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UPORABA
informacijsko-komunikacijskih tehnologija u Bosni i Hercegovini

USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN BOSNIA AND HERZEGOVINA

2022

Bosna i Hercegovina
Bosnia and Herzegovina

BHAS

Agencija za statistiku Bosne i Hercegovine
Agency for Statistics of Bosnia and Herzegovina

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KAZALO
CONTENTS

UVOD

Razvoj i uporaba informacijsko-komunikacijskih tehnologija transformirali su suvremeno društvo u „informacijsko društvo". Njegova glavna karakteristika je ta što informacijsko-komunikacijske tehnologije igraju najvažniju ulogu kako u proizvodnji i ekonomiji, tako i u svim ostalim sferama života pojedinca i društva u cjelini.

Agencija za statistiku Bosne i Hercegovine u proteklih pet godina, zajedno sa entitetskim statističkim institucijama, provodi istraživanja o korištenju informacijsko-komunikacijskih tehnologija. Prvo se odnosilo na kućanstva i pojedince, a drugo na poduzeća. Oba ova istraživanja provedena su 2022. godine.

Svrha ovoga istraživanja je prikazati razinu uporabe interneta i ostalih informacijsko-komunikacijskih tehnologija, te broj osoba u Bosni i Hercegovini koji su korisnici interneta, i za koje se svrhe upotrebljava internet. Ovi podaci čine važan izvor informacija za provođenje politika u sektoru informacijskog društva.

Koncepti i definicije koje se primjenjuju za IKT istraživanja usklađeni su sa Eurostat-ovom metodologijom za statistike o Informacijskom društvu, 2022, sa regulativom Europskog parlamenta i Vijeća br. 2020/1030 i 2020/1013 o statistici Zajednice o informacijskom društvu.

Kada je riječ o kućanstvima i pojedincima, referentno razdoblje činila su tri mjeseca koja su prethodila telefonskom intervjuiranju ili posjeti anketara, dok su se pojedina pitanja odnosila na cjelokupnu 2022. godinu.

Uzorak je dizajniran kao troetapno stratificirani slučajno izabrani uzorak. Jedinice uzorkovanja prve etape su jedan ili više popisnih krugova. Slučajno izabrana kućanstva sa bar jednim članom kućanstva starosti 16-74 godine unutar tih popisnih krugova su jedinice druge etape uzorkovanja, dok su slučajno izabrane osobe unutar tih izabranih kućanstava jedinice treće etape uzorkovanja.

Velična uzorka na razinu Bosne i Hercegovine je 8 167 kućanstava. Stopa odgovora je 80,8%, odnosno 6 603 kućanstava (stopa odgovora = broj jednica koje su odgovorile/sa broj jedinica izabran u uzorak).

INTRODUCTION

The development and use of information and communication technologies have transformed modern society into an "information society". Its main characteristic is that information and communication technologies play the most important role in both production and the economy, as well as in all other spheres of life of individuals and society as a whole.

In the past five years, the Agency for Statistics of Bosnia and Herzegovina, together with the entity statistical institutions, has been conducting research on the use of information and communication technologies. The first referred to households and individuals, and the second covered companies. Both of these researches were conducted in 2022.

The purpose of this survey is to show the level of Internet use and other information and communication technologies, as well as the number of people in Bosnia and Herzegovina who are Internet users and for which the Internet is used. These data constitute an important source of information for the implementation of policies in the information society sector.

The concepts and definitions used in ICT surveys are harmonized with the Eurostat Methodology for Information Society Statistics, 2022., with the European Parliament and Council Regulation No. 2020/1030 and 2020/1013 on Community Statistics on the Information Society.

When it comes of households and individuals, the reference period consisted of three months preceding the telephone interviews or interviewers visit, while certain issues were related to the entire 2022.

The sample was designed as a three-stage stratified random sample. The sampling units of the first stage are one or more census districts. Randomly selected households with at least one household member aged 16-74 within these census districts are units of the second sampling stage, while randomly selected persons within these selected households are units of the third sampling stage.

The sample size at the level of Bosnia and Herzegovina is 8 167 households. The response rate is 80.8%, or 6 603 households (response rate = number of units responded / with number of units selected in the sample).

Podaci su prikupljeni putem telefonskog anketiranja (CATI).

Data were collected through telephone interviewing (CATI)

Anketa za poduzeća provedena je na uzorku stratificiranom po veličini i djelatnosti. Okvir uzorka je Statistički poslovni registar. Primijenjen je stratificirani uzorak, veličina uzorka 2 634 poduzeća. Realizirani uzorak 2 454 poduzeća. Stopa odgovora iznosi 89,40%.

The survey of enterprises was conducted on a sample stratified by size and activity. The sample frame is the Statistical Business Register. The stratified sample was applied, a sample size of 2 634 enterprises. The realized sample of 2 454 enterprises. The response rate is 89.40%

Podaci su prikupljeni kombiniranim metodama: putem telefonskog anketiranja (CATI), anketiranje putem pošte.

The data were collected via CATI and survey by mail.

Istraživanje IKT-P provedeno je na temelju Eurostat smjernica. Koncepti i definicije koji se primijenjuju u istraživanju IKT-P usklađeni su sa EU Metodologijom za statistiku o informacijskom društvu, 2022.

The ICT-ENT survey was conducted according to Eurostat guidelines. Concepts and definitions used in the ICT-ENT survey are in line with the EU Methodology for Statistics on the Information Society, 2022.

Nadamo se da će ova publikacija pružiti korisnicima dovoljno podataka o trenutnom stanju u oblasti informacijsko-komunikacijskih tehnologija i da će poslužiti kao dobar temelj za planiranje njenog daljnjeg razvoja.

We hope that this publication will provide users with sufficient data on the current state of information and communication technologies and will serve as a good basis for planning its further development.

KUĆANSTVA I POJEDINCI
HOUSEHOLDS AND INDIVIDUALS

UZORAK

Istraživanja o uporabi informacijsko-komunikacijskih tehnologija u kućanstvima provedeno je na reprezentativnom uzorku od 8 167 kućanstava na teritoriju Bosne i Hercegovine. Stopa odgovora iznosi 80,8%, (6 603 kućanstva).

SAMPLE

The survey on the use of information and communication technologies in households was conducted on a representative sample of 8 167 households in the territory of Bosnia and Herzegovina. The response rate is 80.8%, (6 603 households).

Uzorak kućanstva *Household sample*	Entitet */Entity*			Ukupno BiH *Total BiH*	Tip kućanstva *Type of household*		Kućanstva sa i bez djece *Households with and without children*	
	Federacija BiH *Federation of BIH*	Republika Srpska	Distrikt Brčko *Brčko District*		Gradsko *Urban*	Ostalo *Other*	Kućanstva sa djecom mlađom od 16 godina *Households with children under 16 years of age*	Kućanstva bez djece mlađe od 16 godina *Households without children under 16 years of age*
Broj odgovora *Number of responses*	3 463	2 604	536	6 603	3 394	3 209	1 817	4 786
%	52,4	39,4	8,1	100,0	51,4	48,6	27,5	72,5

Isti uzorak koji je upotrebljen kod kućanstava iskorišten je i za anketiranje osoba starosti od 16 do 74 godine koji žive na teritoriju Bosne i Hercegovine, uzorak je obuhvatio 8 167 pojedinca. Stopa odgovora iznosi 80,8% (6 603 osoba).

The same sample used in households was also used for the survey of persons aged 16 to 74 years living in the territory of the Bosnia and Herzegovina, the sample included 8 167 individuals. The response rate is 80.8% (6 603 persons).

Uzorak osobe *Person sample*	Spol */Gender*		Ukupno BiH *Total BiH*	Starosna dob */Age*					
	Muški *Male*	Ženski *Female*		16-24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74
Broj odgovora *Number of responses*	3 169	3 434	6 603	422	643	1 041	1 383	1 535	1 579
%	48,0	52,0	100,0	6,4	9,7	15,8	20,9	23,2	23,9

Uzorak osobe *Person sample*	Ukupno BiH *Total BiH*	Obrazovna razina ispitanika *Educational level of respondents*			Radni status ispitanika *Working status of the respondents*			
		Osnovno ili niže srednje obrazovanje *Primary or lower secondary education*	Srednjoškolsko obrazovanje *Secondary education*	Više i visoko obrazovanje *Tertiary education*	Zaposlen *Employed*	Nezaposlen *Unemployed*	Student *Student*	Ostali (umirovljenici, neaktivni) *Other not in the labour force (retired, inactive)*
Broj odgovora *Number of responses*	6 603	1 638	4 096	869	2 138	1 692	159	2 614
%	100,0	24,8	62,0	13,2	32,4	25,6	2,4	39,6

GLAVNI POKAZATELJI

MAIN INDICATORS

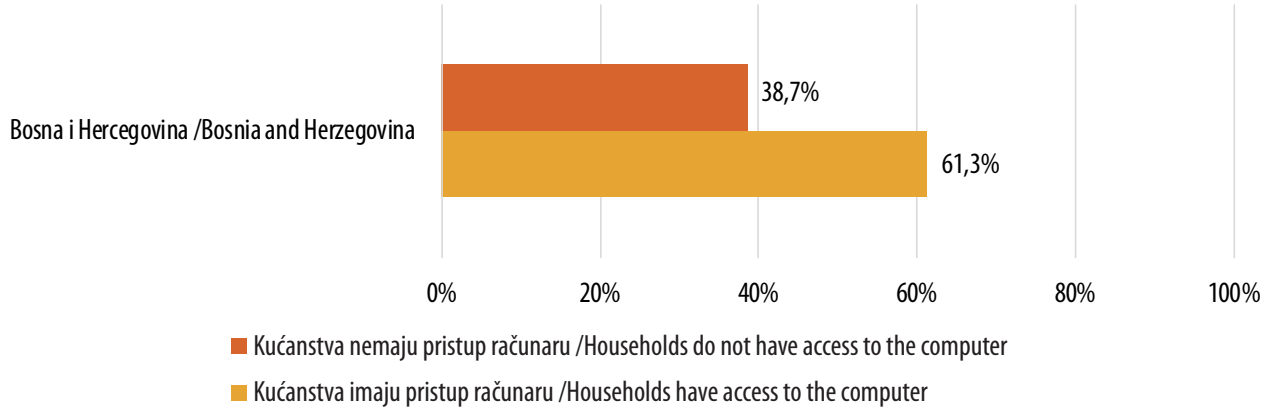
Računari u kućanstvima (bilo koje vrste: desktop, laptop, netbook, tablet, osim smartphone)

Computers in households (any type: desktop, laptop, netbook, tablet, except smartphones)

Rezultati istraživanja o uporabi informacijsko-komunikacijskih tehnologija u kućanstvima i pojedinačno (IKT-D) u Bosni i Hercegovini, pokazali su sljedeće:
• 61,3% kućanstava imaju pristup računaru,
• 38,7% kućanstava nemaju pristup računaru.

The results of the survey on the use of information and communication technologies in households and individually (ICT-HH) in Bosnia and Herzegovina have shown the following:
• 61.3% of households have access to the computer,
• 38.7% of households do not have computer access.

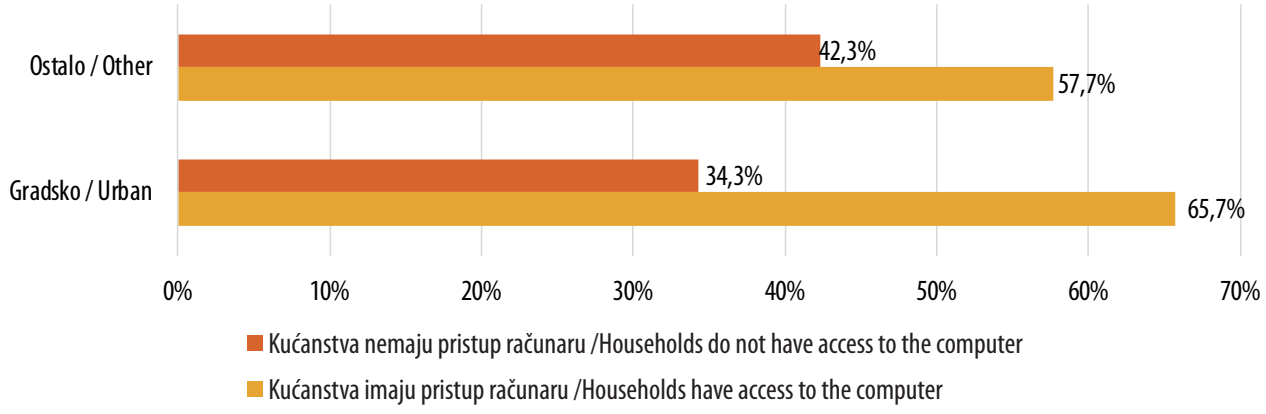
Grafikon 1. Postotak kućanstava koja imaju pristup računaru, BIH
Graph 1 Households access to the computer, BIH



Zastupljenost računara u kućanstvima varira zavisno o tipu naselja. U urbanim sredinama 65,7% kućanstava ima pristup računaru, u ostalim dijelovima 57,7%.

The representation of computers in households varies depending on the type of settlement. In urban areas 65.7% of households have access to a computer in other parts 57.7%

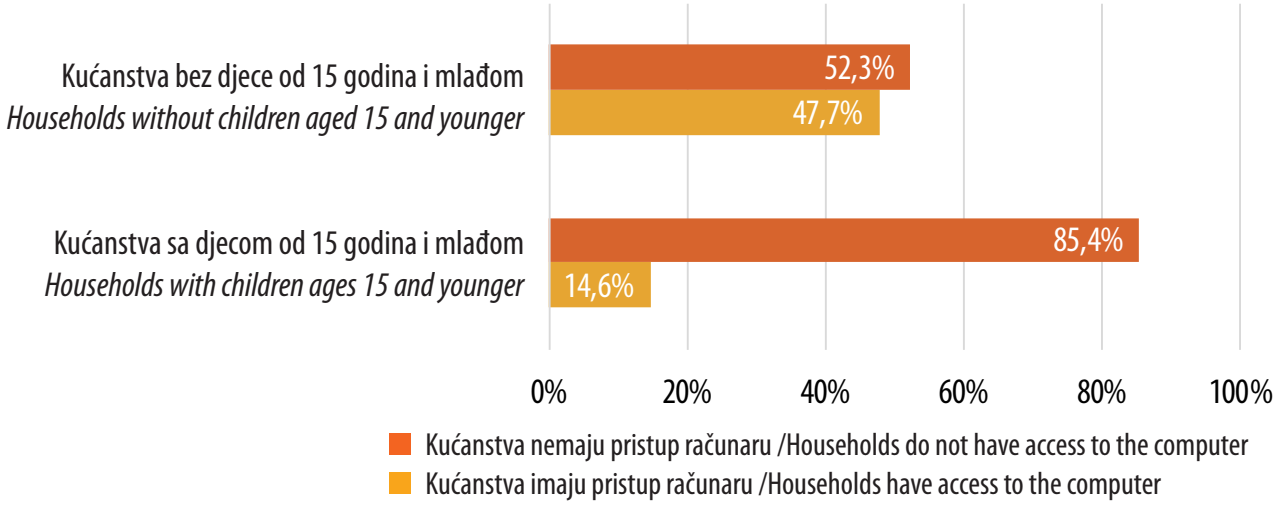
Grafikon 2. Postotak kućanstava koja imaju pristup računaru, prema tipu naselja, BIH
Graph 2 Percentage of households which have access to a computer, by settlement type, BiH



Značajne razlike se mogu primijetiti kada se uspoređuje pristup računaru u kućanstvima sa djecom mlađom od 16 godina (85,4%) i kućanstvima bez djece mlađe od 16 godina (52,3%).

Significant differences can be observed when comparing computer access in households with children under 16 (85.4%) and households without children under 16 (52.3%).

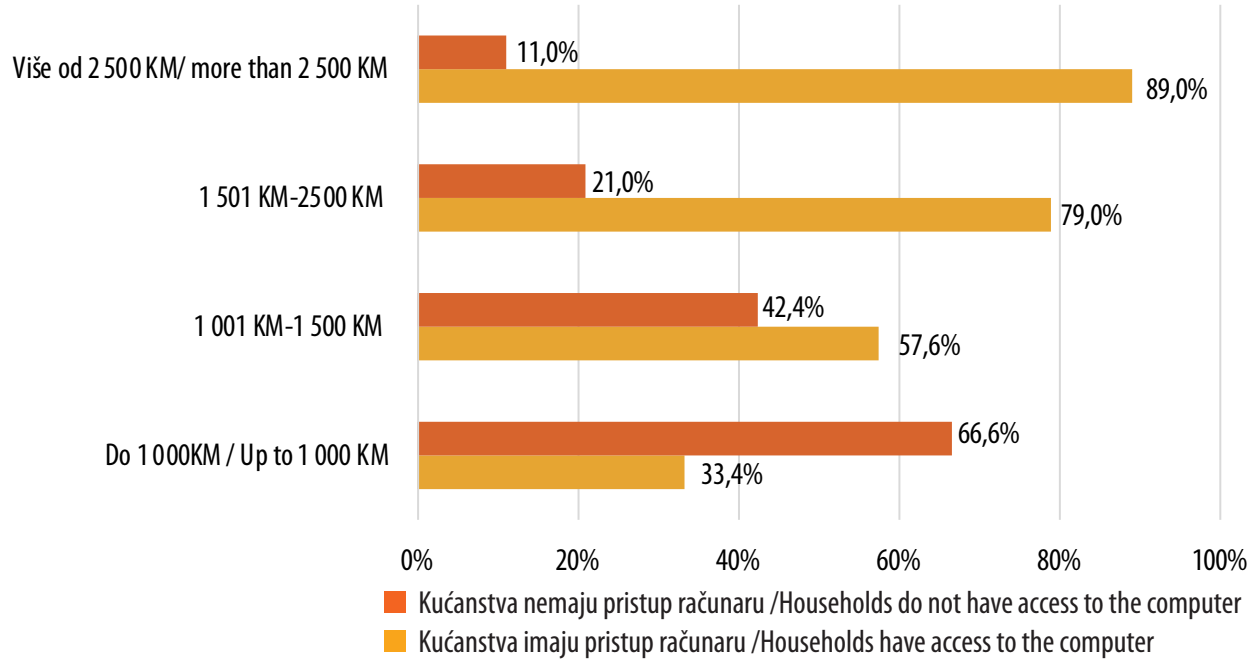
Grafikon 3. Postotak kućanstava koja imaju pristup računaru, sa djecom od 15 godina i mlađom, BiH
Graph 3 Percentage of households which have access to the computer, with children aged 15 and younger, BiH



Jaz u pristupu kućanstava računaru vidljiv je u strukturi kućanstava po mjesečnom dohotku. Pristup računaru većinom imaju kućanstva sa mjesečnim primanjima većim od 1 500 KM (79%), odnosno prihodima većim od 2 500 KM (89%), dok udio kućanstava sa primanjima do 1 000 KM iznosi svega 33,4%.

The gap in household access to computers is visible in the structure of households by monthly income. Access to computer mostly have households with monthly income of over 1 500 KM (79%) and revenue of more than 2 500 KM (89%), while the share of households with incomes up to 1 000 KM is only 33.4%.

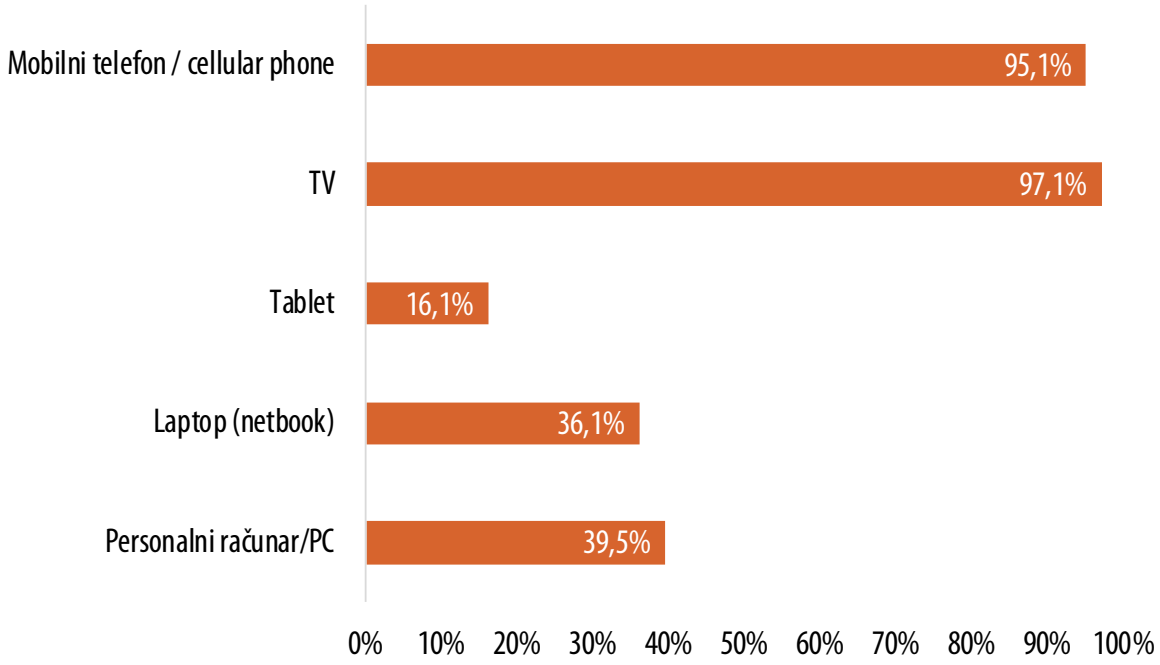
Grafikon 4. Postotak kućanstava koja imaju pristup računaru, prema mjesečnim neto prihodima kućanstva, BiH
Graph 4 Percentage of households which have access to the computer, according to monthly net income of the household, BiH



Na pitanje koje se odnosi na uređaje kojima kućanstvo ima pristup, ispitanici su mogli dati više odgovora. Istraživanje pokazuje da 97,1% kućanstava posjeduje TV, a 95,1% kućanstava posjeduje mobilni telefon.

On the question relating to devices which household has access, respondents could give more than one answer. The survey shows that 97.1% of households own a TV and 95.1% of households own a mobile phone.

Grafikon 5. Uređaji koji su zastupljeni u kućanstvima (%), Bosna i Hercegovina
Graph 5 Devices that are in households (%), Bosnia and Herzegovina



Internet u kućanstvima

Rezultati istraživanja o uporabi informacijsko-komunikacijskih tehnologija u kućanstvima i pojedinačno (IKT-D) u Bosni i Hercegovine, pokazali su sljedeće:
- kućanstava imaju pristup internetu: 75,9%,
- kućanstava nemaju pristup internetu: 23,9%,
- kućanstvo ne zna da li ima pristup internetu: 0,2%.

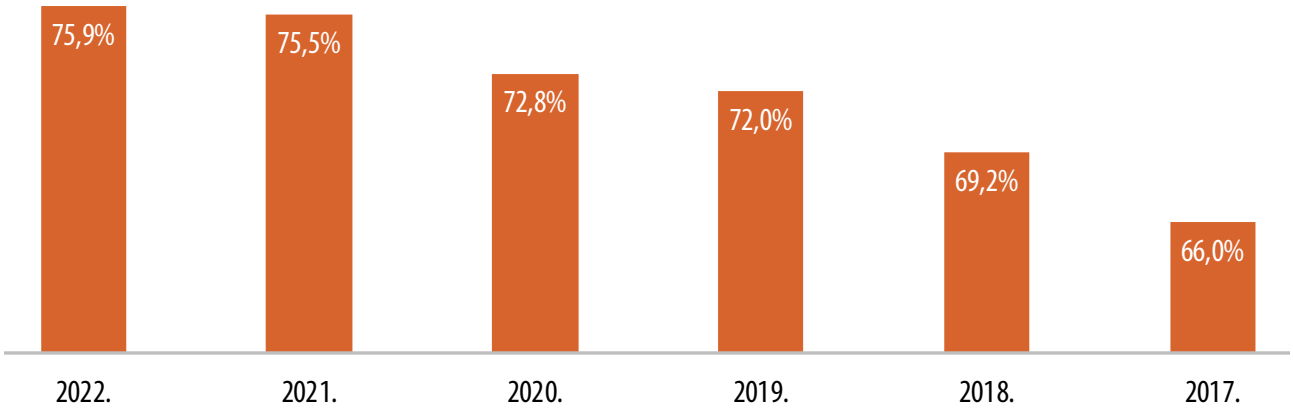
U Bosni i Hercegovini 75,9% kućanstava ima pristup internetu, što je povećanje od 0,9% u odnosu na 2021. godinu.

