. Results:

- I have limited knowledge in this area - 36.5%
- I fully understand this and could explain it to others - 25.7%
- I have good knowledge in this regard - 25.7%
- I have no knowledge of this - 12.2%

10. Ma salvestan regulaarselt infot välisele andmekandjale (mälupeale) või/ja pilve.

74 vastust

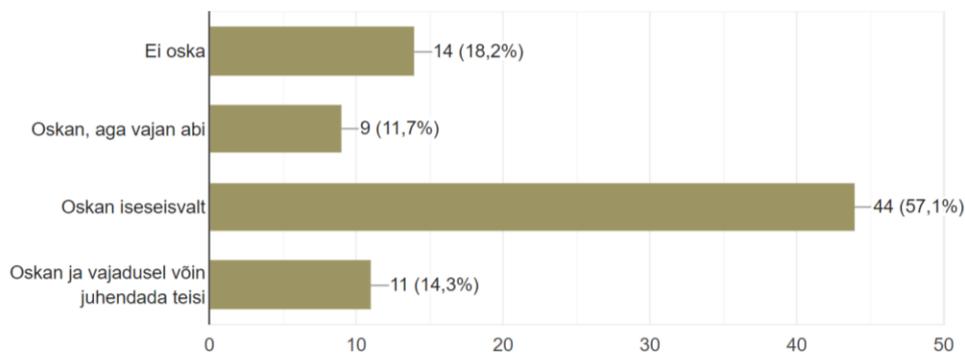


People cope better with e-commerce - when asked if people can compare the prices of products in online stores, more than half answered that they know how to:

- I can work independently - 57.1%
- I can and if necessary I can instruct others - 14.3%
- I can, but I need help - 11.7%
- Can't - 18.5%

11. Ma oskan võrrelda internetipoodides toodete hindu

77 vastust

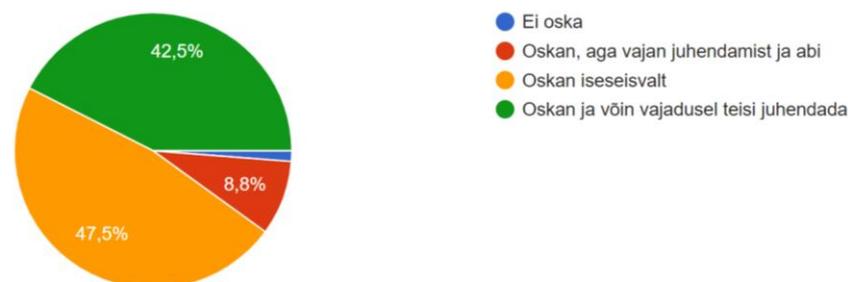


Information exchange and cooperation

99% of people can send, reply to and forward e-mails, including 47.5% know independently, 42.5% know themselves and can instruct others if necessary, 8.8% know how to supervise and only one person answered that they do not know.

12. Ma oskan e-kirju saata, neile vastata ja neid edasi saata

80 vastust



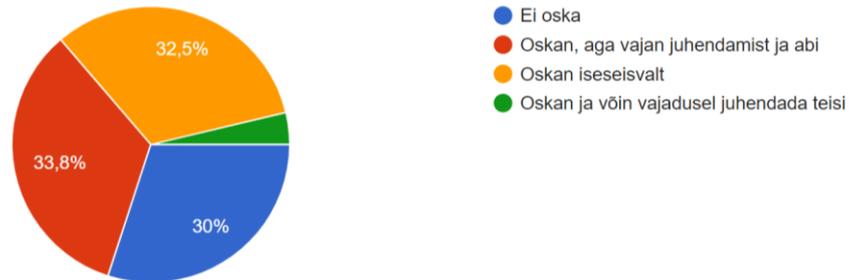
About a third of the respondents can create questionnaires and documents and collaborate on various web platforms (Google Drive, Dropbox, PBworks or others) very well and independently:

- Can't - 30%

- I can, but I need guidance and help - 33.8%;
- I can work independently - 32.5%;
- I can and can instruct others if necessary - 3.4% (3 people).

13. Oskan luua küsimustikke, dokumente ja teha koostööd erinevate veebiplatvormide abil: Google Drive, Dropbox, PBworks või teised

80 vastust

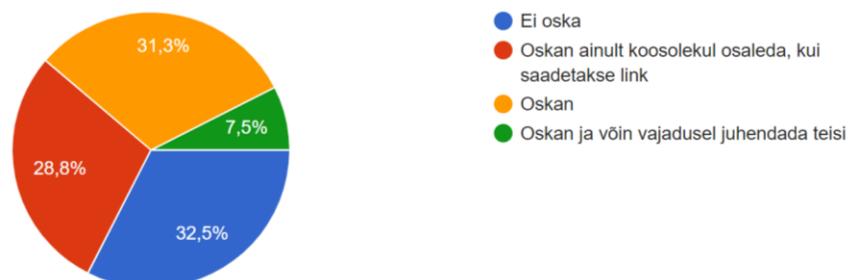


A quarter of the respondents can conduct a web meeting / video conference on Zoomi / Jitsi / Teams or some other platform (including instructing others) and a third do not know at all:

- I can instruct others if necessary - 7.5%
- I can - 31.3 %
- I can only participate in the meeting if a link is sent - 28.8%
- Does not know - 32.5%.