Internet in households

The results of the survey on the use of information and communication technologies in households and individually (ICT-HH) in Bosnia and Herzegovina have shown the following:
- *households have access to the Internet: 75.9%*
- *households do not have Internet access: 23.9%*
- *households do not know whether it has access to the Internet: 0.2%*

In Bosnia and Herzegovina, 75.9% of households have internet access, an increase of 0.9% compared to 2021.

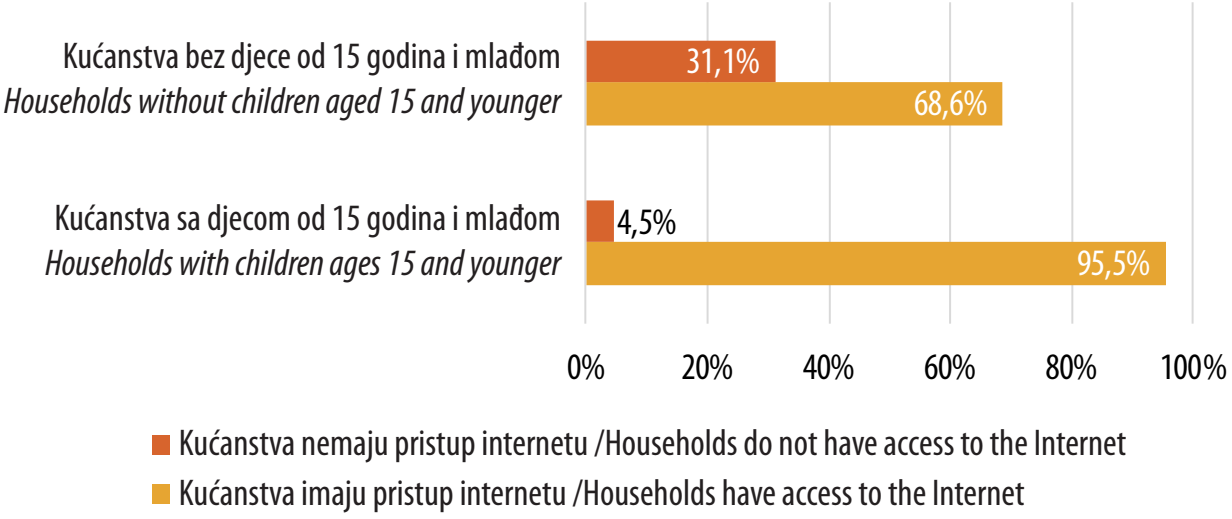
Grafikon 6. Postotak kućanstava koja poseduju internet priključak, Bosna i Hercegovina
Graph 6 Percentage of households that own internet connection, BIH



Rezultati istraživanja su pokazali da 95,5% kućanstava koja imaju djecu ispod 16 godina imaju pristup internetu. Rezultati istraživanja su pokazali da 68,6% kućanstava koja nemaju djecu ispod 16 godina, imaju pristup internetu.

The survey results showed that 95.5% of households with children under 16 have an internet access. The 68.6% of households have access to the Internet, without children aged under 16.

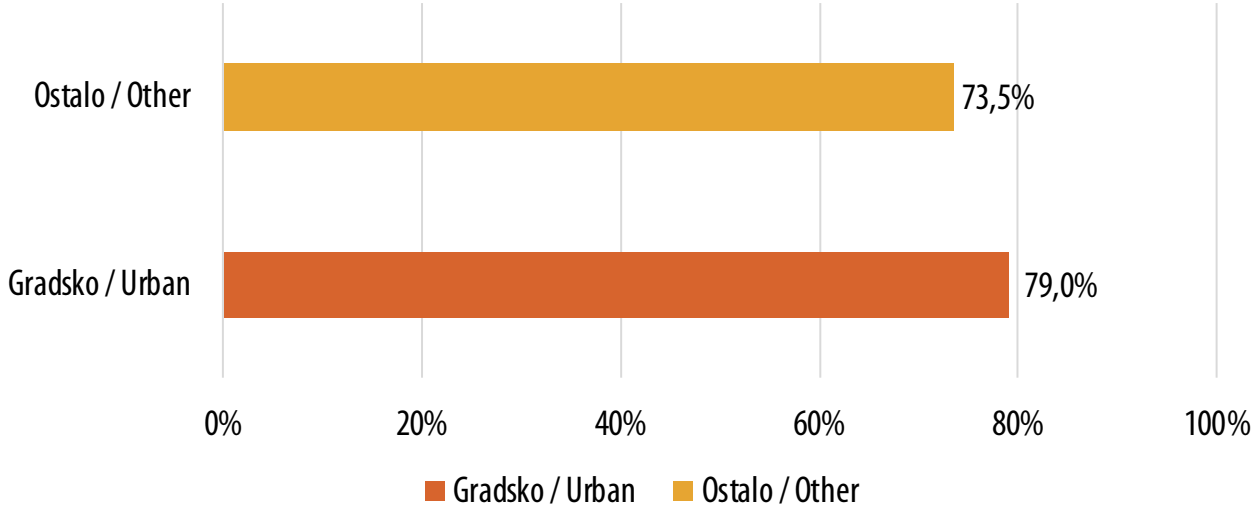
Grafikon 7. Postotak kućanstava koja imaju pristup internetu, sa djecom od 15 godina i mlađom, BIH
Graph 7 Percentage of households which have access to the Internet, with children aged 15 and younger, BIH



Internet priključak u kućanstvima varira zavisno o tipu naselja. U gradskim sredinama 79,0% kućanstava ima internet priključak, u ostalim sredinama 73,5%.

Internet connection in households varies depending on the type of settlement. In urban areas 79.0% of households have internet connection in other areas 73.5%

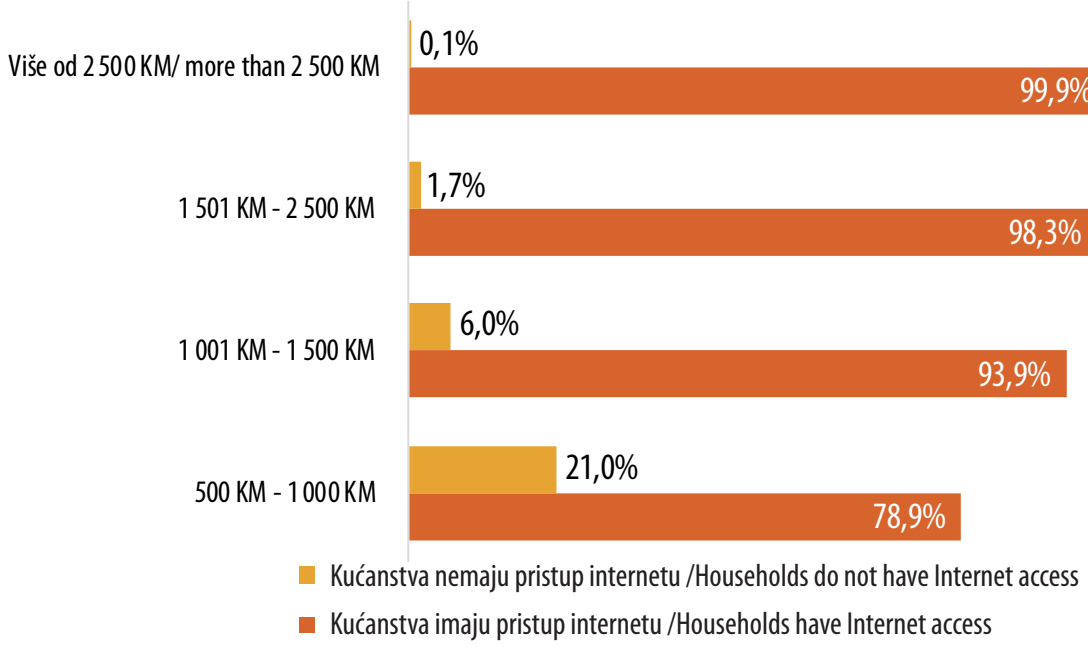
Grafikon 8. Postotak kućanstava koja posjeduju internet priključak u 2022. godini, prema tipu naselja
Graph 8 Percentage of households that own internet connection in 2022, by the type of settlement



Jaz u pristupu kućanstava internetu vidljiv je u strukturi kućanstava po mjesečnom dohotku. Pristup internetu većinom imaju kućanstva sa mjesečnim primanjima većim od 1 000 KM (93,9%), 1 500 KM (98,3%), odnosno prihodima većim od 2 500 KM (99,9%), dok udio kućanstava sa primanjima do 1 000 KM iznosi 62,1%.

The gap in household access to internet is visible in the structure of households by monthly income. Access to computer mostly have households with monthly income of over 1 000 KM (93.9%), 1 500 KM (98.3%) and revenue of more than 2 500 KM (99.9%), while the share of households with incomes up to 1 000 KM is 62.1%.

Grafikon 9. Postotak kućanstava koja imaju pristup internetu, prema mjesečnim neto prihodima kućanstva, BiH 2022. / *Graph 9* Percentage of households which have internet connection, according to monthly net income of the household, BiH 2022



Pojedinci: uporaba interneta

U Bosni i Hercegovini je 78,7% osoba koristilo internet u posljednja tri mjeseca, 0,6% ispitanika koristilo je internet prije više od tri mjeseca, a 2,1% prije više od godinu dana. Ispitanici koji nikad nisu koristili internet je 18,5%.
Za 5,4% povećao se broj korisnika interneta u odnosu na 2021. godinu.

Udio korisnika interneta (u posljednja tri mjeseca), prema razini obrazovanja:
• osobe s višim i visokim obrazovanjem: 97,1%,
• osobe sa srednjim obrazovanjem: 85,5%,
• osobe sa osnovnim ili niže srednjim obrazovanjem: 50,1%.

Udio korisnika interneta (u posljednja tri mjeseca), prema spolu:
• Muškarci: 80,8%,
• Žene: 77%.

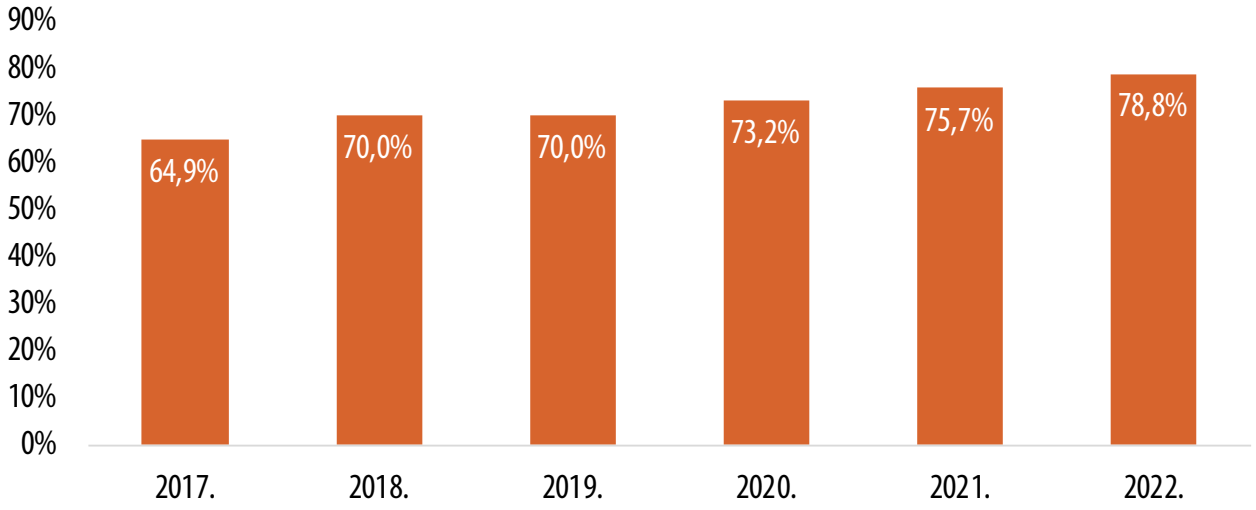
Individuals: us of the Internet

In Bosnia-Herzegovina, 78.7% of persons used the Internet during the last three months, 0.6% of respondents used the internet more than three months ago, and 2.1% more than a year ago. 18.5% of respondents never used the Internet.
The number of Internet users increased by 5.4% compared to year 2021

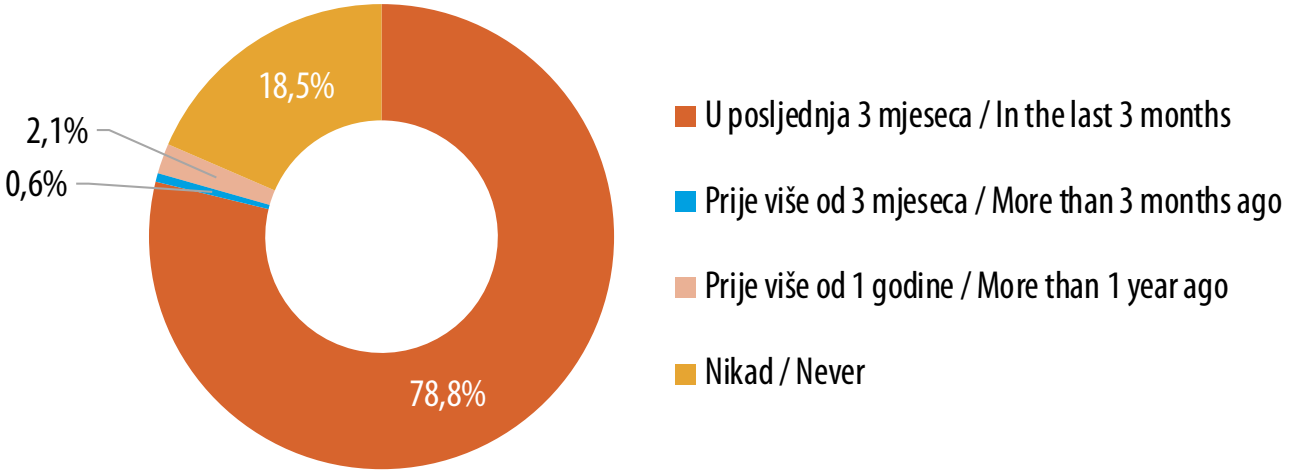
Share of Internet users (in the last three months), by educational attainment level:
• persons with higher education: 97.1%
• persons with secondary education: 85.5%
• persons with primary or lower secondary education: 50.1%

Share of Internet users (in the last three months), by gender:
• Males: 80.8%
• Females: 77%

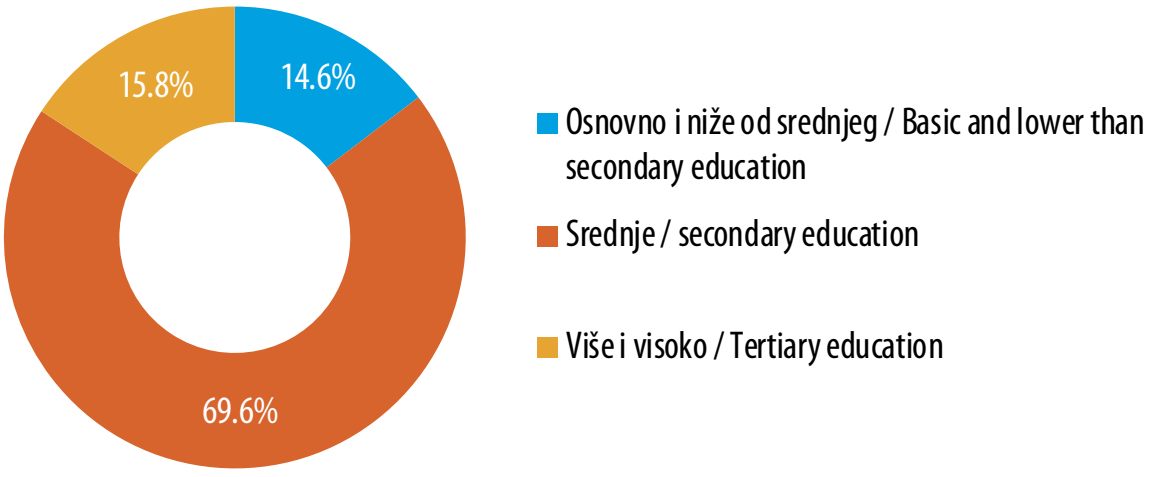
Grafikon 10. Osobe koje su koristile internet u posljednja 3 mjeseca
Graph 10 Persons who used the Internet in the last 3 months



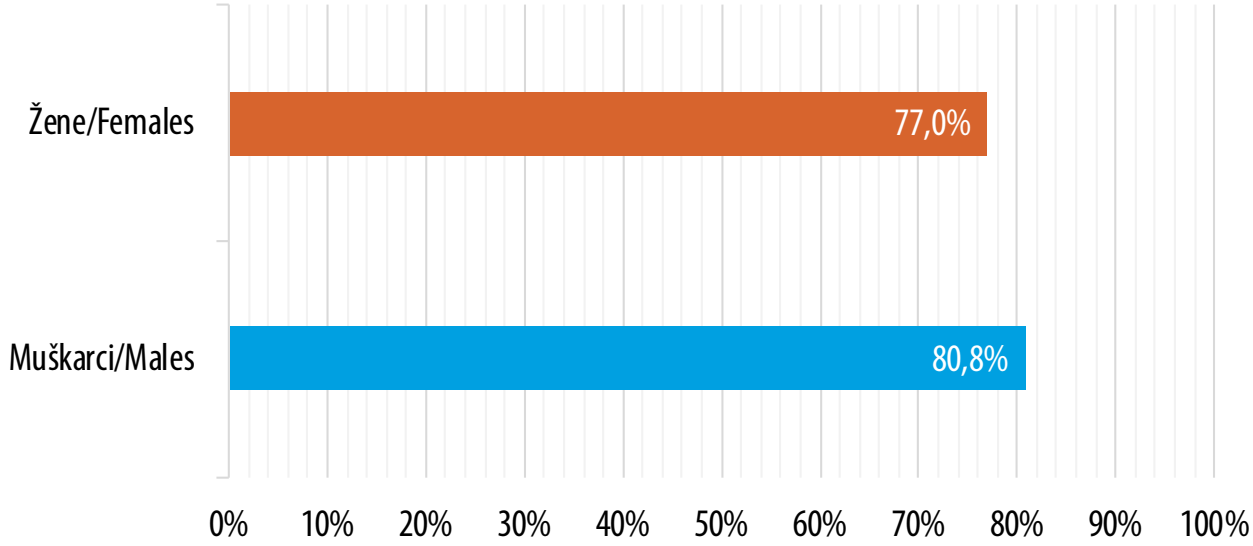
Grafikon 11. Osobe koje su koristile internet, 2022.
Graph 11 Persons who used the Internet, 2022



Grafikon 12. Struktura obrazovanja korisnika interneta, 2022.
Graph 12 Structure of education of Internet users, 2022



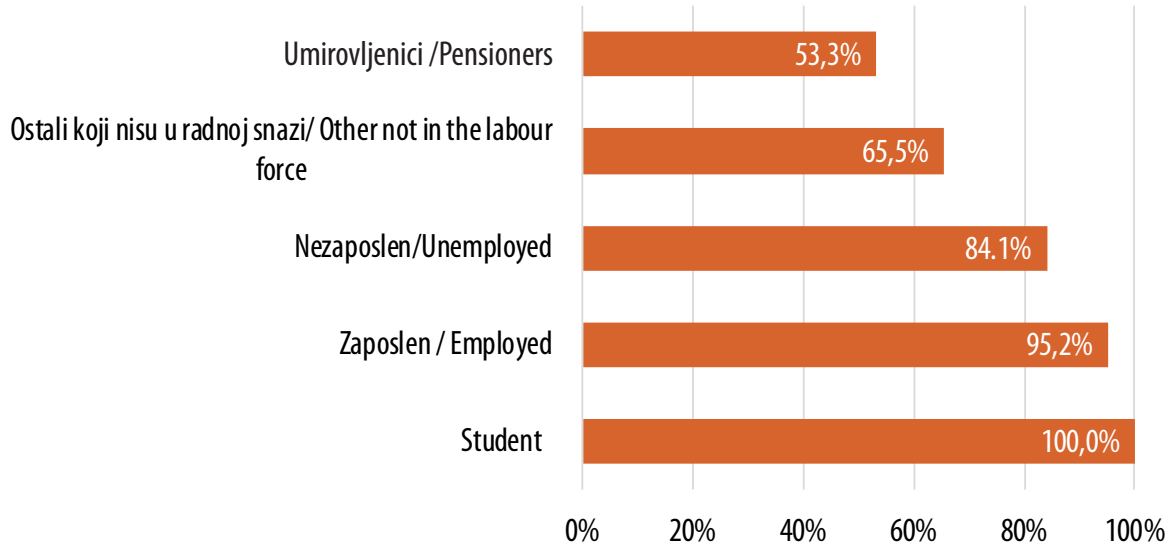
Grafikon 13. Udio korisnika interneta (u posljednja tri mjeseca), prema spolu 2022.
Graph 13 The share of Internet users (in the last three months), by gender 2022



Postotak korisnika interneta u zadnja tri mjeseca, prema radnom statusu:
• 95,2% zaposlenih osoba;
• 84,1% nezaposlenih osoba;
• 100,0% studenata;
• 53,3% umirovljenici;
• 65,5% ostali (kućanica, neaktivno stanovništvo i sl)

The share of Internet users is three months, by to the working status:
• *95.2% of employed persons;*
• *84.1% of unemployed persons;*
• *100.0% of students;*
• *53.3% of pensioners*
• *65.5% of others (Fulfilling domestic tasks, inactive population, etc.)*

Grafikon 14. Udio korisnika interneta (u posljednja tri mjeseca), prema radnom statusu, Bosna i Hercegovina
Graph 14 The share of Internet users (in the last three months), by to employment situation, Bosnia and Herzegovina



Na pitanje koliko su često, u prosjeku, koristili internet tijekom posljedna tri mjeseca, 91,4% ispitanika odgovorilo je: više puta tijekom dana.

Više od 1 400 000 osoba koristi internet više puta tijekom dana.

Rezultati istraživanja pokazali su sljedeće:
• Internet korisnici starosne dobi od 16 do 24 godine, 99,4% ispitanika koristi internet više puta tijekom dana;

• Internet korisnici starosne dobi od 25 do 54 godine, 94,2% ispitanika koristi internet više puta tijekom dana;

• Internet korisnici starosne dobi od 55 do 74 godine, 83,1% ispitanika koristi internet više puta tijekom dana.

When asked how often they used the Internet for the last three months on average, 91.4% respondents answered: multiple times during the day.

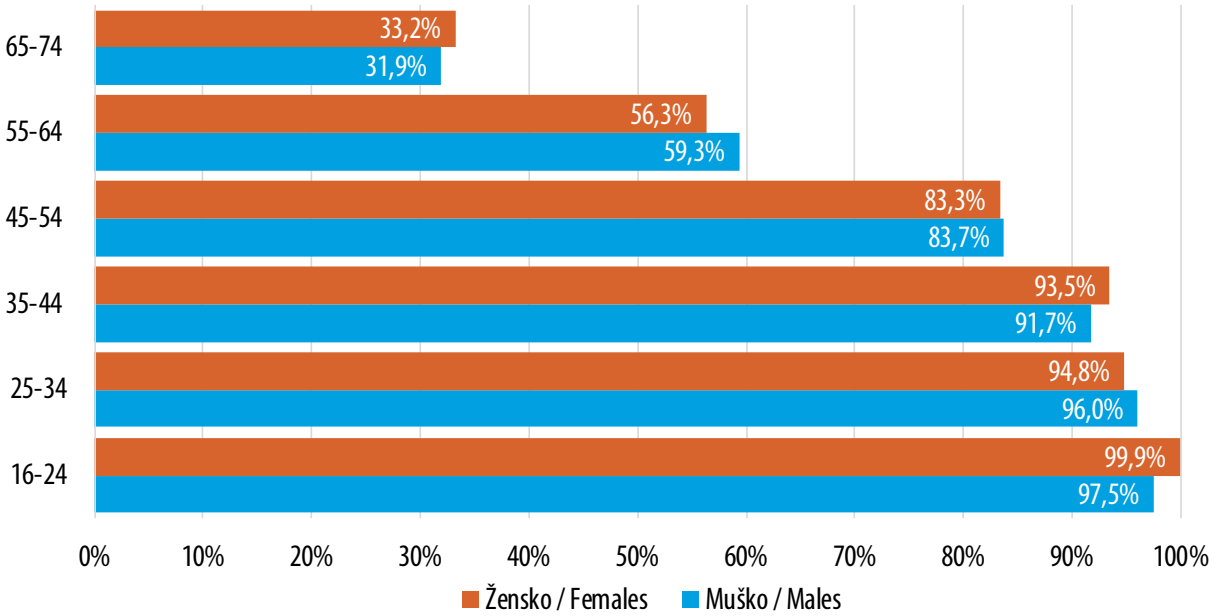
More than 1 400 000 people use the Internet multiple times during the day.

The results of the survey showed the following:
• Internet users aged 16-24, 99.4% of respondents use the Internet multiple times during the day;

• Internet users aged 25-54, 94.2% of respondents use the Internet multiple times during the day;

• Internet users aged 55-74, 83.1% of respondents use the Internet multiple times during the day.

Grafikon 15. Korištenje interneta (više puta tijekom dana), prema spolu i starosti, Bosna i Hercegovina, 2022.[1]
Graph 15 Internet usage (multiple times during the day), by gender and age, Bosnia and Herzegovina, 2022[1]

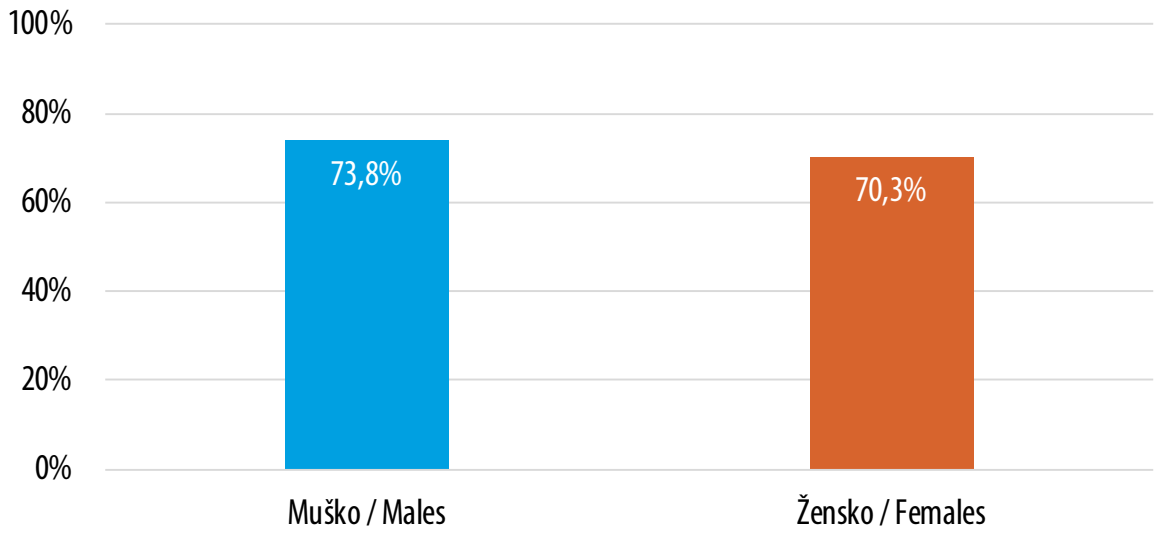


[1] Podaci se odnose na ukupnu populaciju.
[1] *Data refer to the total population.*

Analiza ispitanika prema spolu pokazuje da internet koristi više puta tijekom dana 73,8% osoba muškog spola, a 70,3% osoba ženskog spola koristilo internet više puta tijekom dana.

An analysis of respondents by gender shows that Internet usage multiple times during the day, 73.8.% of males and 70.3% females used the Internet multiple times during the day.

Grafikon 16. Udio korisnika interneta (više puta tijekom dana) prema spolu, Bosna i Hercegovina, 2022.[2]
Graph 16 The share of Internet users (multiple times during the day) by gender, Bosnia and Herzegovina, 2022[2]



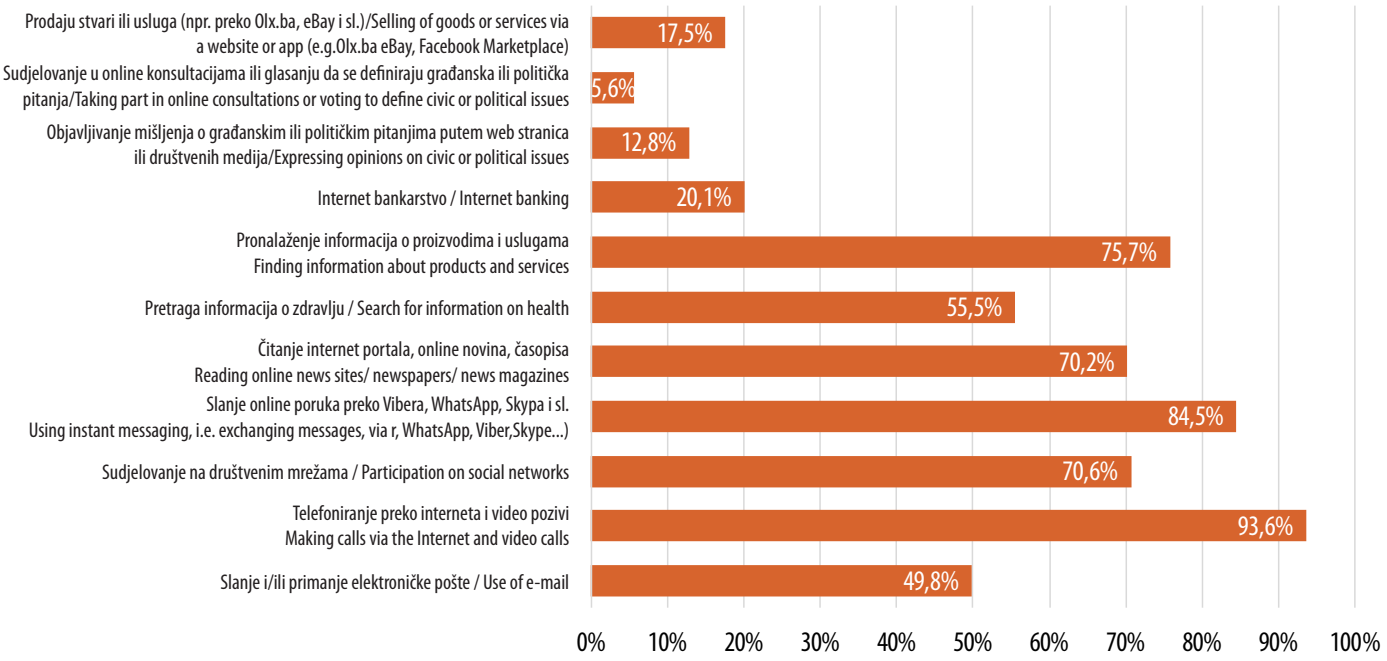
Ispitanici koji su koristili internet tijekom posljednja tri mjeseca, internet su u velikoj mjeri koristili za telefoniranje preko interneta, video pozivi (93,6%), slanje online poruka preko Skypa, Messengera, WhatsAppa, Vibera, itd. (84,5%), čitanje online novina, časopisa (70,2%), sudjelovanje na društvenim mrežama, kao što su Facebook i Twitter (70,6%).

Pretraživnje informacija o zdravlju (npr. rane, bolesti, ishrana, poboljšanje zdravlja i sl.) (55,5%), pronalaženje informacija o proizvodima i uslugama (75,7%), značajan broj ispitanika koristili su internet za slanje/primanje elektroničke pošte (e-mail) (49,8%).

During the last three months, respondents have largely used the Internet for phone calls over the Internet and video calls (93.6%), using instant messaging, i.e. exchanging messages, for example, via Skype, Messenger, WhatsApp, Viber (84.5%), reading online news sites /newspapers /news magazines (70.2%), participating in social networks like Facebook and Twitter (70.6%).
Seeking health-related information (e.g. injuries, diseases, nutrition, improving health, etc.)(55.5%), finding information about products and services (75.7%), a significant number of respondents used the Internet to Sending / receiving e-mails (49.8%).

[2] Podaci se odnose na ukupnu populaciju.
[2] *Data refer to the total population.*

Grafikon 17. Tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u postotcima, Bosna i Hercegovina, 2022.[3] */Graph 17 Activities of internet use (for private use) in the last three months, in percentages, Bosnia i Herzegovina 2022*[3]

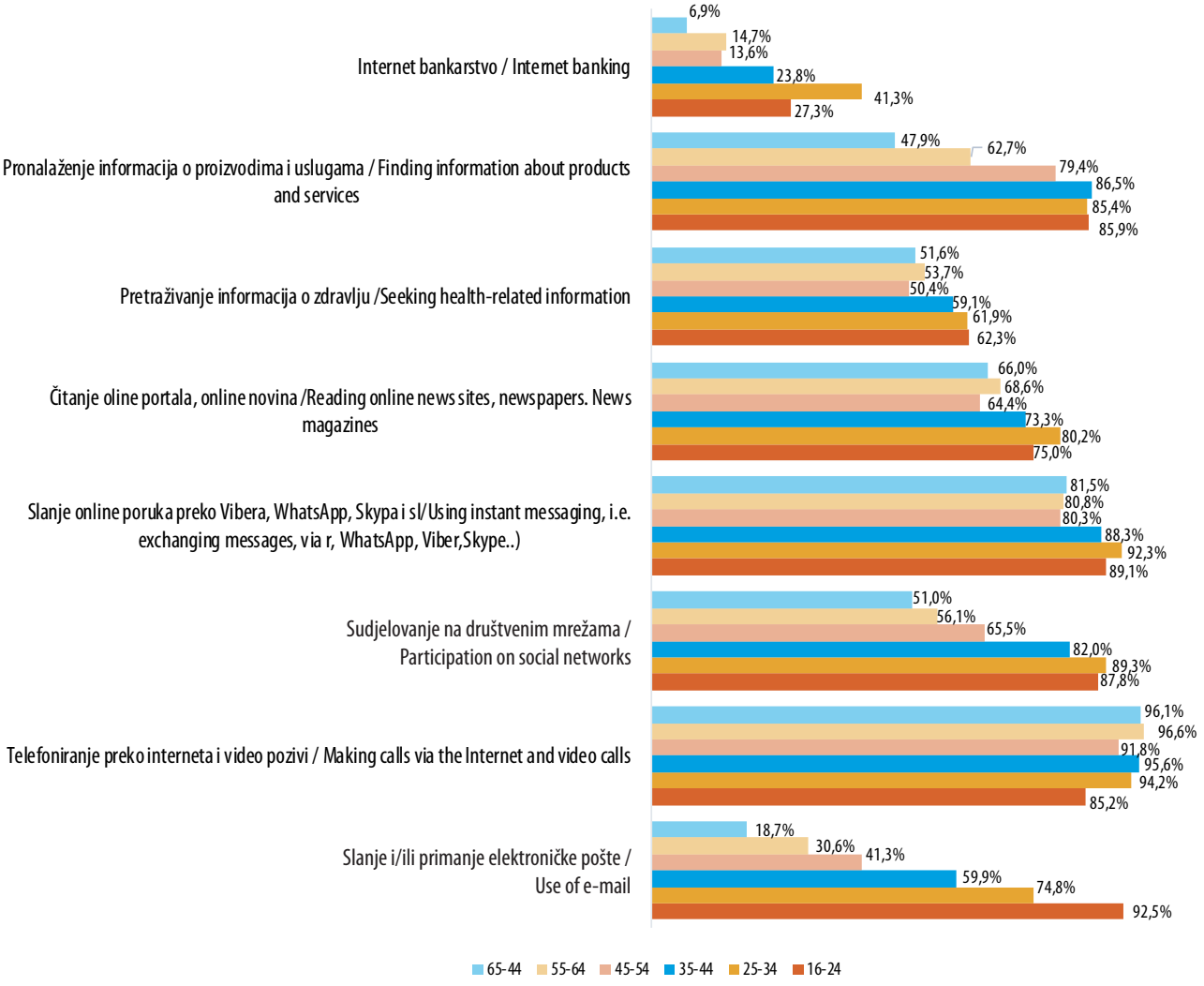


[3] Podaci se odnose na osobe koje koriste internet u posljednja 3 mjeseca.
[3] *The data refers to persons who use the Internet in the last 3 months.*

Internet populacija od 65 do 74 godine najčešće je koristila internet za telefoniranje preko interneta i video poziva i to sa 96,1 %.
Internet populacija od 16 do 24 godine najčešće je koristila internet za slanje i primanje elektroničke pošte 92,5%.
Slanje online poruka preko Skypa, Messengera, WhatsAppa, Vibera i sl. najviše je koristila internet populacija od 25 do 34 godine, 92,3%.
Usluge internet bankarstva najviše koristi populacija od 25 do 34 godine i on iznosi 41,4%.

The Internet population of 65 to 74 years is the most common use of the Internet for making calls and internet video calls with 96.1%.
Internet population aged 16 to 24, most often used the Internet to send and receive e-mail 92.5%.
Using instant messaging, i.e. exchanging messages, for example, via Skype, Messenger, WhatsApp, Viber was most used by the Internet population of 25 to 34 years, 92.3%.
Internet banking services are mostly used by the population of 25 - 34 and it is 41.4%.

Grafikon 18. Najčešći tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u postotcima, po starosnoj dobi[4] /*Graph 18 The most common types of internet use (for private use) in the last three months, in percentages, by age*[4]

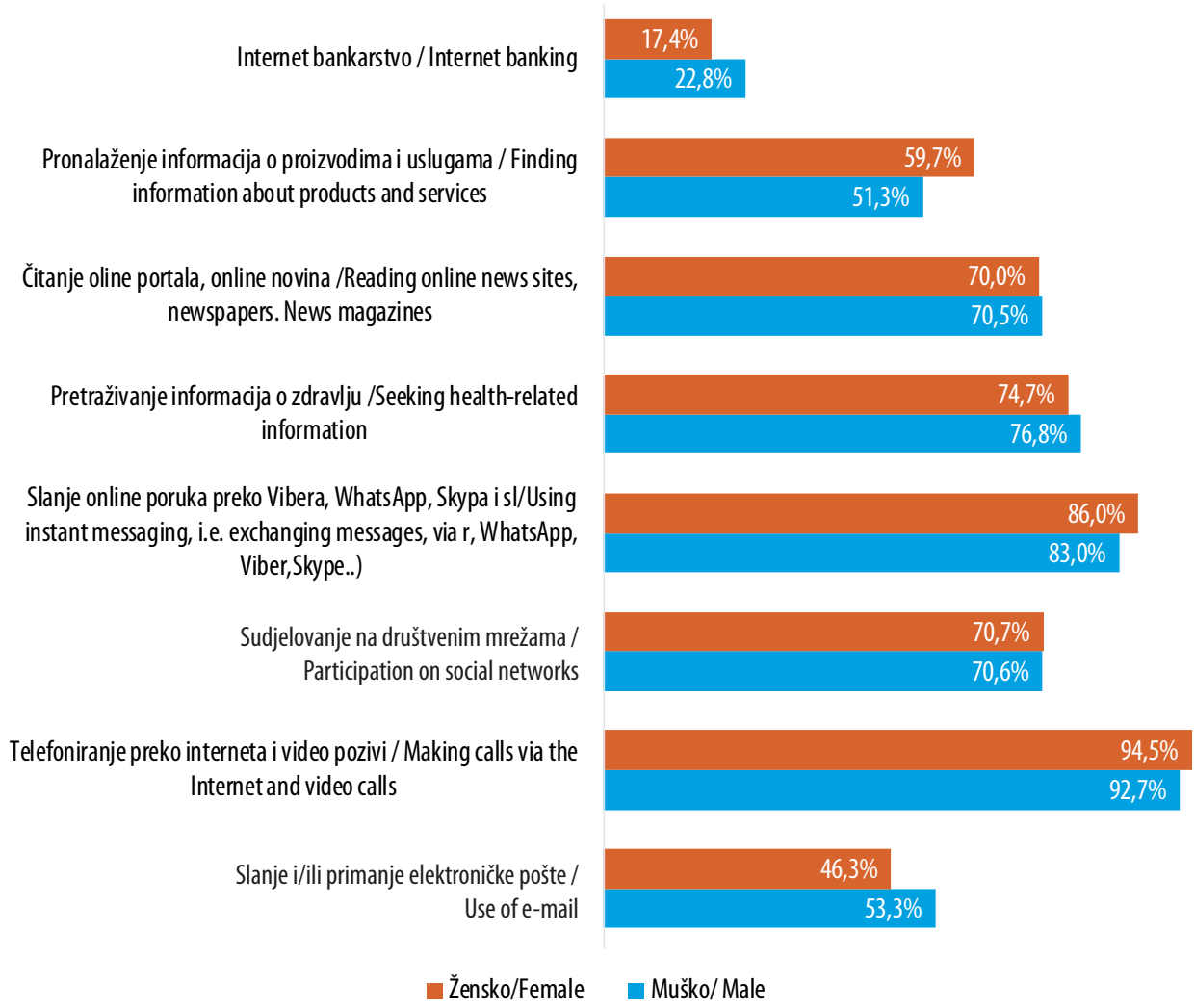


[4] Podaci se odnose na osobe koje koriste internet u posljednja 3 mjeseca.
[4] *The data refers to persons who use the Internet in the last 3 months.*

Analiza ispitanika prema spolu pokazalo da je 92,7% osoba muškog spola, a 94,5% ženskog spola internet populacije je koristilo internet za telefoniranje preko interneta i video pozive, dok je 83,0% ispitanika muškog spola, a 86,0% ženskog spola koristili internet za slanje online poruka preko Skypa, Messengera, WhatsAppa, Vibera, itd.

The analysis of respondents by gender showed that 92.7% of males and 94.5% of females of the Internet population making calls (including video calls) over the internet, while 83.0% of respondents of males and 86.0% of females for Using instant messaging, i.e. exchanging messages, for example, via Skype, Messenger, WhatsApp, Viber.

Grafikon 19. Najčešći tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca, po spolu, 2022[5]
Graph 19 The most common types of internet use (for private use) in the last three months, by gender, 2022[5]



[5] Podaci se odnose na osobe koje koriste internet u posljednja 3 mjeseca.
[5] *The data refers to persons who use the Internet in the last 3 months.*

Javna uprava

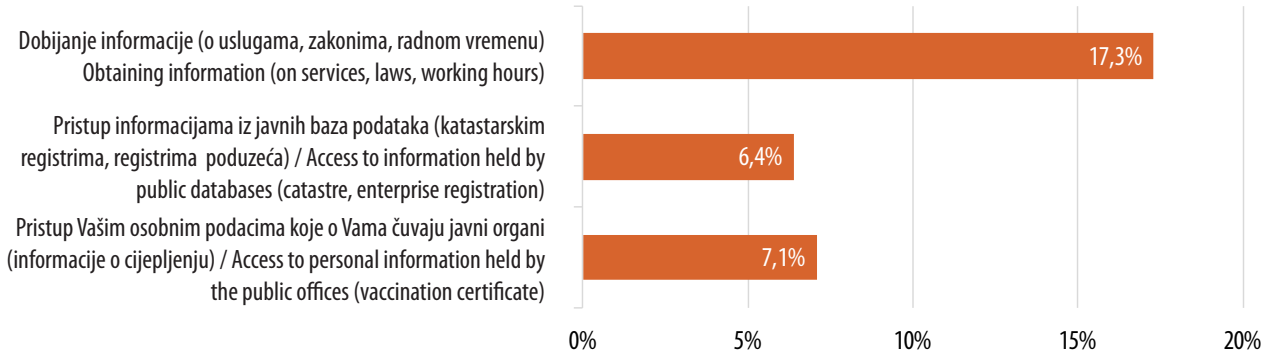
Istraživanje pokazuje da 22,3% ispitanika koji su koristili internet u privatne svrhe, u posljednjih 12 mjeseci, koristili su elektroničke servise javne uprave (e-government).
Istraživanje je pokazalo i da je 17,3% internet populacije koristilo internet za dobijanje informacija sa web stranica javnih institucija, a 7,1% internet populacije je koristilo internet za pristup osobnim informacijama (npr. podaci o cijepljenju).
Internet populacija starosne dobi od 16 do 24 godine je najviše koristila usluge javne uprave, 41,2%.

E-government

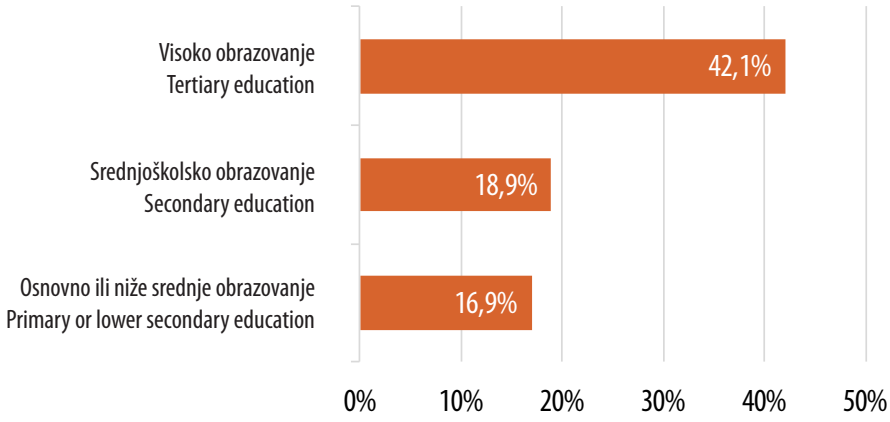
The survey shows that 22.3% of respondents who use the Internet for private purposes in the last 12 months, used electronic government services (e-government).

The survey also showed that 17.3% of the internet population used the Internet to obtain information from the public institution's website, and 7.1% of the internet population used the internet to access their personal information (for example, vaccination certificate).
The Internet population aged 16-24 was mostly used by public administration services, 41.2%.