14. Oskan läbi viia veebikoosolekut/videokonverentsi Zoomi/Jitsi/Teamsi või mõnel muul platvormil

80 vastust



Creating digital content

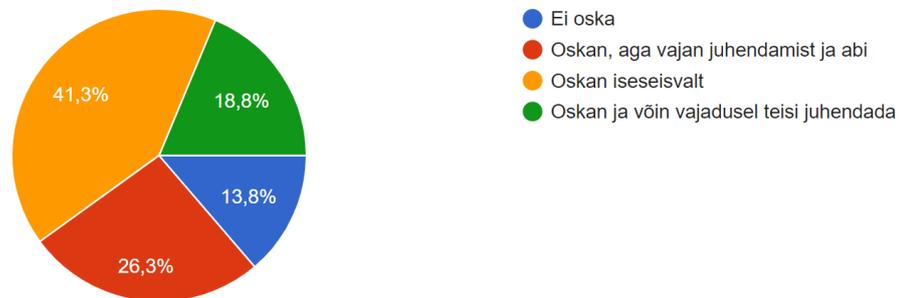
40% of respondents feel insecure about using word processing programs.

I can create and edit text and add pictures in a word processor. Results:

- Can't - 13.8%
- I can, but I need guidance and help - 26.3%
- I can work independently - 41.3%
- I can and can instruct others if necessary - 18.8%.

15. Oskan tekstitöötlusprogrammis luua ja muuta teksti ning lisada pilte

80 vastust



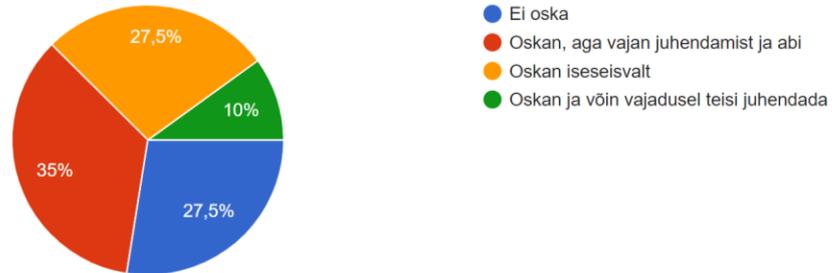
62.5% of the respondents feel insecure when using spreadsheet programs and only 10% are ready to instruct others in it.

I can use formulas and other options in the spreadsheet program in Excel. Results:

- Can't - 27.5%
- I can, but I need guidance and help - 35%
- I can work independently - 27.5%
- I can and can instruct others if necessary - 10%.

16. Oskan tabelitöötlusprogrammis Excel kasutada valemeid ja teisi võimalusi, mis on tööriistaribal

80 vastust



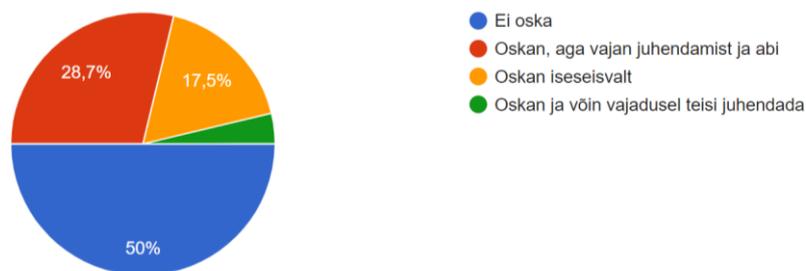
78.7% of the respondents feel insecure about creating audio and video files (data sets) and only 3.8% (3 people) say that they are ready to guide others.

I can create audio and video files (data sets). Results:

- Can't - 50%
- I can, but I need guidance and help - 28.7%
- I can work independently - 17.5%
- I can and can instruct others if necessary - 3.8%.

17. Oskan luua heli- ja videofaile (andmekogumeid)

80 vastust



Security

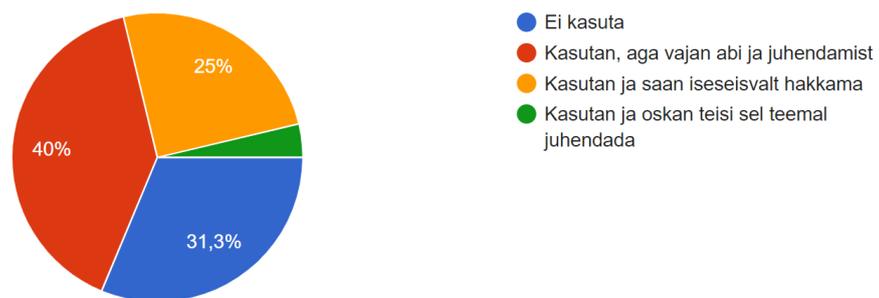
Less than a third of respondents ensure the security of their computers and other devices.