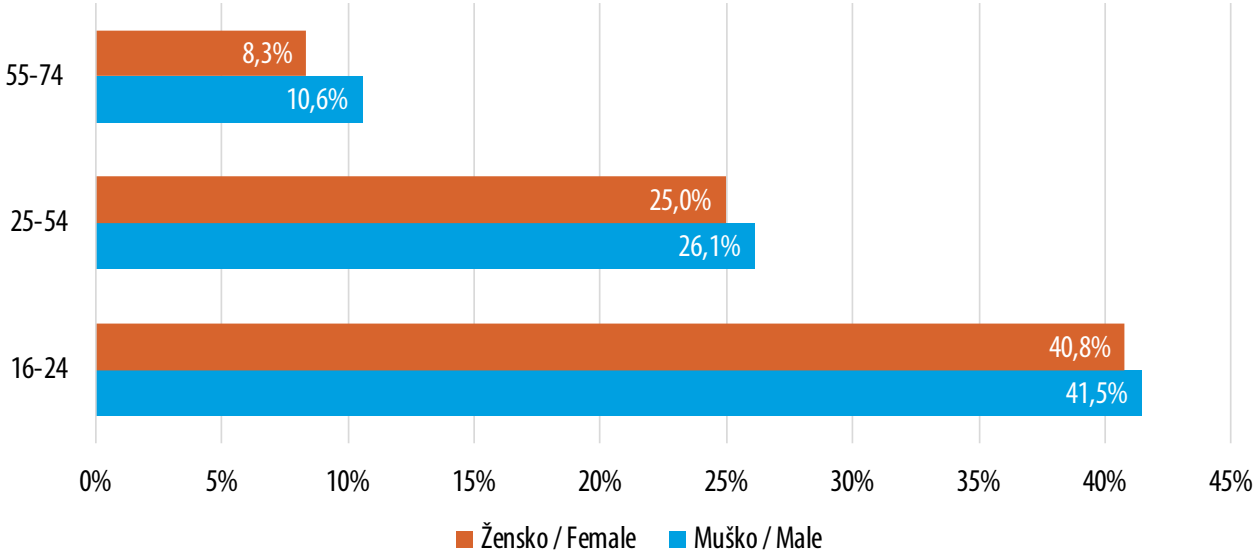
Grafikon 20. Za koju ste od sljedećih usluga javne uprave koristili internet?
Graph 20 For which of the following public administration services did you use the Internet?



Grafikon 21. Uporaba interneta radi korištenja usluga javne uprave u posljednjih 12 mjeseci, prema razini obrazovanja
Graph 21 Use of the Internet in order to use services or services of public administration in the last 12 months, by education level



Grafikon 22. Uporaba interneta radi korištenja usluga javne uprave u posljednjih 12 mjeseci, prema spolu i starosti/ *Graph 22 Use of the Internet in order to use services or services of public administration in the last 12 months, by sex and age*



Elektronička trgovina[6]

Kada je riječ o vremenskom okviru u kojem su korisnici interneta kupovali/poručivali robu ili usluge putem interneta, 32,5% internet korisnika obavilo je kupovinu/narudžbu u posljednja tri mjeseca, 10,6% prije više od tri mjeseca (manje od 1 godine), a 5,8% prije više od godinu dana.
Korisnici interneta koji nikad nisu kupovali ili poručivali robu ili usluge putem interneta je 51,1%.

Broj osoba koje su kupile / naručile robu ili usluge putem interneta u posljednjih 12 mjeseci bilo je 43,1%, što je porast od 10,5% u odnosu na 2021. godinu.

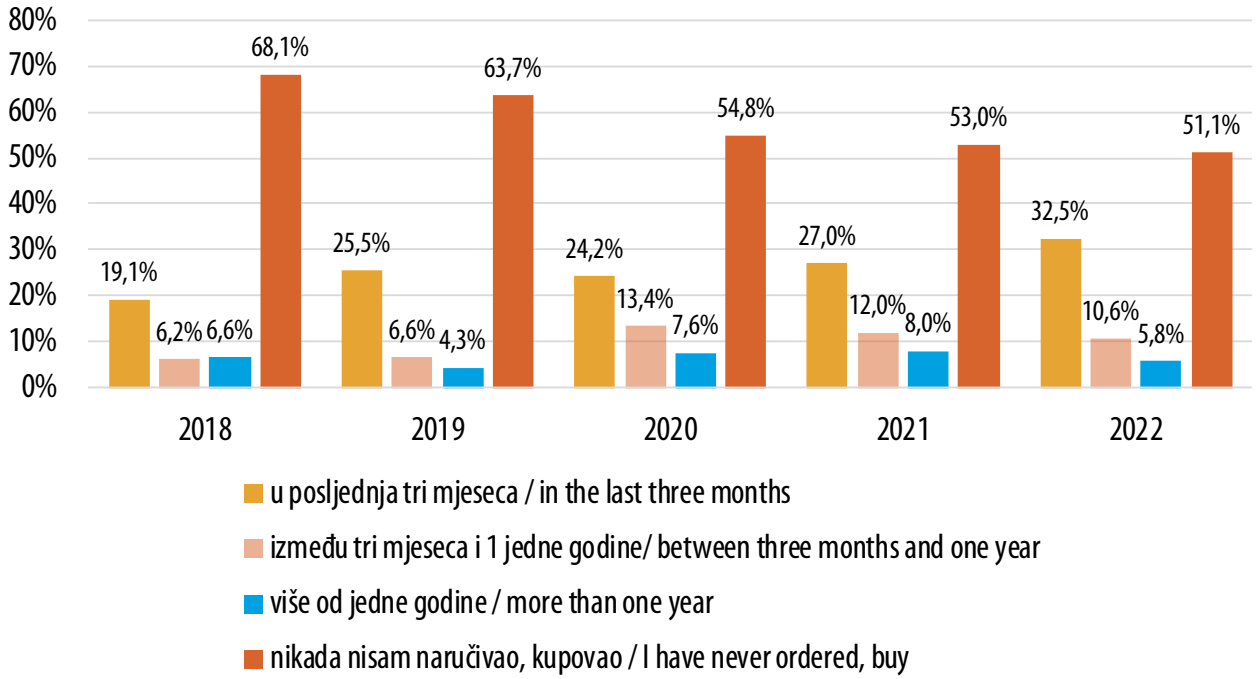
e-commerce[6]

As for the time frame in which the internet users bought / ordered goods or services over the Internet, 32.5% of users conducted a purchase/order in the last three months, 10.6% between 3 months and a year ago, and 5.8% more than a year ago.

The Internet users who never bought or ordered goods or services over the Internet is 51.1%

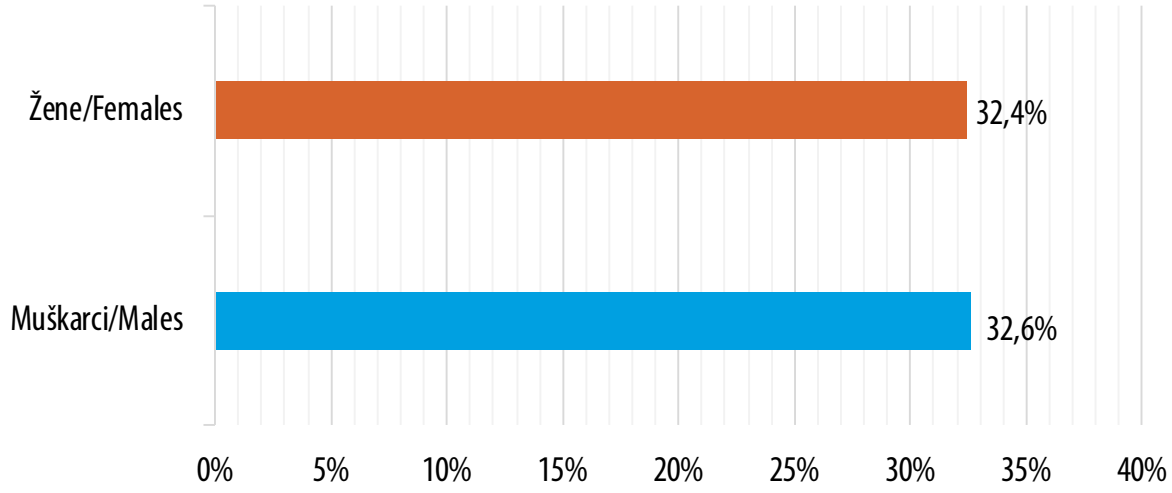
The number of persons who bought / ordered goods or services via the Internet in the last 12 months was 43.1%, which is an increase of 10.5% compared to 2021.

Grafikon 23.Posljedni put (u privatne svrhe) kupili/naručili robu ili usluge putem interneta u postotcima
Graph 23 Last time (for private purposes) they bought / ordered goods or services via the Internet in percent

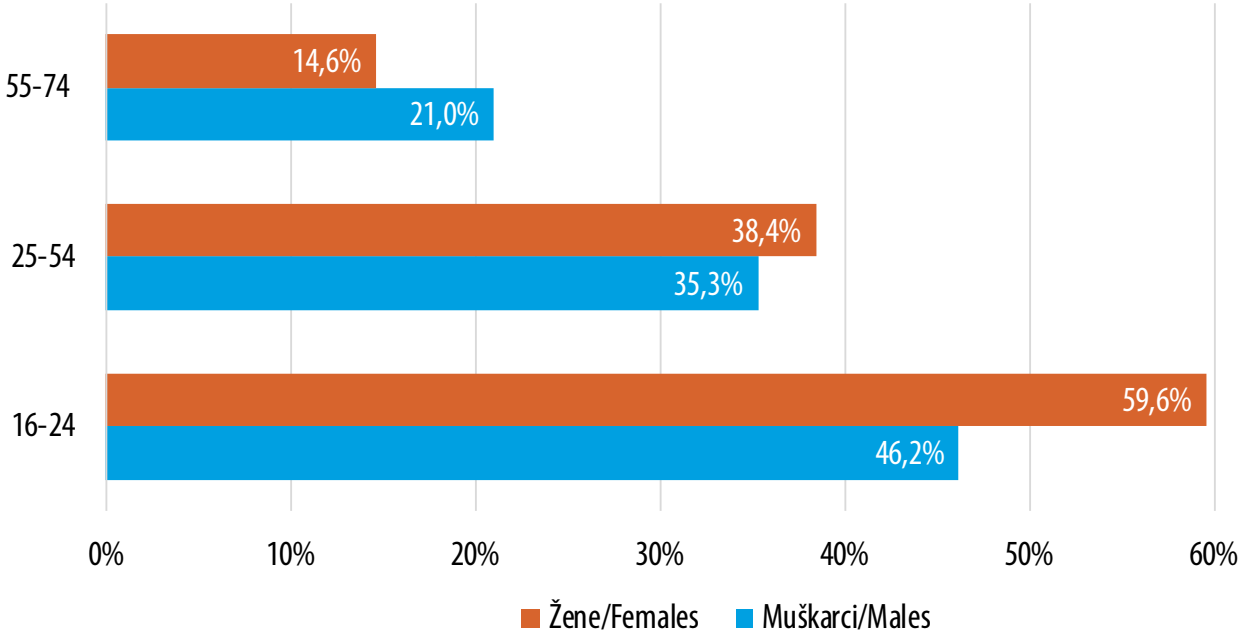


[6] Podaci se odnose na osobe koje su koristile internet posljednjih 12 mjeseci.
[6] *The data refer to persons who have used the Internet in the last 12 months.*

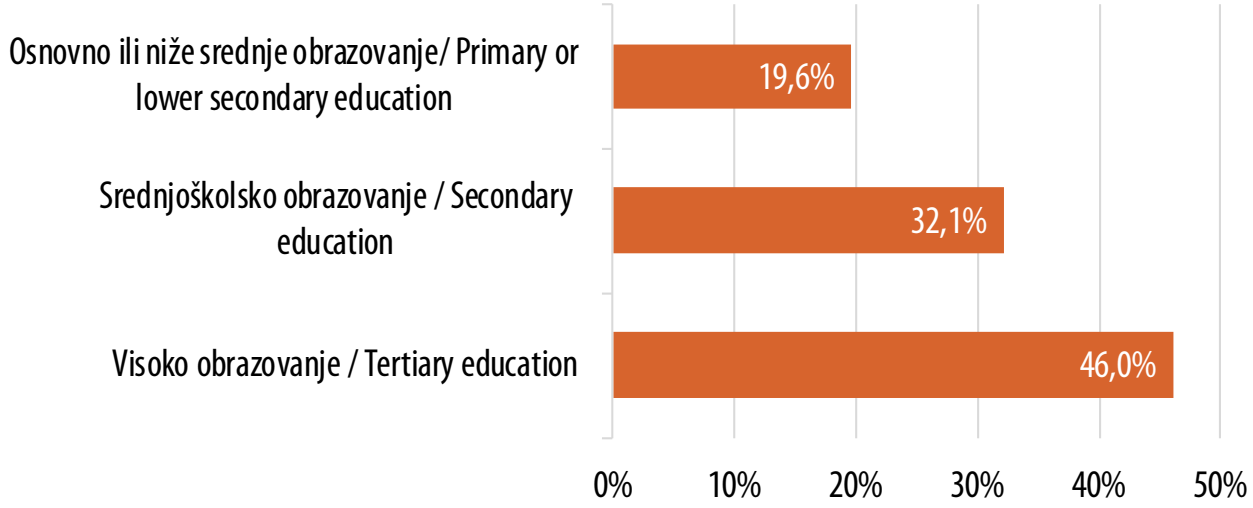
Grafikon 24. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema spolu, 2022. /*Graph 24 Bought/ordered goods or services online in the last three months (for private purposes), by gender, 2022*



Grafikon 25. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema spolu i starosti, 2022. /*Graph 25 Bought/ordered goods or services online in the last three months (for private purposes), by sex and age, 2022*



Grafikon 26. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema razina obrazovanja, 2022. */Graph 26 Bought/ordered goods or services online in the last three months (for private purposes), by education level, 2022*



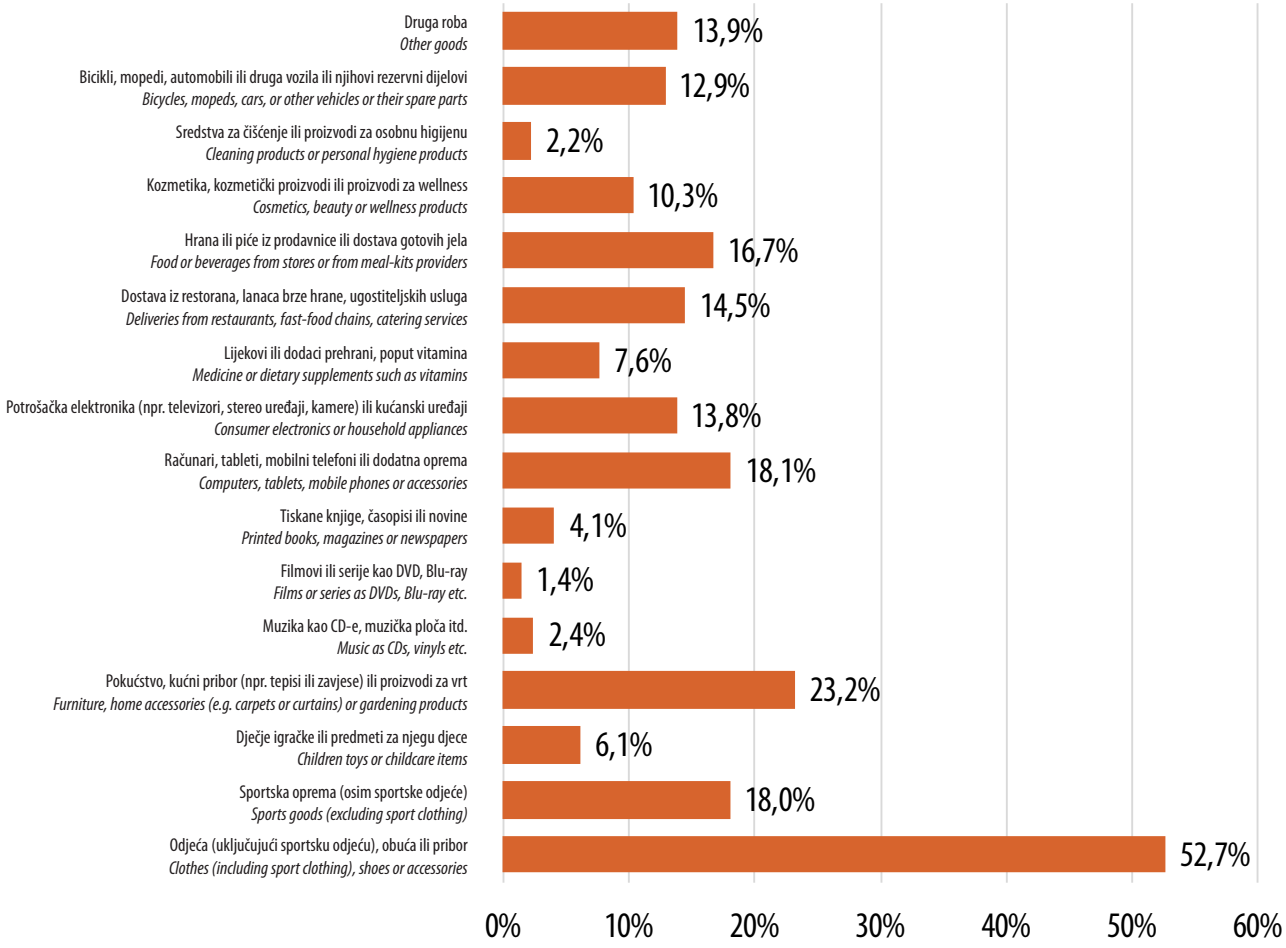
Pojedinci su najčešće naručivali proizvode ili usluge putem interneta u posljednja 3 mjeseca:

- Odjeća (uključujući sportsku odjeću), obuća ili pribor (npr. torbe, nakit) 52,7%;
- Pokućstvo, kućni pribor 23,2%;
- Računari, tableti, mobilni telefoni ili dodatna oprema 18,1%;
- Sportska oprema (osim sportske odjeće) 18%;
- Hrana ili piće iz prodavnice ili dostava gotovih jela 16,7%;
- Dostava iz restorana, lanaca brze hrane, ugostiteljskih usluga 14,5%;
- Potrošačka elektronika (npr. televizori, stereo uređaji, kamere) ili kućanski uređaji (npr. perilica za rublje) 13,8%;

Most often individuals have ordered products or services online over the last 3 months:

- *Clothes (including sport clothing), shoes or accessories (e.g. bags, jewellery) 52.7%;*
- *Furniture, household goods 23.2%;*
- *Computers, tablets, mobile phones or additional equipment 18.1%;*
- *Sports equipment (except sports clothes) 18%;*
- *Deliveries from restaurants, fast-food chains, catering services 16.7%;*
- *Food or beverages from stores or from meal-kits provider 14.5%;*
- *Consumer electronics (e.g. TV-sets, stereos, cameras) or household appliances (e.g. washing machines) 13.8%;*

Grafikon 27. Koju ste vrstu robe ili usluga kupili ili naručili putem interneta u posljednja 3 mjeseca, u privatne svrhe?[7]
Graph 27. What types of goods or services did you buy or order over the Internet for private use in the last 3 months?[7]



[7] Podaci se odnose na pojedince koji su putem interneta kupovali ili naručivali u posljednja 3 mjeseca.
[7] *Data refer to individuals who have purchased or ordered online in the last 3 months.*

Analiza ispitanika prema spolu pokazalo da je 45,9% osoba muškog spola, a 59,6% ženskog spola kupovalo Odjeća (uključujući sportsku odjeću), obuća ili pribor (npr. torbe, nakit).

The analysis of respondents by gender showed that 45.9% of males and 59.6% of females bought Clothing (including sportswear), footwear or accessories (eg bags, jewelry).

Hrana ili piće iz prodavnice ili dostava gotovih jela preko interneta naručivalo je 15,8% osoba muškog spola, a 17,7% ženskog spola.

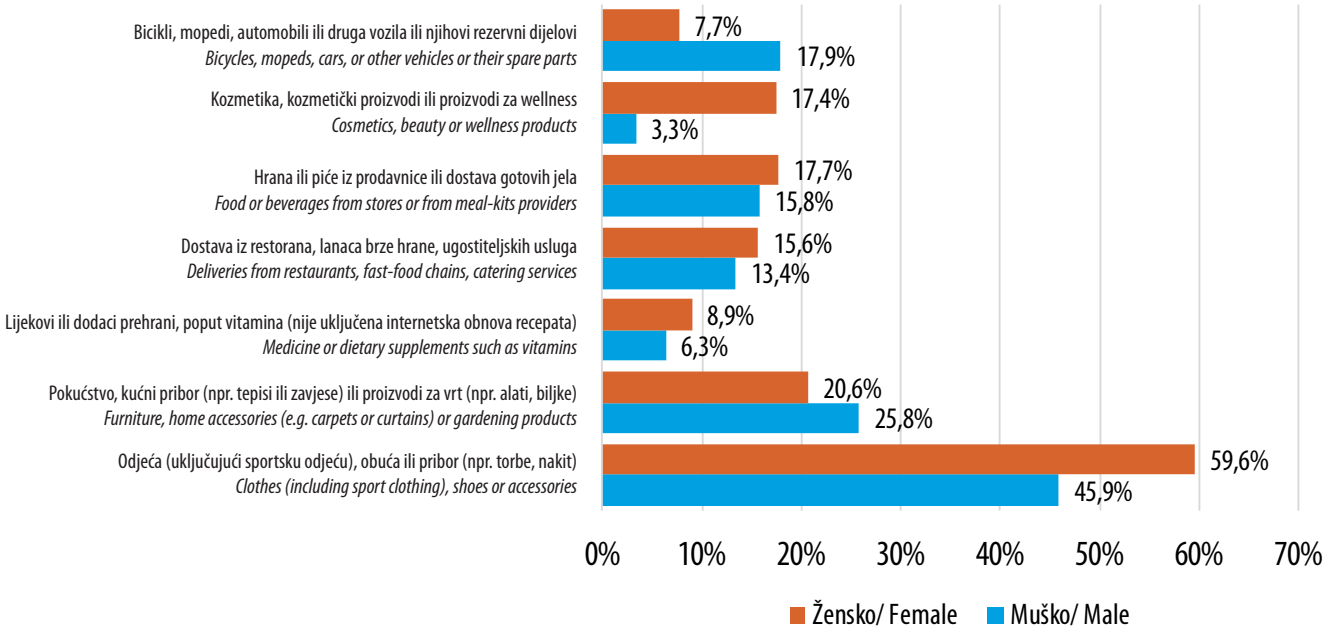
Food or beverages from stores or from meal-kits providers over the Internet was ordered by 15.8% of males and 17.7% of females.

Bicikli, mopedi, automobili ili druga vozila ili njihovi rezervni dijelovi preko interneta naručivalo je 17,9% osoba muškog spola, a 7,7% ženskog spola.

Bicycles, mopeds, cars or other vehicles or their spare parts were ordered online by 17.9% of males and 7.7% of females.

Grafikon 28. Najčešće vrstu robe ili usluga kupili ili naručili putem interneta u posljednja 3 mjeseca, u privatne svrhe, po spolu[8]

Graph 28 Most often the type of goods or services did you buy or order over the Internet for private use in the last 3 months, by gender[8]

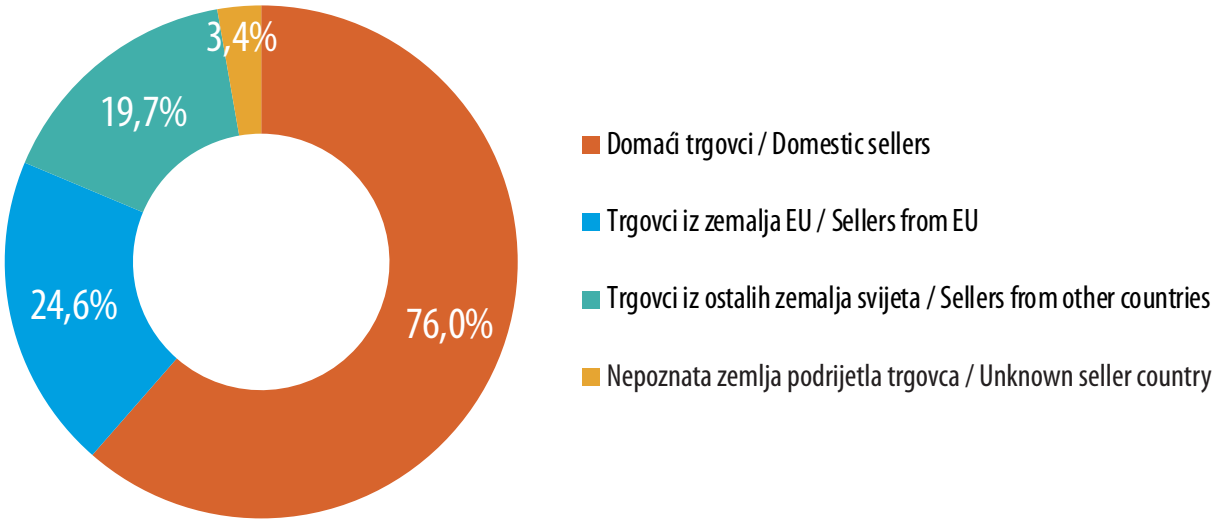


[8] Podaci se odnose na pojedince koji su putem interneta kupovali ili naručivali u posljednja 3 mjeseca.
[8] *Data refer to individuals who have purchased or ordered online in the last 3 months.*

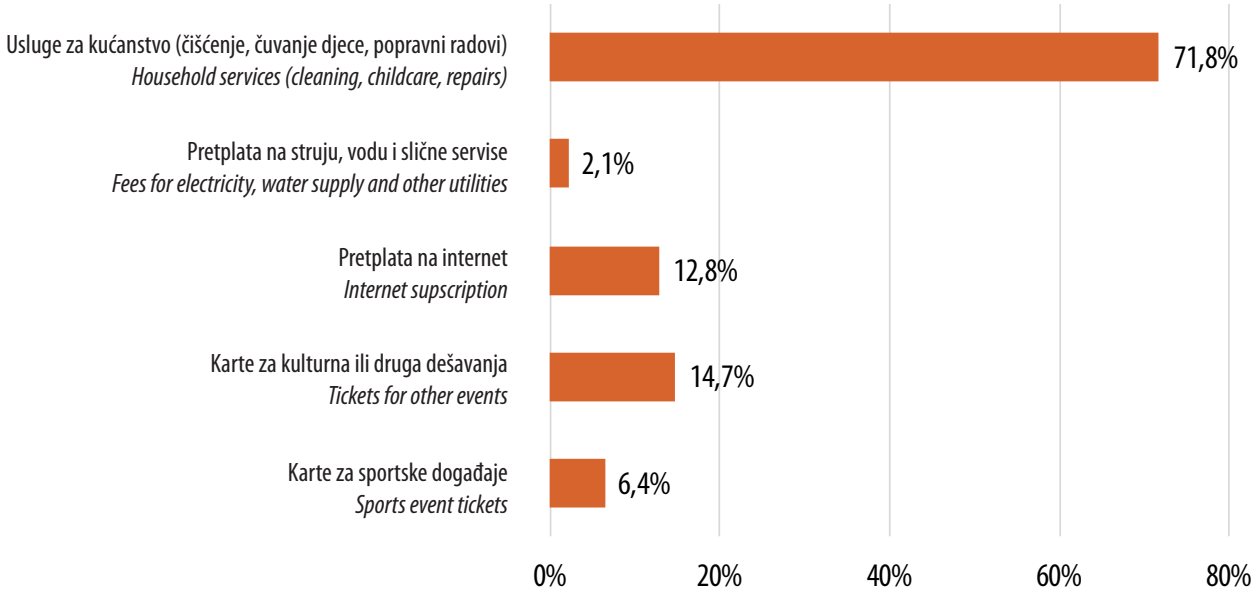
Istraživanje pokazuje da je 76% ispitanika koji su naručivali robu preko interneta u posljednja 3 mjeseci, robu naručivali od domaćih trgovaca.

The survey shows that 76% of respondents who ordered goods online in the last 3 months, purchased the goods from domestic sellers.

Grafikon 29. Od koga ste kupili pomenute proizvode preko web stranice ili aplikacije, u posljednja 3 mjeseca?[9]
Graph 29 From whom did you buy aforementioned goods via a website or app in the last 3 months?[9]



Grafikon 30. Jeste li kupili nešto od navedenog preko web stranice ili aplikacije, u posljednja 3 mjeseca?
Graph 30 Did you buy something from the listed items, via a website or app in the last 3 months?



Istraživanje pokazuje da 51,1% ispitanika koji su koristili internet u privatne svrhe, u posljednjih 12 mjeseci, nisu nikad kupili/naručili proizvode ili usluge putem interneta.

The survey shows that 51.1% of respondents who use the Internet for private purposes in the last 12 months, never bought or ordered over the internet.

[8] Podaci se odnose na pojedince koji nisu putem interneta kupovali ili naručivali u posljednja 3 mjeseca.
[8] *The data refer to individuals who have not bought or ordered online in the last 3 months.*

Internet pametnih uređaja

Internet of Things (IoT) odnosi se na međusobno povezane uređaje ili sustave, koji se često nazivaju „pametnim" uređajima ili sustavima. Oni prikupljaju i razmijenjuju podatke i mogu se nadgledati ili daljinski kontrolirati putem interneta.

Primjeri su: „pametni" metri, termostati, svjetiljke (svjetla), alarmni sustavi, detektori dima, vratne brave, kamere; senzori, RFID oznake povezane sa baznom stanicom koja im omogućava upravljanje putem interneta.
Internet stvari može uključivati različite vrste mrežnih veza putem WAN-a, WiFi-a, LAN-a, Bluetooth-a, ZigBee-a, virtualnih privatnih mreža (VPN) itd.

Istraživanje je pokazalo da više od 70% ispitanika ne koristi međusobno povezane uređaje ili sustave koji se mogu nadgledati ili daljinski kontrolirati putem interneta.

Internet of Things

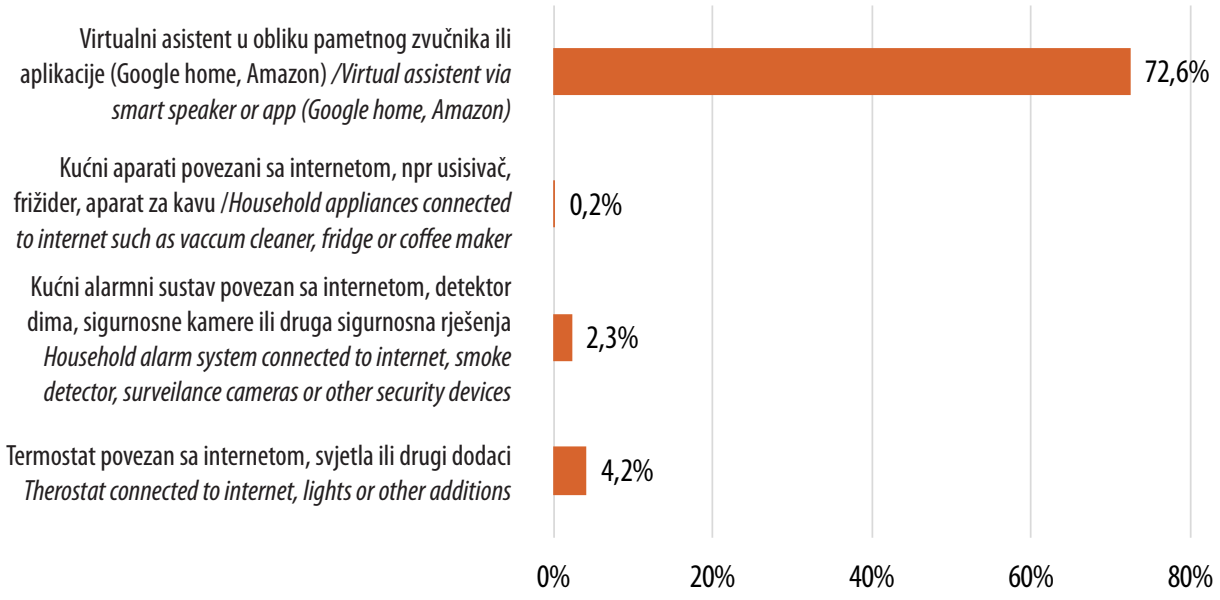
The Internet of Things (IoT) refers to interconnected devices or systems, often called "smart" devices or systems. They collect and exchange data and can be monitored or remotely controlled via the internet.

Examples are: "smart" meters, thermostats, lamps (lights), alarm systems, smoke detectors, door locks, cameras; sensors, RFID tags connected to a base station that allows them to be managed via the internet.

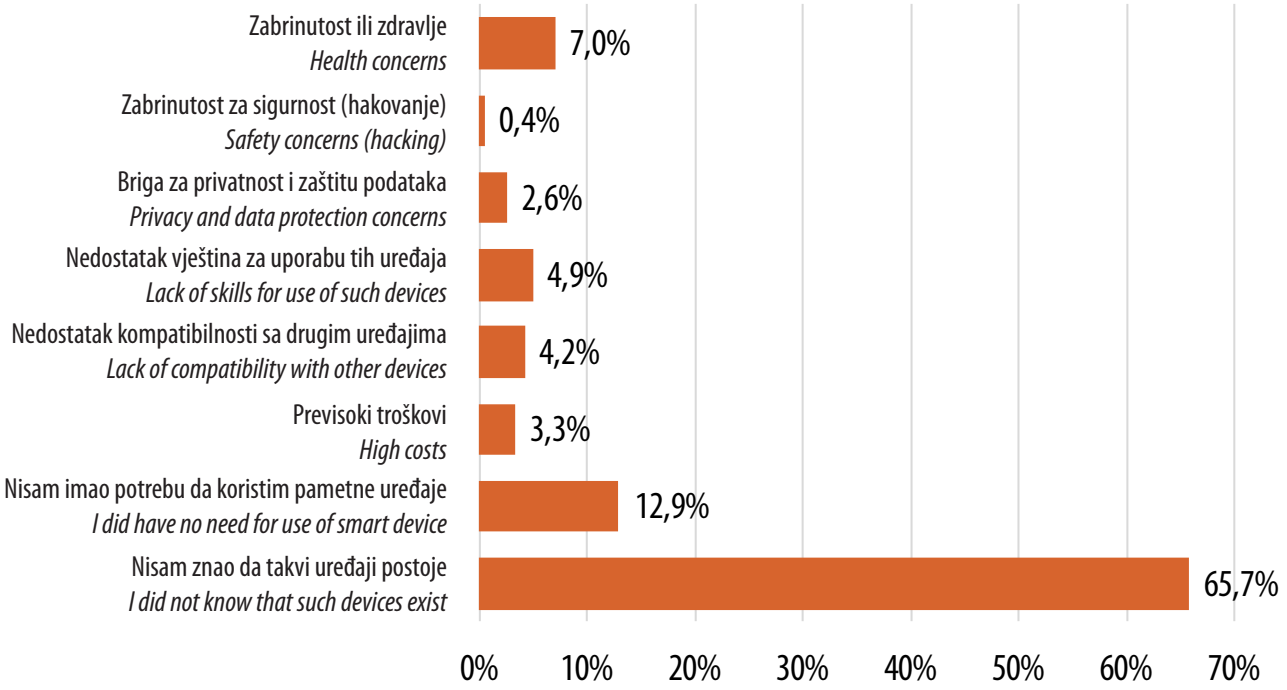
Internet of Things may include various types of network connections via WAN, WiFi, LAN, Bluetooth, ZigBee, Virtual Private Networks (VPN) etc.

The survey showed that over 70% of respondents do no use interconnected devices or systems that can be monitored or remotely controlled via the Internet.

Grafikon 31. Jeste li koristili neki od sljedećih pametnih uređaja za privatne svrhe?
Graph 31 Did you use any of the smart devices for private purposes?



Grafikon 32. Koji su razlozi za nekorištenje navedenih pametnih uređaja?
Graph 32 What are the reasons for not using any of the above smart devices?



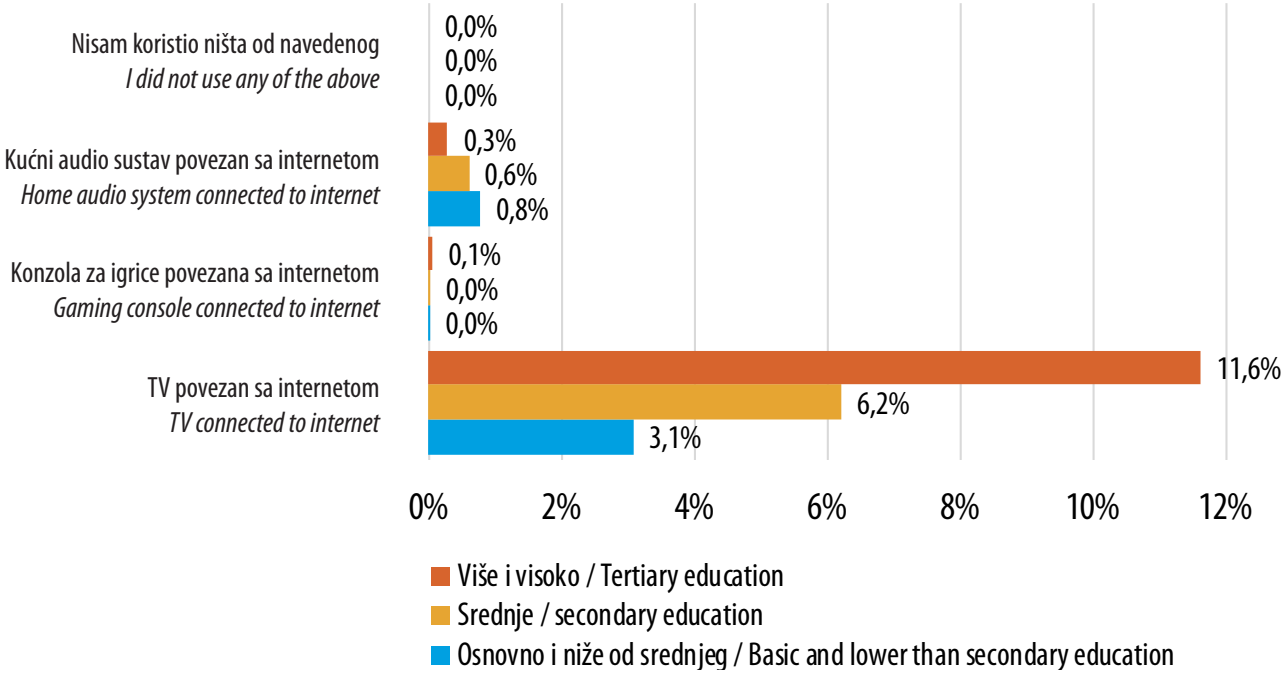
40,6% ispitanika je koristilo TV povezan sa internetom u svom domu tijekom 2022. godine.
6,6% ispitanika je koristilo konzole za igrice povezane sa internetom.
Među njima je najviše osoba starosti 16-24 godine (13,4%).

40.6% of respondents used TV connected to internet in their homes during 2022.
6.6% of respondents used gaming consoles connected to internet.
Most of them belong to are 16-24 years old (13.4%).

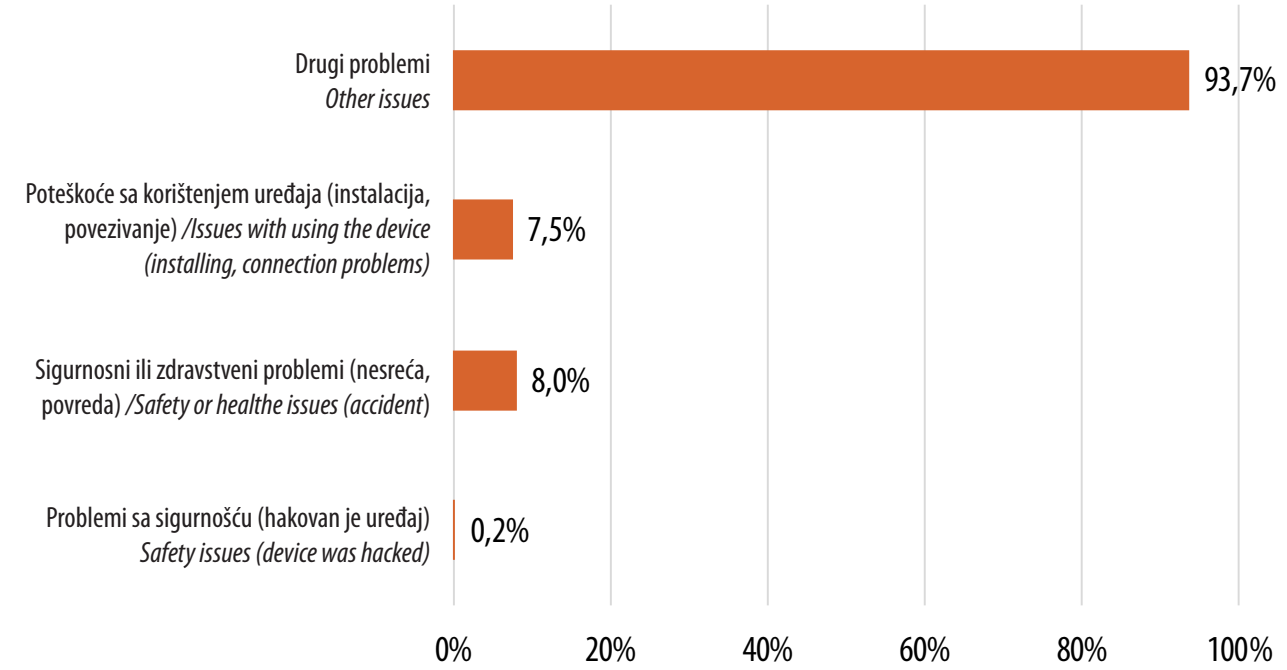
Najviše uređaja povezanih sa internetom su koristili ispitanici sa visokim obrazovanjem.

Respondents with high level education used devices connected to internet the most.

Grafikon 33. Jeste li koristili internet na bilo kojem od sljedećih uređaja u vašem domu u privatne svrhe, po obrazovnoj razini ispitanika? */Graph 33 Did you use internet on any of the devices in your home for private purposes, by repondent's level of education?*



Grafikon 34. Jeste li naišli na neki od sljedećih problema sa pomenutim uređajima?
Graph 34 Did you have any of the following problems with the aforementioned devices?



Zeleni IKT

Prikupljanje indikatora o zelenim IKT je neophodno za politike vezane za Europski zeleni dogovor.

Za prikupljanje podataka za 2022. predložen je ograničen broj indikatora, koji uglavnom imaju za cilj istraživanje: Informacije o navikama recikliranja pojedinaca/kućanstava u vezi sa IT opremom koja se više ne koristi; - Informacije o značaju aspekata održivosti za odluke o kupovini IT opreme.

Većina ispitanika je odgovorila da su zadržali svoj uređaj (mobilni telefon, laptop ili tablet, desktop računar) unutar kućanstva.

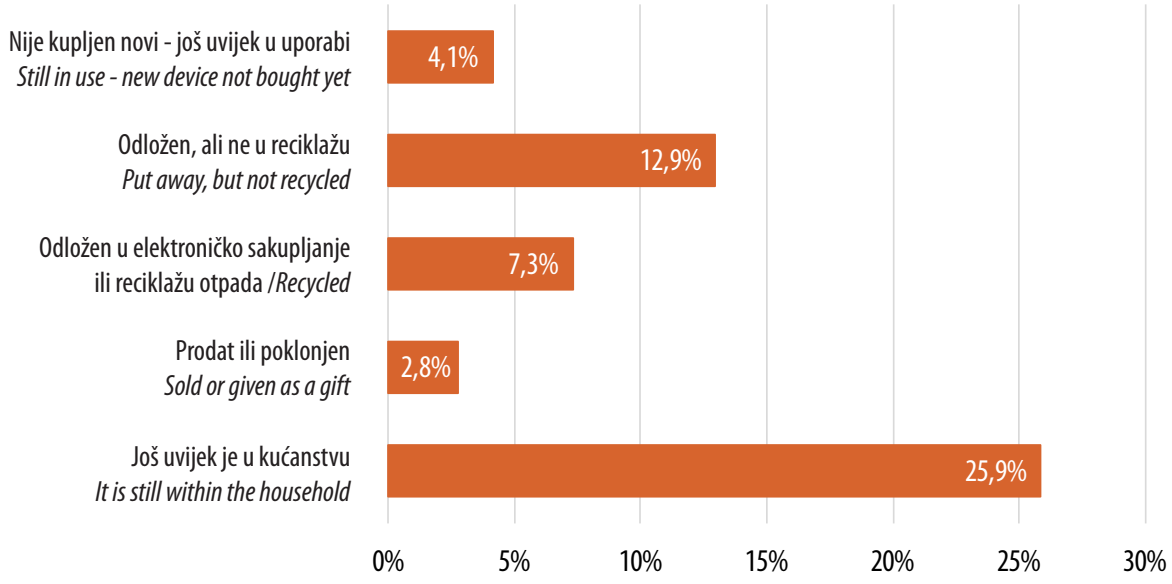
Green ICT

The collection of indicators on Green ICT is necessary for the policies related to the European Green Deal.

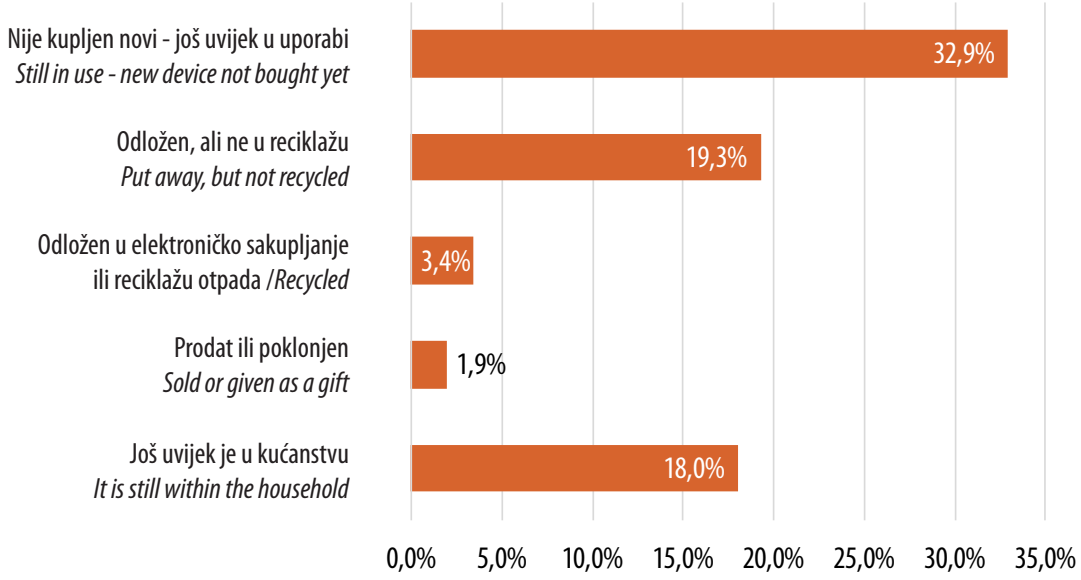
For the 2022 data collection, a limited number of indicators has been proposed, aiming at investigating mainly: Information on recycling habits of individuals/ households regarding IT equipment not used anymore; - Information on the importance of sustainability aspects for purchasing decisions of IT equipment.

Most respondents responded that their kept their devices (mobile phone, laptop or table, desktop computer) within their household.

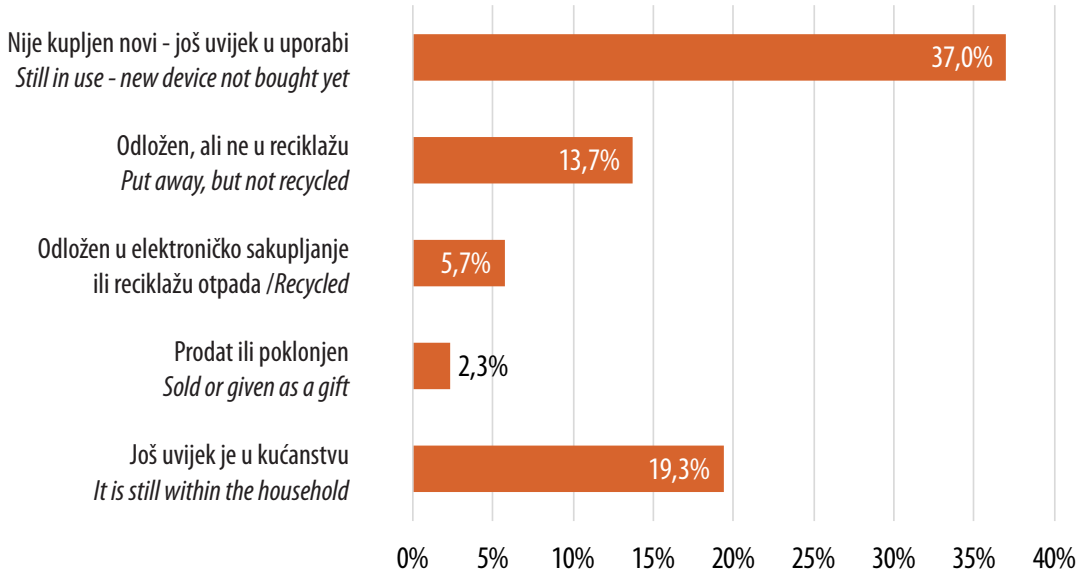
Grafikon 35. Šta ste uradili sa mobilnim telefonom kada ste ga zamijenili ili više ne koristite?
Graph 35 What did you do with your mobile phone or smartphone when you replaced it or stopped using it?