I use several preventive measures against computer network attacks (secure transmission of information on computer networks, encryption, anti-virus programs, firewalls). Results:

- Not used - 31.3%
- I use but need help and guidance - 40%
- I use and manage independently - 25%
- I use and can instruct others on this topic - 3.8%.

18. Kasutan mitmeid ennetusmeetmeid arvuti võrgurünnakute vastu (info turvaline edastus arvutivõrkudes, krüptimine, viirusetõrje programmid, tulemüürid)

80 vastust



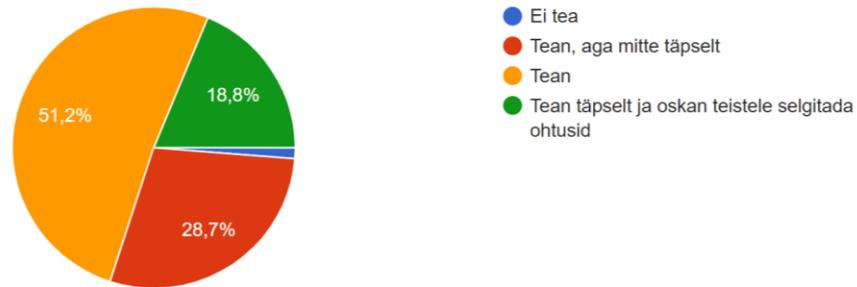
Much better are respondents rating their knowledge of personal data protection.

I know what personal information I shouldn't share and display online (e.g. on social media, scams, phishing, etc.). Results:

- Don't know - 1%
- I know, but not exactly - 28.7%
- I know - 51.2%
- I know exactly and can explain the dangers to others - 18.8%.

19. Tean, milliseid isikuandmeid ma ei peaks internetis jagama ja kuvama (nt sotsiaalmeedias, petukirjad, andmepüük jne).

80 vastust



Problem solving

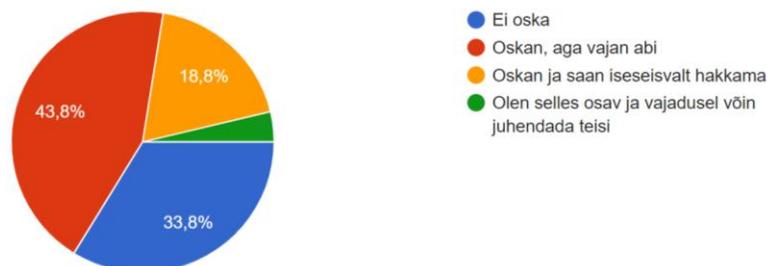
More than 77% of respondents need help solving technical problems.

If I'm having technical problems with my computer, I'm able to find solutions to the problem using the Internet. Results:

- Can't - 33.8%
- I can, but I need help - 43.8%
- I can and do independently - 18.8%
- I am good at this and can instruct others if necessary - 2.5%.

20. Kui mul on arvutiga tehnilisi probleeme, siis olen võimeline leidma probleemile lahendusi Interneti abil.

80 vastust



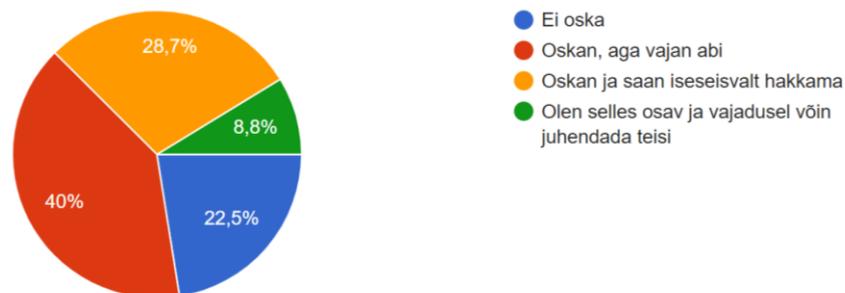
Changing the technical settings also creates difficulties for the respondents.

If necessary, I can change various settings in word processing and spreadsheet programs (add comments, footnotes, change line spacing, etc.). Results:

- Can't - 22.5%
- I can, but I need help - 40%
- I can manage independently - 28.7%
- I am good at this and can instruct others if necessary - 8.8%.

21. Vajadusel suudan muuta teksti- ja tabelitöötluste programmides erinevaid seadistusi (lisada kommentaare, allmärkusi, muuta ridade vahelisi tühikuid jne)

80 vastust



Conclusions

Half of the residents of Kanepi county have relatively good computer skills, but there are some specific computer skills, which the respondents admit that they should be improved. Local governments could support their inhabitants in improving these skills by organizing special courses.

Specific computer skills should be improved (solving technical problems when working with computers, creating audio and video and web pages, working in Excel, creating audio and video, using data clouds, protecting computers against cybercrime, etc.), which are not used effectively in everyday activities and are understood by citizens themselves.