Grafikon 36. Šta ste uradili sa laptopom ili tabletom kada ste ga zamijenili ili više ne koristite?
Graph 36 What did you do with your laptop or tablet when you replaced it or stopped using it?



Grafikon 37. Šta ste uradili sa desktop računarom kada ste ga zamijenili ili više ne koristite?
Graph 37 What did you do with your desktop computer when you replaced it or stopped using it?



PODUZEĆA
ENTERPRISES

Uzorak

Istraživanje o uporabi informacijsko-komunikacijskih tehnologija u poduzećima provedeno je na reprezentativnom uzorku od 2 679 poduzeća na teritoriju Bosne i Hercegovine. Stopa odgovora je 92,3% (2 472 poduzeća).

Sample

A survey on the use of information and communication technologies in enterprises was conducted on a representative sample of 2 679 enterprises in the territory of Bosnia and Herzegovina. The response rate is 92.3% (2 472 enterprises).

Neto uzorak	10 do 49 zaposlenih	50 do 249 zaposlenih	250 i više zaposlenih	Ukupno
Net sample	*10 to 49 employees*	*50 to 249 employees*	*250 and more employees*	*Total*
Proizvodnja *Manufacture*	448	390	117	**955**
Opskrba električnom energijom, plinom, parom i vodom; gospodarenje otpadnim vodama / *Electricity, gas, steam and electricity supply water; waste management*	66	58	22	**146**
Građevinarstvo *Construction*	122	103	8	**233**
Trgovina na veliko i malo *Wholesale and retail trade*	388	191	53	**632**
Promet i skladištenje *Traffic and storage*	93	40	12	**145**
Usluge smještaja i ishrane *Accommodation services and food*	80	34	0	**114**
Informiranje i komunikacije *Information and communication*	107	45	10	**162**
Poslovanje nekretninama *Real estate*	30	8	0	**38**
Stručne, znanstvene i tehničke djelatnosti / *Professional, scientific and technical activities*	106	36	3	**145**
Administrativne i pomoćne uslužne djelatnosti / *Administrative and auxiliary service activities*	60	34	9	**103**
Popravak i održavanje računara i komunikacijske opreme / *Repair and maintenance of computers and communication equipment*	5	1	0	**6**
Ukupno ***Total***	**1.505**	**940**	**234**	**2.679**
Od čega IKT sektor/*ICT sector* (u: 26.1-26.4+ 26.8+46.5+ 58.2+61+62+63.1+95.1)	**92**	**28**	**8**	**128**

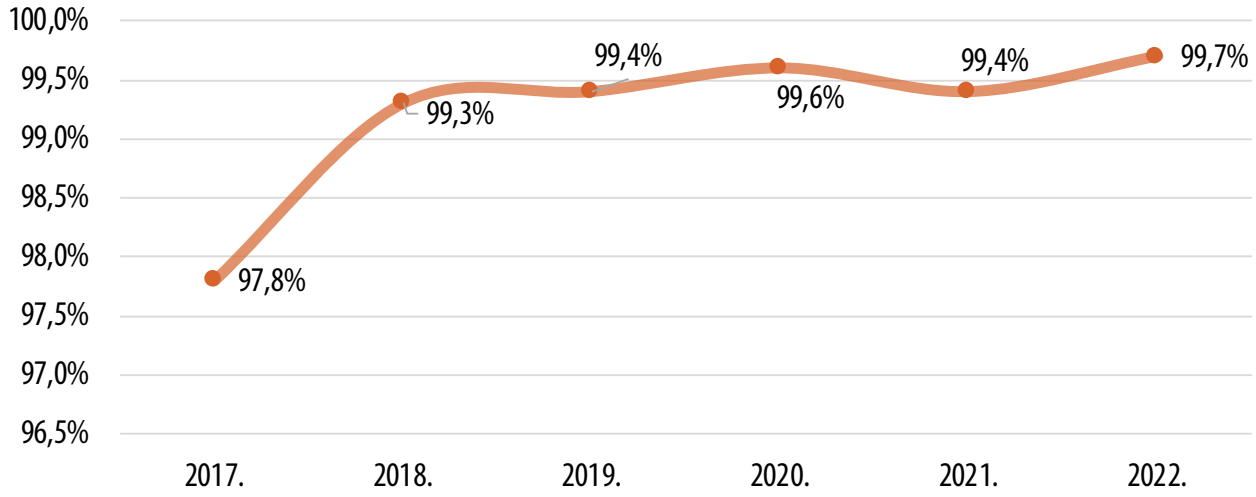
GLAVNI POKAZATELJI
Internet u poduzećima

Rezultati istraživanja o uporabi informacijsko-komunikacijskih tehnologija u poduzećima (IKT-P) u Bosni i Hercegovine, pokazali su sljedeće:
• Da 99,7% poduzeća imaju pristup internetu;
• Od ukupnog broja poduzeća koja imaju pristup internetu, fiksni širokopojasni priključak (npr. ADSL, SDSL, VDSL, kablovske mreže, optičke mreže) posjeduje 99,3% poduzeća.

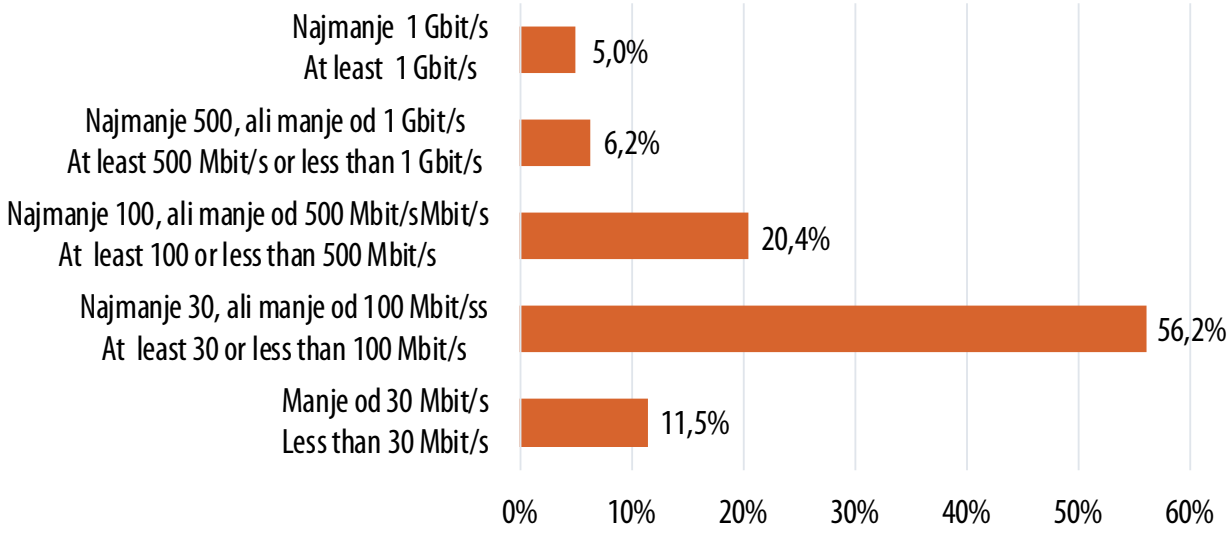
MAIN INDICATORS
Internet in enterprises

The results of the survey on the use of information and communication technologies in enterprises (ICT-ENT) in Bosnia and Herzegovina have shown the following:
• 99.7% of enterprises have access to the Internet
• Of the total number of companies that have access to the Internet, fixed broadband (eg ADSL, SDSL, VDSL, cable networks, optical networks) uses 99.3% of enterprises.

Grafikon 1. Poduzeća koja imaju pristup internetu, u postotcima
Graph 1 Enterprise have internet access, in percent



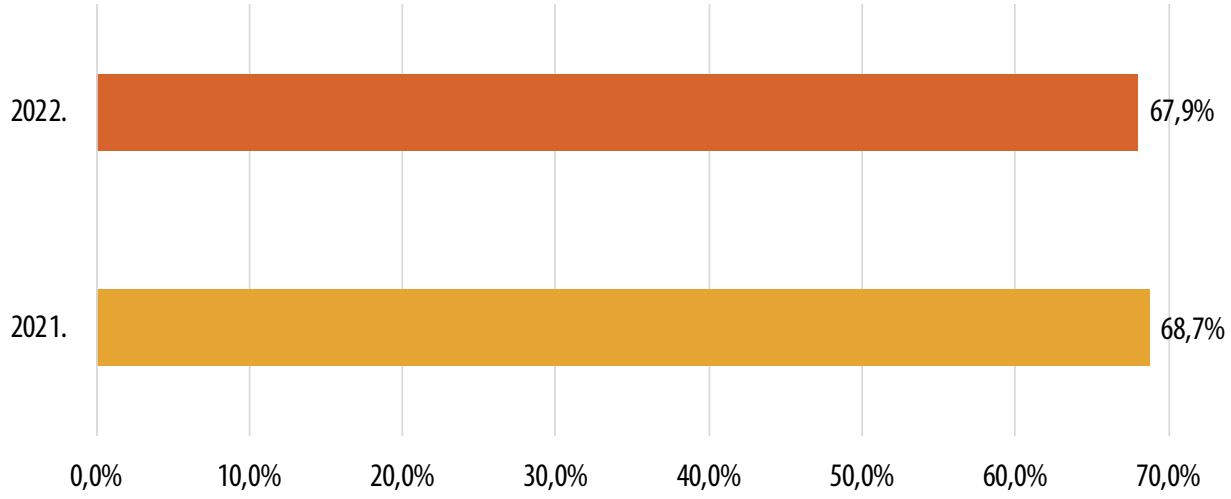
Grafikon 2. Koja je maksimalna brzina internet konekcije u vašem poduzeću (definirana ugovorom sa internet providerom)? */Graph 2 What is the maximum speed of the Internet connection in your enterprises (defined by agreement with the Internet provider)?*



Rezultati istraživanja pokazuju da 67,9% poduzeća osigurava prijenosne uređaje koji omogućavaju mobilnu internet vezu koristeći mobilne telefonske mreže.

The results of the survey show that 67.9% of enterprises provide portable devices that allow a mobile Internet connection using mobile telephone networks.

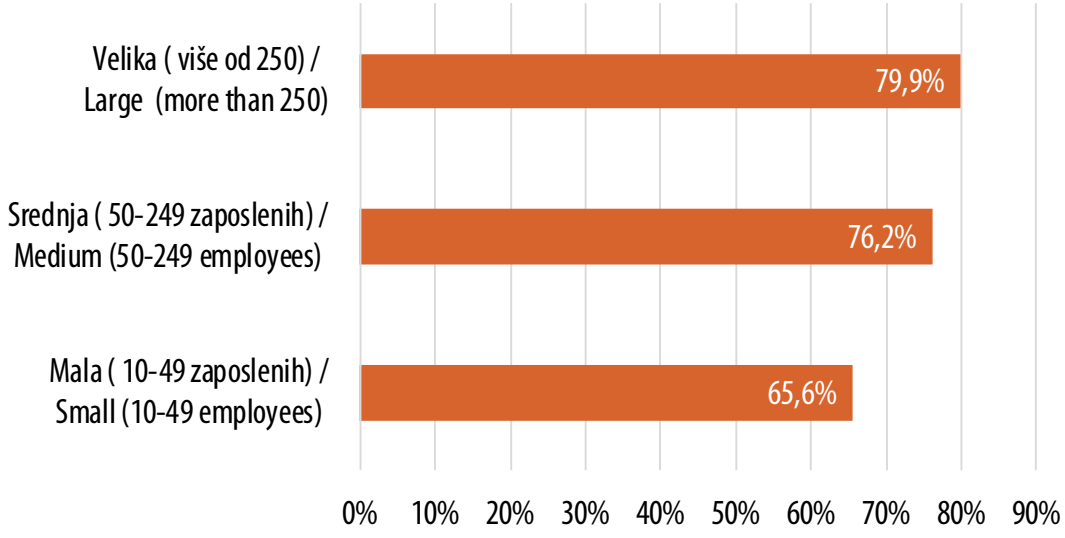
Grafikon 3. Osigurava li vaše poduzeće prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže za poslovne potrebe?
Graph 3 Does your enterprise provide portable devices that allow a mobile connection using mobile telephone networks for business purposes?



Analiza poduzeća prema veličini pokazuje nam da mobilnu internet konekciju uporabom prijenosnih uređaja najviše koriste velika poduzeća (79,9%).

Enterprise analysis by size shows us that the mobile Internet connection using the mobile devices is mostly used by large enterprises (79.9%).

Grafikon 4. Poduzeća prema veličini, osiguravaju prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže, za poslovne potrebe 2022.
Graph 4 Enterprises by size, provide portable devices that allow a mobile connection to the internet using mobile telephone networks, for business purposes 2022

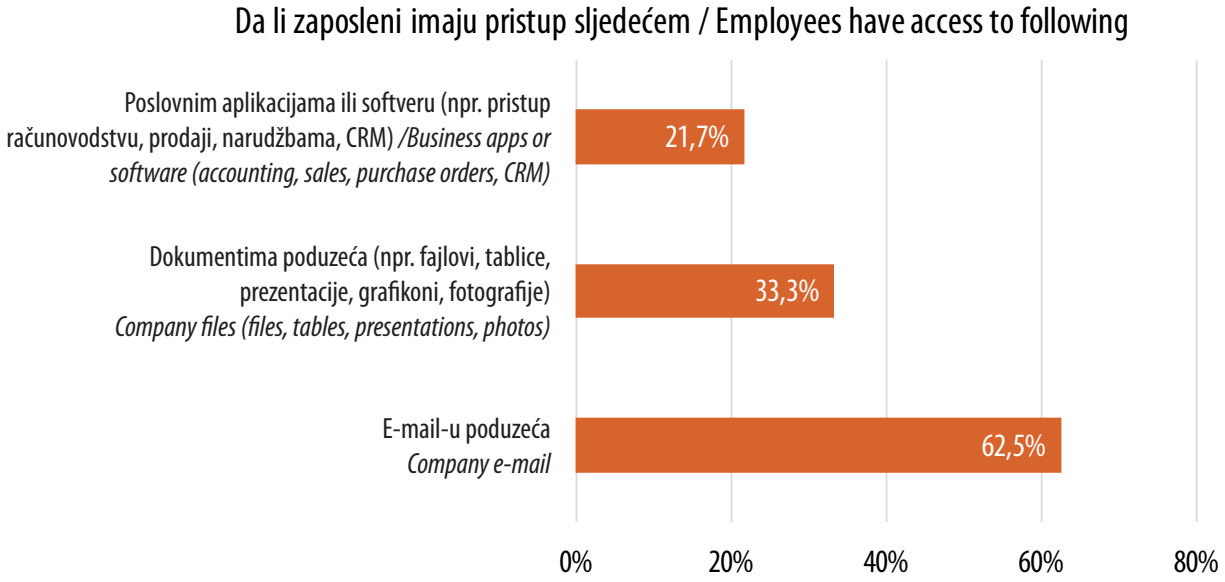


Istraživanje pokazuje da 34,2% poduzeća održava online sastanke (npr. preko Zoom, Skype, MS Teams).
18,9% poduzeća ima IKT sigurnosne smjernice za vođenje online (remote) sastanaka (npr. zahtjev lozinke).
Većina zaposlenih u poduzećima ima pristup poslovnom e-mailu.

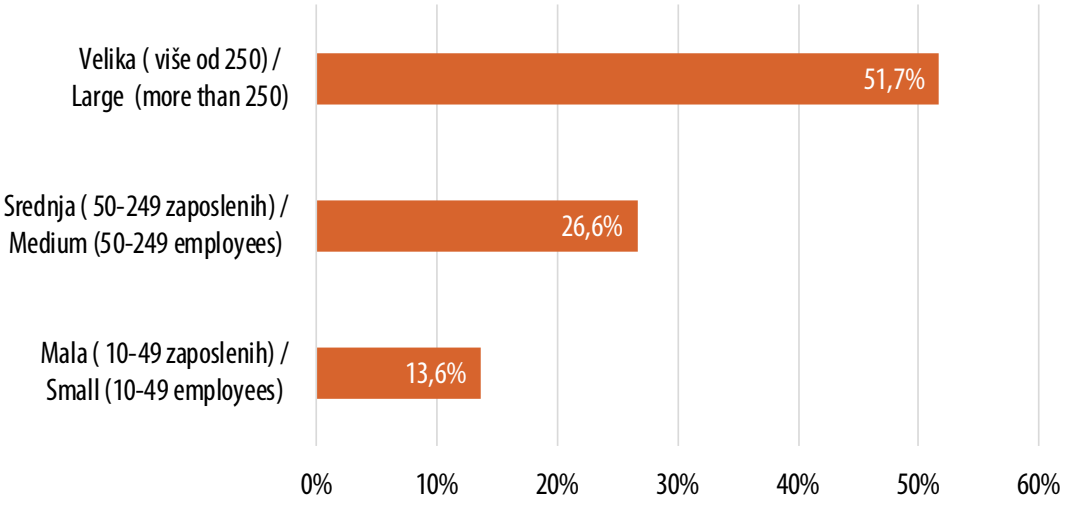
The survey shows that 34.2% of enterprises hold online meetings (for example via Zoom, Skype, MS Teams).
18.9% of enterprises have IT security guidelines for online meetings (such as password request).

Majority of employees in enterprises have access to company e-mail.

Grafikon 5. Daljinski pristup servisima poduzeća od strane zaposlenih (preko računara ili pametnog telefona)
Graph 5 Remote access to enterprise resources by employees (via computer or smart phone)



Grafikon 6. Poduzeća koja imaju IKT uputstvo za sigurnost za daljinski pristup, po veličini poduzeća
Graph 6 Employees which have IT safety manual for remote access, by enterprise size



Elektronička trgovina

Tijekom 2022. godine, 20,5% poduzeća u Bosni i Hercegovini je imalo web prodaju robe ili usluga.

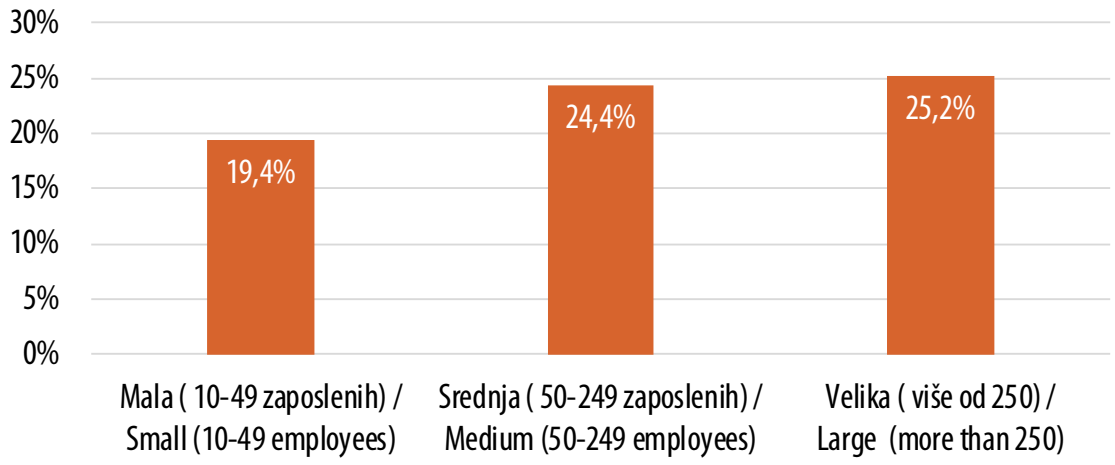
Kada pogledamo strukturu poduzeća prema veličini, dobijamo sljedeće rezultate:
• 25,2% velikih poduzeća je imalo web prodaju robe ili usluga;
• 24,4% srednjih poduzeća je imalo web prodaju robe ili usluga;
• 19,4% malih poduzeća je imalo web prodaju robe ili usluga.

E-Commerce

In 2022 year, 20.5% of enterprises in Bosnia and Herzegovina have web sales of goods or services.

When we look at the structure of enterprises by size, we get the following results:
• 25.2% of large enterprises had web sales of goods or services;
• 24.4% of medium-sized enterprises had web sales of goods or services;
• 19.4% of small enterprises had web sales of goods or services.

Grafikon 7. Postotak poduzeća koja su imala web prodaju u 2022. godini, prema veličini poduzeća
Graph 7 Percentage of enterprises that had web sales in the year 2022, by size enterprises.

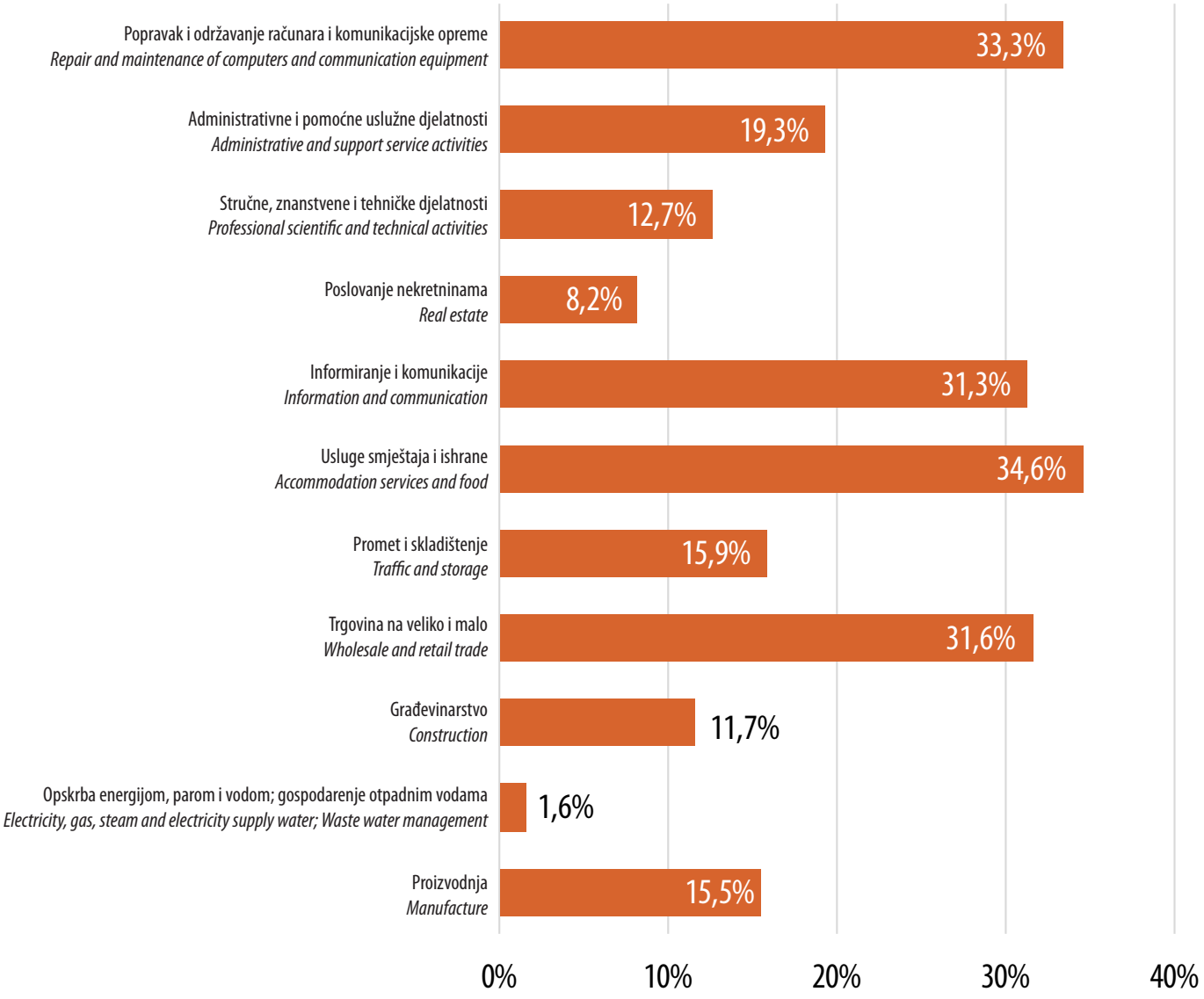


Istraživanje je pokazalo da na pitanje „Da li je vaše poduzeće tijekom 2022. godine imalo web prodaju robe ili usluga putem?“:
• vlastite web stranice poduzeća ili aplikacije, 14,1%;
• web stranice e-commerce tržišta ili “aplikacija” koju koristi više poduzeća za trgovinu proizvodima? (npr. Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, OLX.BA, E-kupi), 15,6%.

Survey showed that to the question “During 2022, did your enterprise have web sales of goods or services Via“:

• via own enterprise’s websites or apps, 14.1%;
• via e-commerce marketplace websites or apps used by several enterprises for trading goods or services? (Eg Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, OLX.BA, E-kupi.ba), 15.6%

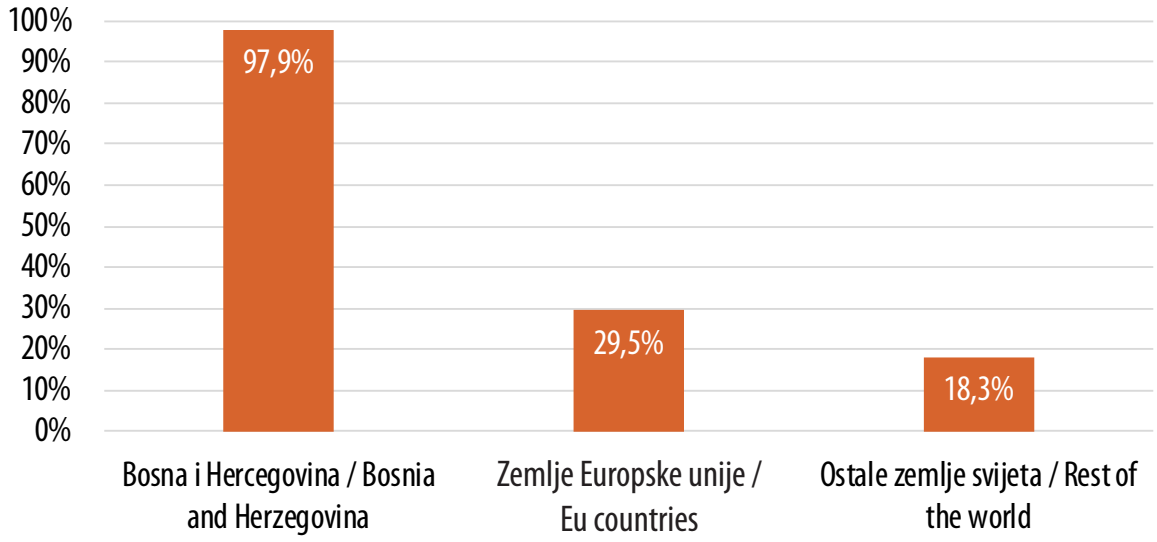
Grafikon 8. Postotak poduzeća koja su imala web prodaju, prema djelatnosti poduzeća
Graph 8 Percentage of enterprises that had web salese, by enterprise activity



Ako lociramo kupce prema geografskim lokacijama, preduzeća koja su imala web prodaju u 2022. godini najviše su ostvarili web prodaju sa kupcima u:
Bosni i Hercegovini (97,9%);
Zemlje EU (29,5%);
Ostale zemlje svijeta (18,3%).

If we locate customers by geographical locations, the companies that had web sales in 2022 achieved the most web sales with customers in:
Bosnia and Herzegovina (97.9%);
EU countries (29.5%);
Other countries (18.3%).

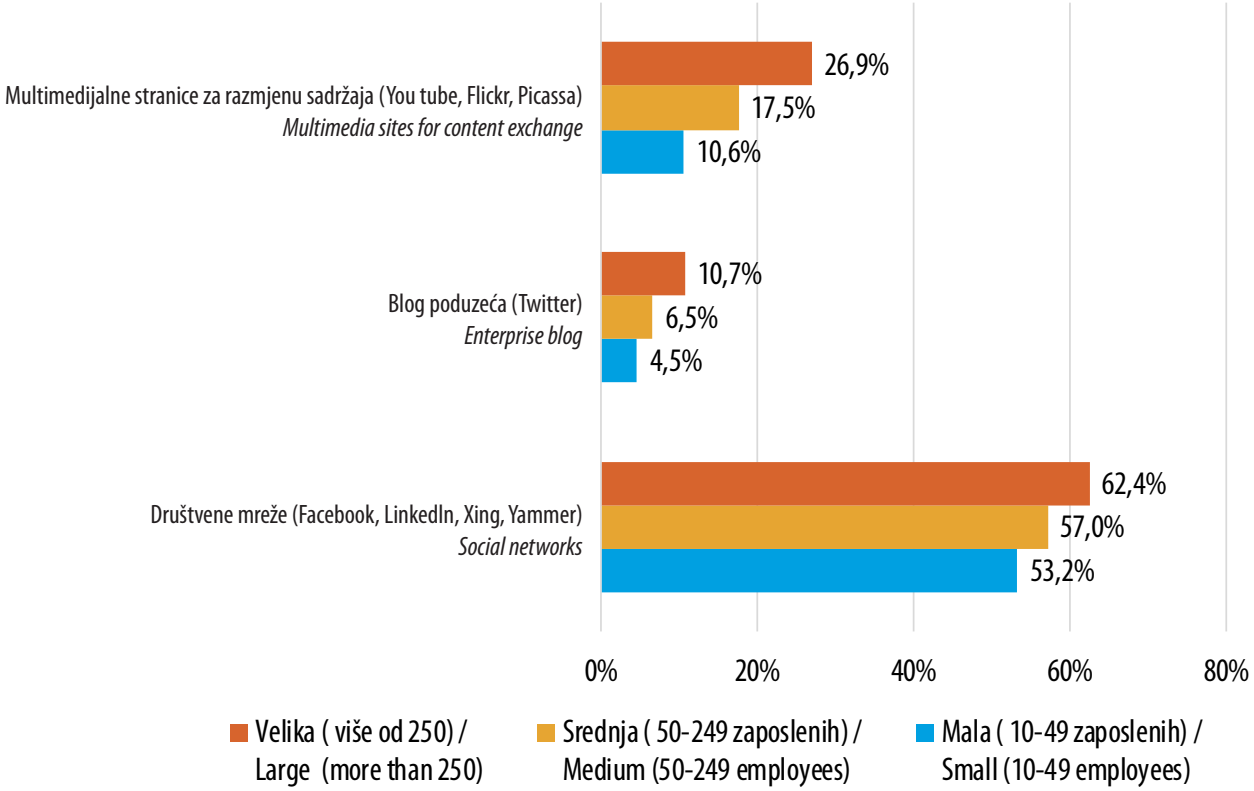
Grafikon 9. Poduzeća ostvarila web prodaju roba i usluga tijekom 2022. godine, kupcima lociranim prema geografskim područjima /*Graph 9 The enterprises realized web sales of goods and services during 2022, to customers located by geographical areas*



Preko 50% poduzeća ima društvene mreže poput Facebook, Linkedin, Xing, Yammer.

Over 50% enterprises use social networks such as Facebook, Linkedin, Xing, Yammer.

Grafikon 10. Korištenje društvenih mreža u poduzećima, po veličini poduzeća
Graph 10 The use of social media by enterprises, by enterprise size



IKT stručnjaci i vještine

IKT vještine se odnose na vještine vezane za, na primjer, zadatke kao što su: upravljanje online marketingom ili e-trgovinom; upravljanje profilom poduzeća na društvenim mrežama; programski jezici; dizajn ili upravljanje web stranicama ili aplikacijama; upravljanje bazama podataka ili analiza podataka; održavanje računarskih mreža, servera itd.; IT-sigurnost ili upravljanje privatnošću; korištenje ili dizajn određenih softverskih aplikacija; upravljanje telekomunikacijskim sustavima i mrežama itd.

Cilj ovog modula je identifikacija neusaglašenosti i nedostataka IKT stručnjaka na tržištu rada.

Samo 13,4% poduzeća je odgovorilo da zapošljava IT stručnjake.
Velika poduzeća imaju najviše zaposlenih IT stručnjaka.

ICT experts and skills

ICT skills refer to skills related for instance to tasks such as: management of online marketing or e-commerce; management of enterprise's social media profile; programming languages; design or management of websites or apps; management of databases or data analysis; maintenance of computer networks, servers, etc.; IT-security or privacy management; use or design of specific software applications; management of telecommunications systems and networks etc.

Aim of this module is to identify mismatches or shortages of ICT specialists in the labour market.

Only 13.4% enterprises employs IT experts.

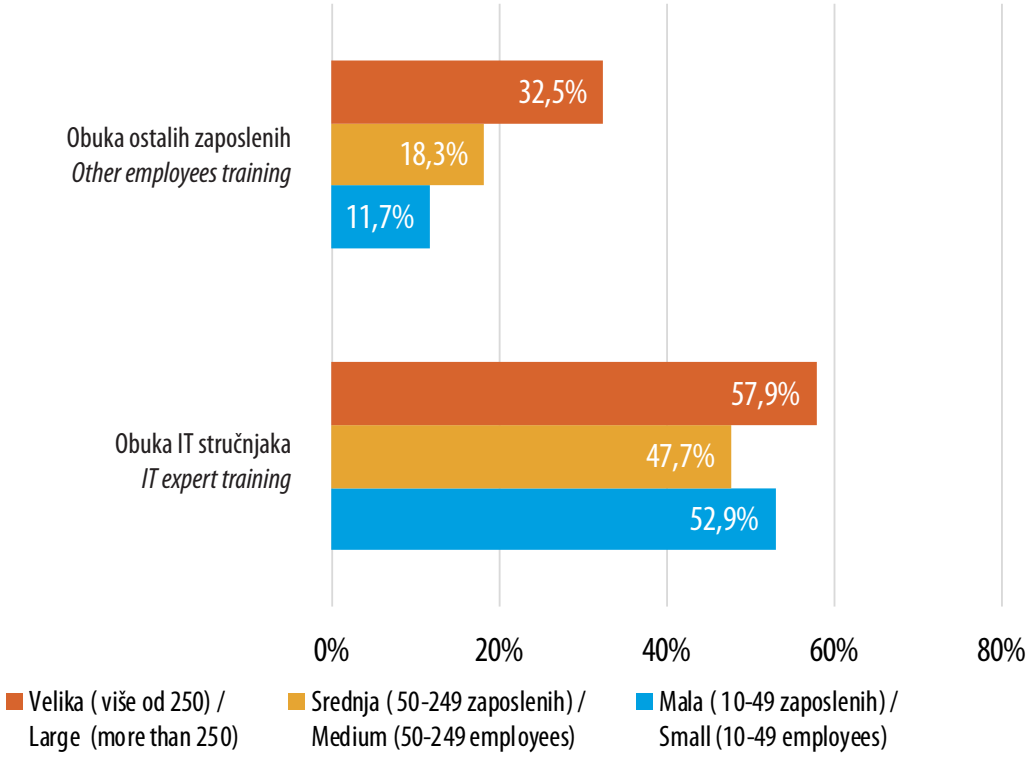
Large enterprises have the largest number of employed IT experts.

Grafikon 11. Zapošljavaju li preduzeća IT stručnjake, po veličini poduzeća?
Graph 11 Do enterprises employ IT experts, by enterprise size?

Velika poduzeća su organizirala najviše obuka za razvijanje IKT vještina, kako za IT stručnjake, tako i za ostale zaposlenike.

Large enterprises organized the most trainings for developing ICT skills, for IT experts, as well as for other employees.

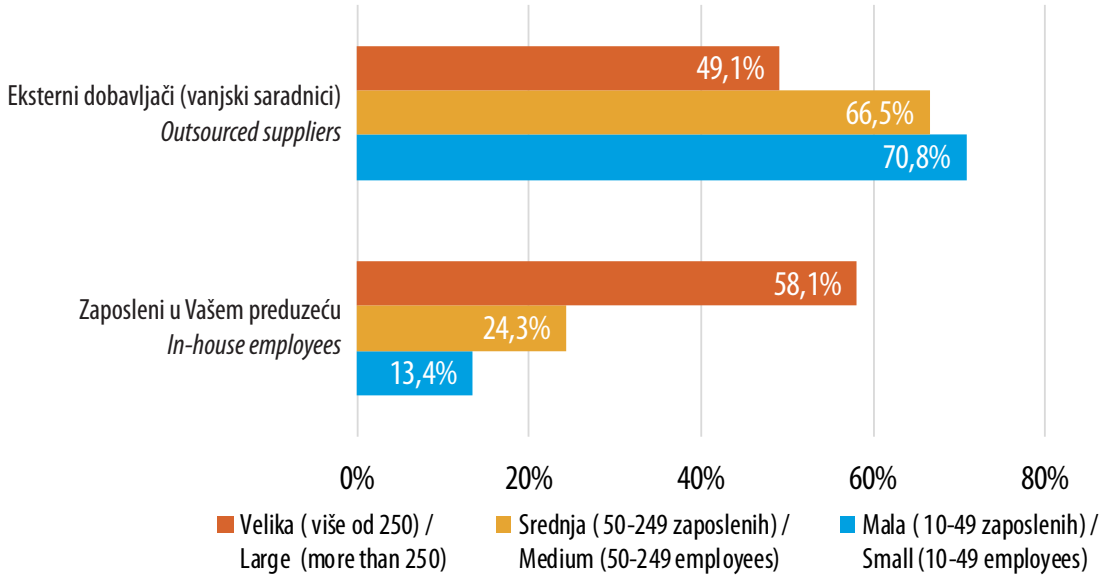
Grafikon 12. Pružanje obuka zaposlenim radi razvoja IKT vještina, po veličini poduzeća
Graph 12 Trainings provided to employees for developing ICT skills, by enterprise size



Istraživanje je pokazalo da, kako veličina poduzeća raste, tako raste broj interno zaposlenih IT stručnjaka.

The survey shows that, as enterprise size increases, so does increase the number of in-house IT experts.

Grafikon 13. Tko obavlja IKT funkcije u poduzeću tijekom 2022. godine, po veličini poduzeća?
Graph 13 Who provided ICT services in enterprise during 2022, by enterprise size?



IKT sigurnost

IKT sigurnost podrazumijeva mjere, kontrole i procedure koje se primjenjuju na IKT sustave poduzeća kako bi se osigurao integritet, autentičnost, dostupnost i povjerljivost podataka i sustava poduzeća.
Procjene rizika IKT-a se vrše kako bi se omogućilo poduzećima da procijene, identificiraju i modificiraju svoju ukupnu IKT sigurnost. Cilj modula je dobiti informacije o metodama koje poduzeća primjenjuju da podignu razinu IKT sigurnosti u poduzeću.

Preko 60% poduzeća koristi autentifikaciju pomoću šifre.

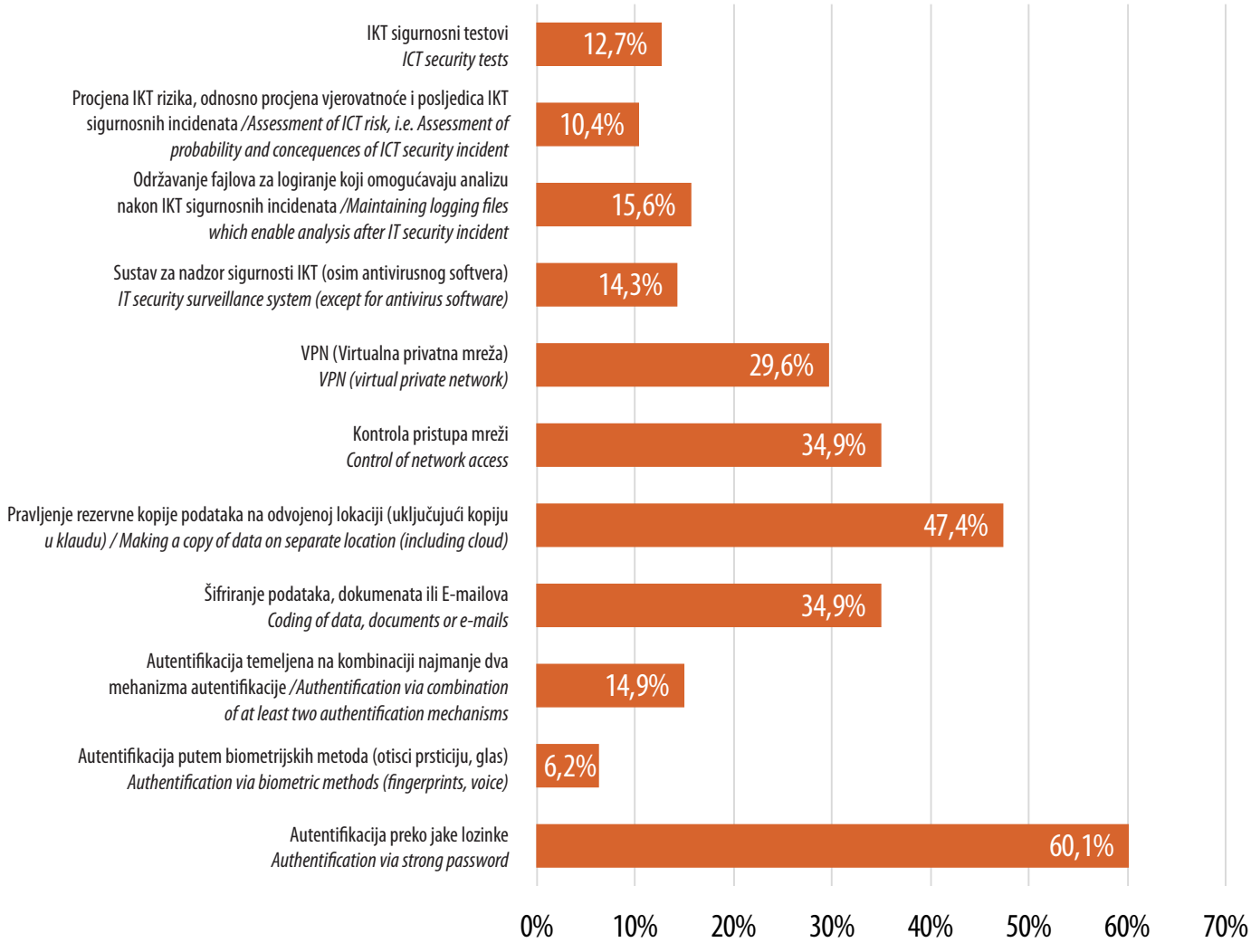
ICT security

ICT security means measures, controls and procedures applied on enterprise's ICT systems to ensure integrity, authenticity, availability and confidentiality of enterprise's data and systems.

ICT risk assesment is performed in order to enable enterprises to assess, identify and modify their total ICT security. The aim of this module is to gather information on methods which enterprises apply to raise the level of ICT security within enterprise.

Over 60% of enterprises use authentification via strong password.

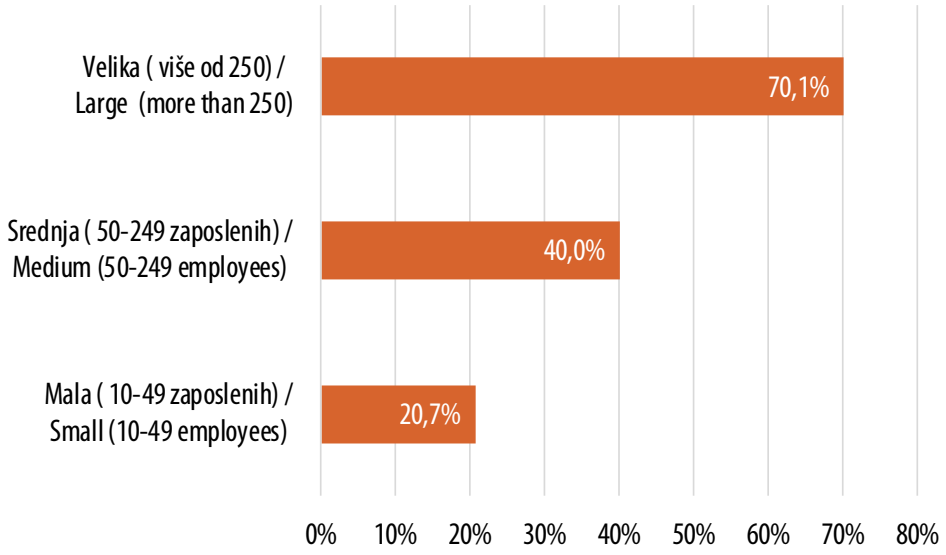
Grafikon 14. Primjenjuje li Vaše poduzeće bilo koju od sljedećih IKT mjera sigurnosti na svojim IKT sustavima?
Graph 14 Does your enterprise apply any of the following ICT security measures on their ICT systems?



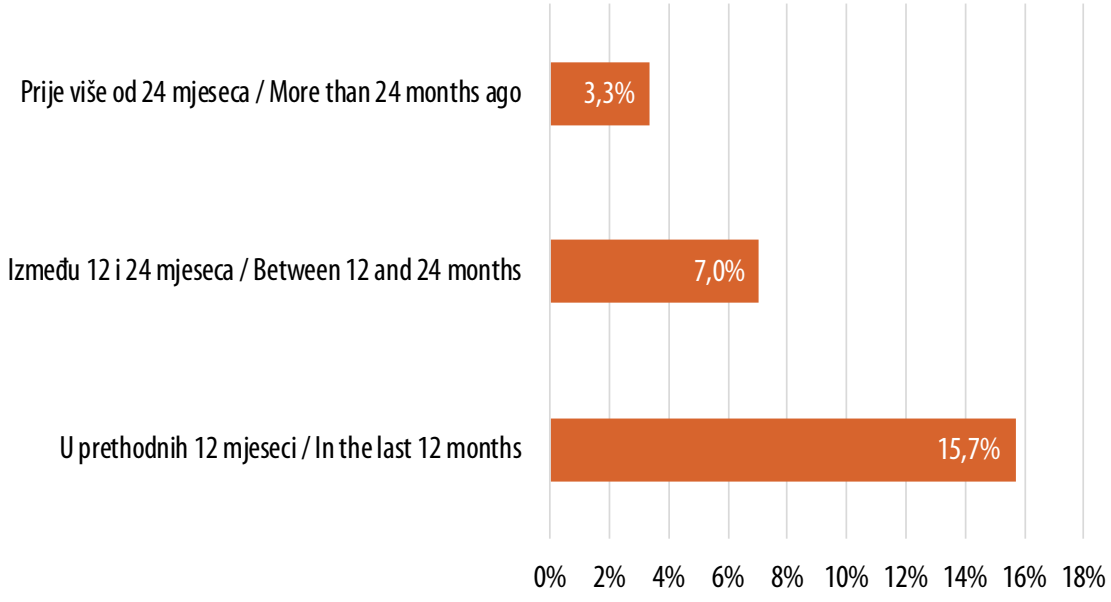
Na pitanje "Upoznaje li Vaše preduzeće zaposlene sa svojim obvezama u vezi sa pitanjima sigurnosti IKT na sljedeće načine?" odgovori su dati kako slijedi:
- Dobrovoljna obuka ili interno dostupne informacije (npr. informacije na intranetu) – 41%
- Obvezni tečajevi obuke – 8%
- Ugovorom (npr. ugovorom o radu) – 10,5%

Enterprises gave following answers to question: "Does your enterprise informs employees on their obligations relating to ICT security, in on of the following ways:"
- Volontary training or internally available data (e.g. information on intranet) – 41%
- Compulsory training courses – 8%
- Via contract (e.g employment contract) – 10.5%

Grafikon 15. Ima li Vaše poduzeće dokumente o mjerama, praksi ili procedurama o sigurnosti IKT-a?
Graph 15 Does your enterprise possess documents on measures, practice or procedures related to safety of ICT systems?



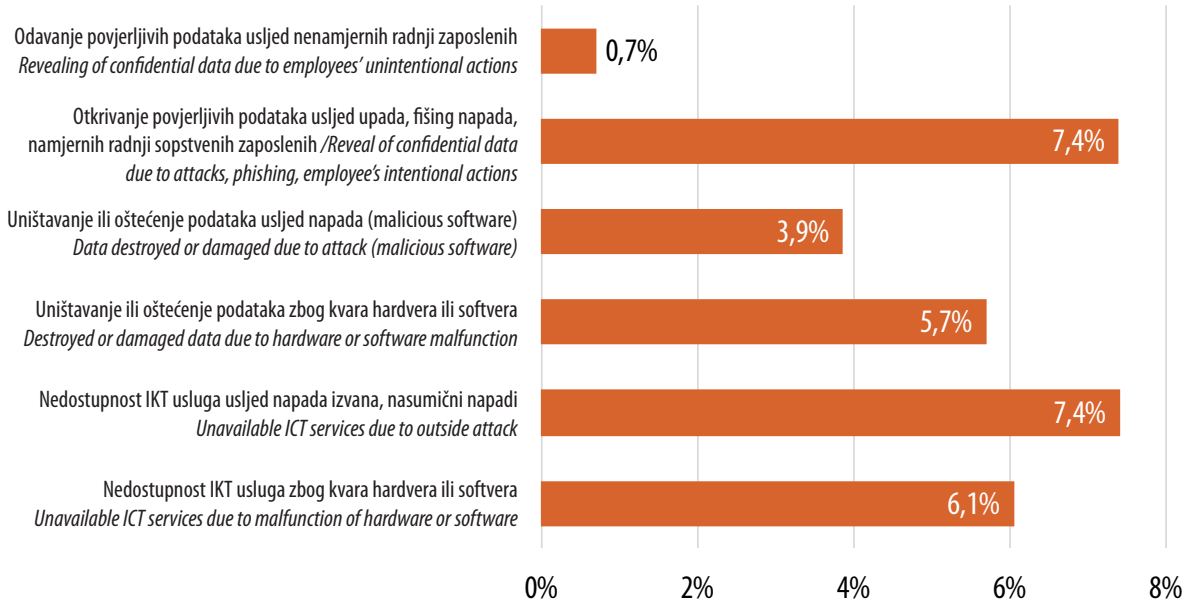
Grafikon 16. Kada su dokumenti u vezi sigurnosti IKT-a u vašem poduzeću zadnji put pregledani?
Graph 16 When were the documents related to safety of ICT systems in your enterprise reviewed last time?



12,9% poduzeća je odgovorilo "DA" na pitanje "Ima li Vaše preduzeće osiguranje od IKT sigurnosnih incidenata?"

12.9% of enterprises responded "YES" on question "Does your enterprise have insurance related to ICT security incidents"?

Grafikon 17. Je li Vaše poduzeće tijekom 2022. godina doživjelo bilo kakav sigurnosni incident u vezi sa IKT-om koji je doveo do sljedećih posljedica?
Graph 17 Was your enterprise attacked or had any ICT securit incident which caused the following concequences?



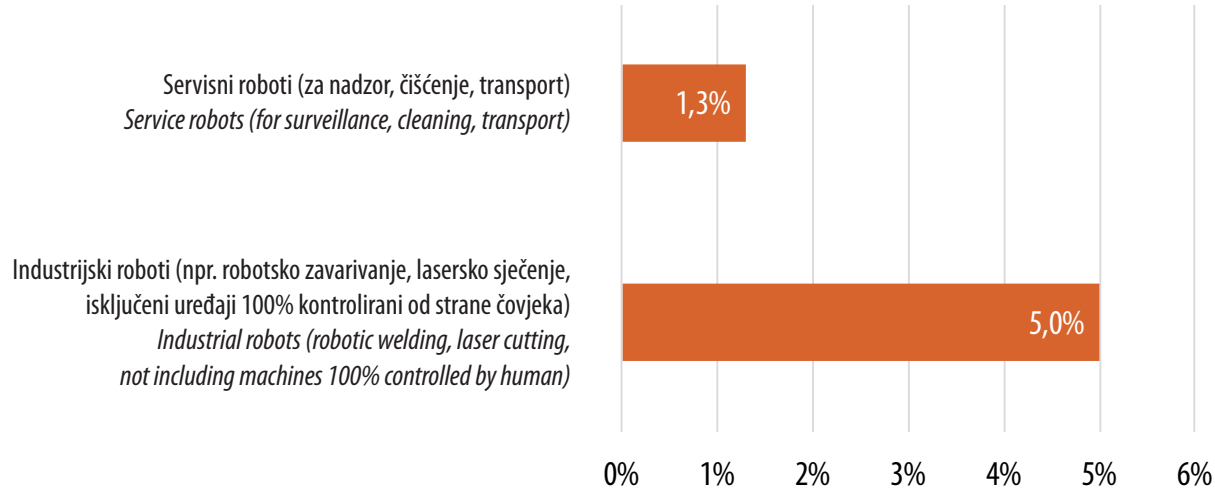
Uporaba robotike

Cilj ovog modula je mjerenje uporabe industrijskih i servisnih robota od strane poduzeća, te da izmjeri vrstu početne motivacije za poduzeća da se odluče na korištenje robota.
Manje od 10% poduzeća je odgovorilo da koristi bilo koju vrstu robota.

Use of robots

The aim of this module is to measure the use of industrial and service robots by enterprises, and to measure the type of initial motivation for enterprises to decide to use robots.
Less then 10% of enterprises responded that they use some kind of robots.

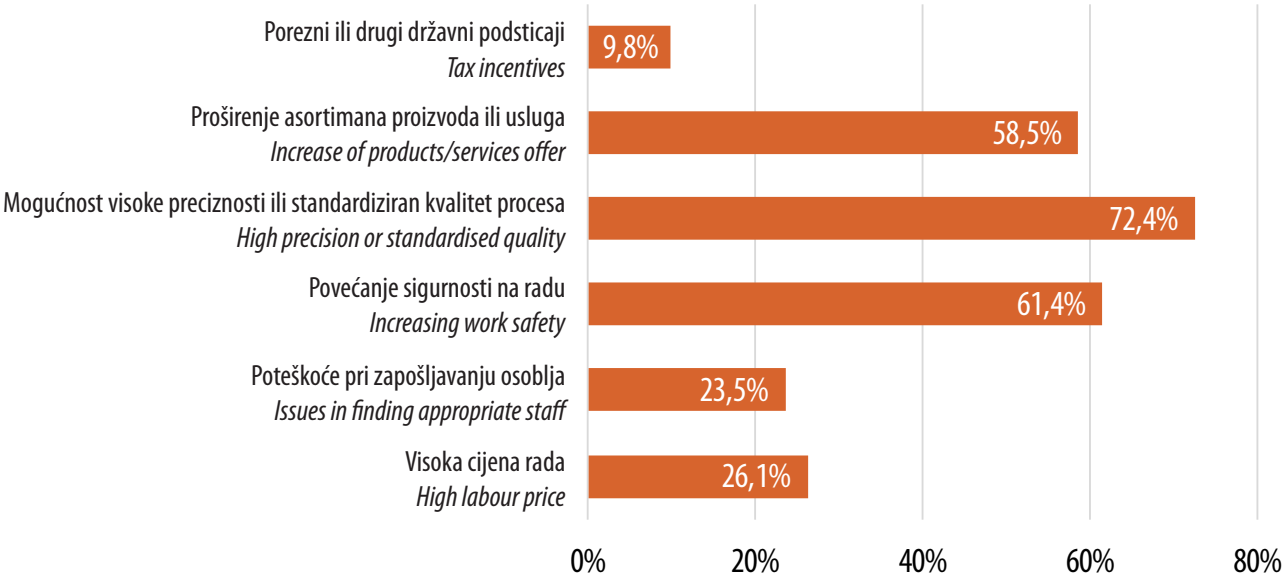
Grafikon 18. Koriste li preduzeća robote?
Graph 18 Do enterprises use robots?



Analizirajući po veličini poduzeća, velika poduzeća koriste najviše industrijskih robota (13,7%). Sa aspekta industrijske djelatnosti, najviše industrijskih robota (13,4%) se koristi u djelatnosti proizvodnje.

Analysing the enterprise size, large enterprises have the most use of industrial robots (13.7%)
From activity point of view, manufacturing enterprises have the most use of industrial robots (13.4%).

Grafikon 19. Razlozi za korištenje robota, za poduzeća koja koriste robote
Graph 19 Reasons for using robots, for enterprises which use robots



IKT i okoliš

Prikupljanje indikatora o zelenim IKT je neophodno za politike vezane za Europski zeleni dogovor.
Za prikupljanje podataka za 2022. predložen je ograničen broj pokazatelja, koji uglavnom imaju za cilj istraživanje: Informacije o navikama recikliranja pojedinaca/ kućanstava u vezi sa IT opremom koja se više ne koristi; - Informacije o značaju aspekata održivosti za odluke o kupovini IT opreme.

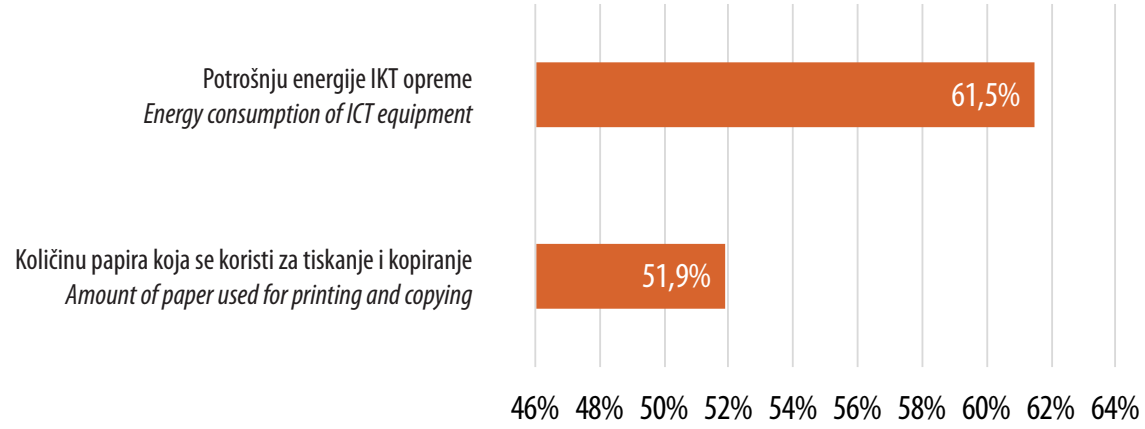
Više od 50% poduzeća je odgovorilo da primjenjuje određene mjere u svrhu uticaja na okoliš.

ICT and environment

The collection of indicators on Green ICT is necessary for the policies related to the European Green Deal.
For the 2022 data collection, a limited number of indicators has been proposed, aiming at investigating mainly: - Information on recycling habits of individuals/ households regarding IT equipment not used anymore; - Information on the importance of sustainability aspects for purchasing decisions of IT equipment.

More than 50% of enterprises responded that they apply some measures considering impact on environment.

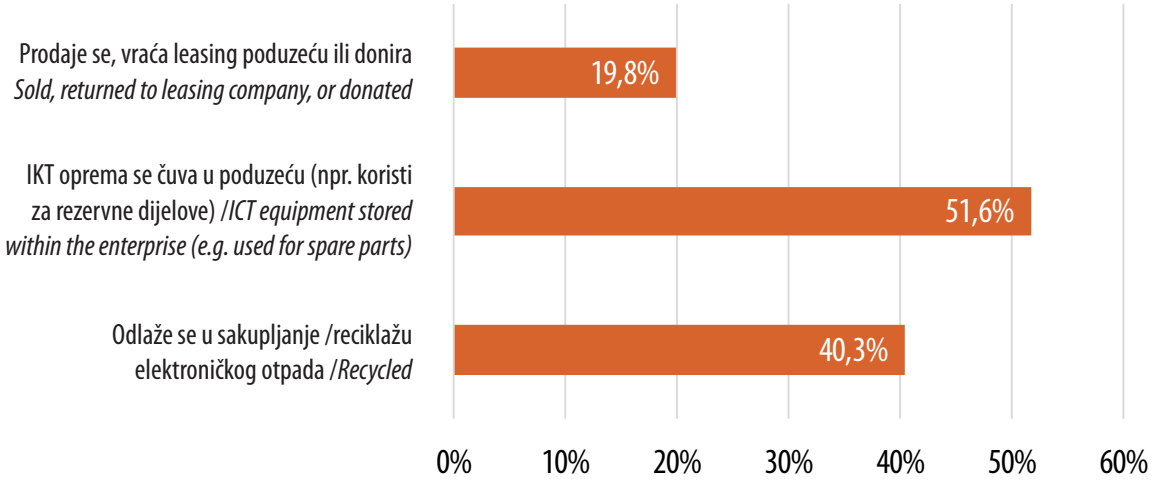
Grafikon 20. Primjenjuju li preduzeća mjere za smanjenje utjecaja na okoliš?
Graph 20 Do enterprises apply measures for decrease of impact on environment?



42,8% poduzeća je odgovorilo da razmatra utjecaj IKT usluga ili IKT opreme na okoliš kada ih bira.

42.8% of enterprises responded that they consider the impact of ICT services and equipment when selecting them.

Grafikon 21. Šta poduzeća rade sa IKT opremom koja se više ne koristi?
Graph 21 What do enterprises do with ICT equipment which is no longer used?



IKT RJEČNIK
Definicije

IKT (informacijske i komunikacijske tehnologije) su softveri i hardveri upotrijebljeni za komuniciranje podacima (npr. računar, telefaks, internet, fiksni i mobilni telefon).

Broadband su širokopojasne tehnologije ili veze koje omogućavaju brz prijenos podataka. Komunikacijski sustav čiji nositelj (npr. optički kabl) prenosi umnožene podatke u isto vrijeme, a svaki pojedinačni podatak modeliran je na posebnoj frekvenciji.

ADSL (Asymmetric Digital Subscriber Line) Širokopojasna digitalna transmisijska tehnologija koja koristi postojeću telefonsku liniju i dopušta istovremeno slanje podataka i komunikaciju glasom. Veći dio opsega služi za slanje podataka korisniku, a brzine se kreću do 6 Mbps.

Bit (Binary Digit) Najmanja jedinica informacije kojom rukuje računar Bit se prikazuje sa 1, ili 0 u binarnom prikazu, ili *true*, odnosno *false* u logičkom prikazu. Grupa od 8 bita čini 1 bajt.

E-government je elektronički kontakt preko interneta sa tijelima vlasti i javnim uslugama. Ne uključuju ručno kucane e–mailove. Suradnja i odnosi sa tijelima vlasti i javnim uslugama uključuje web stranice koje sadrže građanske obveze (npr. porezne prijave, obveze o kretanju), prava (npr. socijalne beneficije), službeni dokumenti (osobne karte, rodni list), javne obrazovne usluge (javne knjižnice, informacije o upisu u javne škole, fakultete), usluge javnog zdravstva (koje uključuju usluge javnih bolnica).

E-trgovina su transakcije koje se provode preko mreža računara baziranih na internetskom protokolu te preko ostalih računarskih mreža. Primanje narudžbi, dobara i usluga ostvaruje se putem navedenih mreža, ali samo plaćanje i konačna isporuka dobara i usluga mogu biti provedeni *online* ili *offline*. Narudžbe primljene telefonom, telefaksom ili ručno pisanim elektroničkim porukama ne smatraju se e-trgovinom.

Računari uključuju personalne računare (PC), prijenosne računare (laptop), tablete i ostale prijenosne uređaje (npr. smartphones).

CRM (Customer Relationship Management) Predstavlja proces ili metodologiju koja se koristi kako bismo više naučili o potrebama i navikama naših potrošača i da bismo razvili čvršće veze s njima. CRM sadrži više tehnoloških komponenti, ali je CRM u organizacijskom smislu skup procesa koji će pomoći da se sakupe neophodne informacije o potrošačima, prodaji, marketinškoj efikasnosti,

ICT GLOSSARY
Definitions

***ICT** (Information and Communication Technology) are software and hardware used for data communication (e.g. computer, fax, the internet, landline and mobile phone).*

***Broadband** are technologies or connections that enable rapid transmission of data. A communication system whose carrier (eg, optical cable) transmits multiplied data simultaneously, and each individual data is modulated on a particular frequency.*

***ADSL (Asymmetric Digital Subscriber Line)** Broadband digital transmission technology that uses an existing telephone line and allows simultaneous data transmission and voice communication. Most of the bandwidth is used to send data to the user, and the speed ranges up to 6 Mbps.*

***Bit (Binary Digit)** The smallest piece of information that the computer handles. Bit is displayed with 1, or 0 in the binary view, or true, and false in the logical view. A group of 8 bits makes 1 byte.*

***E-government** is an electronic contact via the Internet with government authorities and public services. It does not include hand-written e-mails. Cooperation and relations with authorities and public services include websites that contain civil obligations (e.g. tax returns, movement obligations), rights (e.g. social benefits), official documents (ID cards, birth certificates), public educational services (public libraries, information on enrollment in public schools, faculties), public health services (which include public hospital services).*

***E-commerce** are transactions conducted over an internet protocol-based networks and over other computer-mediated networks. Goods and services are ordered via these networks, but the payment and the delivery of the goods or services may be conducted on-line or off-line. Orders received via telephone, facsimile, or manually typed e-mails are not considered e- commerce.*

***Computers** include personal computers (PCs), portable computers (laptops), tablets and other portable devices (e.g., smartphones).*

***CRM (Customer Relationship Management)** It represents a process or methodology used to learn more about the needs and habits of consumers and to develop tighter relationships with them. CRM contains several technological components, but CRM is an organizational set of processes that assists in gathering the necessary information on consumers, sales, marketing efficiency, consumer reactions and market*

reakcijama potrošača i tržišnim trendovima. CRM pomaže poslovno korištenje tehnologije i ljudskih resursa kako bi se stekao uvid u ponašanje i vrijednost potrošača.

trends. CRM helps business use technology and human resources to gain insight into the behavior and value of consumers.

ERP (Enterprise Resource Planning) je skraćenica od Enterprise Resource Planning i sastoji se od jednog ili više skupova softverskih aplikacija koje integriraju informacije i procese u nekoliko poslovnih funkcija unutar poduzeća. ERP softver se može instalirati i koristiti u hardverskom kapacitetu poduzeća ili se može koristiti kao usluge računarstva u oblaku. Obično ERP integrira planiranje, nabavku, prodaju, marketing, odnos sa klijentima, financije i ljudske resurse. Smatra se da poduzeća koriste ERP softver ako koriste sve ili samo jedan skup softverskih aplikacija (modula).

ERP (Enterprise Resource Planning) *is, in short, a software system that tracks all aspects of enterprises business. The implemented ERP system is able to integrate the business of various parts of the enterprise (such as accounting, sales, production, etc.) into one single entity. This creates a system through which it is possible, on the one hand, to manage all human and material resources, and on the other, to plan, develop and monitor business processes and procedures.*

Download Elektronički transfer informacija sa udaljenog računara na vaš računar. Preuzimanje datoteka sa anonimnog FTP-a jeste popularan način pribavljanja besplatnog softvera u javnom vlasništvu.

Download *Electronic transfer of information from a remote computer to your computer. Downloading anonymous FTP files is a popular way to get free public domain software.*

DSL (Digital Subscriber Line) Vrsta brze internet konekcije korištenjem standardnih telefonskih parica. Može biti i vrsta *broadband* konekcije.

DSL (Digital Subscriber Line) *A type of fast internet connection using standard telephone pairs. It can also be a type of broadband connection.*

xDSL, ADSL Prijenosi koji se vrše putem internet mreža zasnovanih na protokolu i putem ostalih kompjuterskih mreža. Roba i usluge se naručuju putem tih mreža, ali isplata i konačno dostavljanje robe ili usluge može se provoditi na mreži ili izvan mreže (*offline*). Narudžbe koje se primaju putem telefona, faksa ili maila ne ulaze u kategoriju elektroničke trgovine.

xDSL, ADSL *etc. Transfers made via Internet networks based on the protocol and through other computer networks. Goods and services are ordered through these networks, but payment and final delivery of goods or services can be carried out online or off-line. Orders received by phone, fax or e-mail are not considered e-commerce.*

E-mail Elektronički prijenos poruke, uključujući tekst i priloge, s jednog na drugi računar koji su locirani unutar ili izvan organizacije. To uključuje elektroničku poštu putem interneta ili drugih računarskih mreža.

E-mail *Electronic message transmission, including text and attachments, from one computer to another located inside or outside the organization. This includes an electronic mail via the Internet or other computer networks.*

Cloud computing se odnosi na IKT usluge koje se koriste preko interneta za pristup softverima, računarskoj snazi, kapacitetima memorije i sl.

Cloud computing *refers to ICT services that are used over the internet to access software, computing power, storage capacity etc.*

Big data analiza se odnosi na korištenje tehnologija, tehnika i softverskih alata, za dubinsko prikupljanje podataka ili teksta, strojno učenje, itd. radi analize podataka prikupljenih iz izvora u vašem vlastitom poduzeću ili drugih izvora.

Big data analysis *refers to the use of technologies, techniques or software tools such as data or text mining, machine learning, etc., for analysing big data extracted from your own enterprise's data sources or other data sources.*

3D tiskanje, se naziva proizvodnja aditivnog sloja, odnosi se na uporabu posebnih printera bilo u samom poduzeću, bilo na uporabu usluga 3D tiska koje pružaju druga poduzeća za stvaranje trodimenzionalnih fizičkih objekata pomoću digitalne tehnologije.

3D printing *aka additive layer manufacturing refers to the use of special printers either by the enterprise itself or the use of 3D printing services provided by other enterprises for the creation of threedimensional physical objects using digital technology.*

Industrijski robot je automatsko kontrolirani, reprogramirajući, višenamjenski manipulator koji se može programirati u tri ili više pravaca, a koji mogu biti ili fiksirani u mjestu ili mobilni za uporabu. Većina postojećih industrijskih robota bazirana je na robotskoj ruci sa čvrstim postoljem i nizom veza i spojeva sa krajnim efektorom koji izvršava zadatake.

Uslužni robot je stroj koji ima stupanj autonomije koja mu omogućuje da djeluje u složenom i dinamičnom okruženju koje može zahtijevati interakciju s osobama, predmetima ili drugim uređajima, isključujući njegovu primjenu kod industrijske automatizacije. Dizajnirani su primjereno svojim zadacima, rade u zraku (npr. kao dron), pod vodom, ili na kopnu, koristeći točkove ili noge da ostvare mobilnost sa rukama i efektorima na kraju za fizičku interakciju i često se koriste za zadatke inspekcije i održavanja.

An industrial robot *is an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which may be either fixed in place or mobile for use. Most existing industrial robots are based on the robot arm with a solid base and a series of links and joints with an end effector that carries out the task.*

A service robot *is a machine that has a degree of autonomy that enables it to operate in complex and dynamic environment that may require interaction with persons, objects or other devices, excluding its use in industrial automation applications. They are designed to fit their tasks, working in the air (e.g. as a drone), under water, or on land, using wheels or legs to achieve mobility with arms and end effectors to physically interact and are often used in inspection and maintenance tasks.*