

# UPORABA informacijsko-komunikacijskih tehnologija u Bosni i Hercegovini

*USE OF INFORMATION AND COMMUNICATION  
TECHNOLOGY IN BOSNIA AND HERZEGOVINA*

## 2021



Bosna i Hercegovina  
Bosnia and Herzegovina



Agencija za statistiku  
Bosne i Hercegovine  
Agency for Statistics of  
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Sarajevo, 2022.

**UPORABA INFORMACIJSKO-  
KOMUNIKACIJSKIH TEHNOLOGIJA  
U BOSNI I HERCEGOVINI**  
*USE OF INFORMATION AND  
COMMUNICATION TECHNOLOGIES  
IN BOSNIA AND HERZEGOVINA*  
**2021**



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Bosnia and Herzegovina



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

Sarajevo, 2022

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## 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 odnosio na kućanstva i pojedince, a drugo na poduzeća. Oba ova istraživanja provedena su 2021.

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, 2021, 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 intervjuiranjju ili posjeti anketara, dok su se pojedina pitanja odnosila na cjelokupnu 2020. 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 za razinu Bosne i Hercegovine je 8 110 kućanstava. Stopa odgovora je 78,8%, odnosno 6 393 kućanstava (stoji stopa odgovora = broj jedinica koje su odgovorile/sa broj jedinica izabran u uzorak).

Podaci su prikupljeni putem telefonskog anketiranja (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%.

## 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 2021.*

*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, 2020., 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 2020.*

*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 8165 households. The response rate is 78.8%, or 6 393 households (response rate = number of units responded / with number of units selected in the sample).*

*Data were collected through telephone interviewing (CATI)*

*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.

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, 2021.

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

*The data were collected via CATI and survey by mail.*

*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, 2021.*

*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 8 110 kućanstava na teritoriju Bosne i Hercegovine. Stopa odgovora iznosi 78,8%, ( 6 393 domaćinstava)

## SAMPLE

The survey on the use of information and communication technologies in households was conducted on a representative sample of 8110 households in the territory Bosnia and Herzegovina. The response rate is 78,8%, (6,393 households).

Uzorak kućanstva Household sample	Entitet /Entity			Ukupno BiH Total BiH	Gradsko Urban	Ostalo Other	Kućanstva sa i bez djece Households with and without children	
	Federacija BiH Federation of BiH	Republika Srpska Republic of Srpska	Distrikt Brčko Brčko District				Kućanstva sa djecom mlađom od 16 godina Households with children under 16 years of age	Kućanstva bez djece mađe od 16 godina / Households without children under 16 years of age
Broj odgovora Number of responses	3 445	2 508	440	6 393	3 220	3 173	1 855	4 538
%	53,9	39,2	6,9	100,0	50,4	49,6	29,0	71,0

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 8 110 pojedinca. Stopa odgovora iznosi 78,8% (6 393 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 8 110 individuals. The response rate is 78.8% (6 393 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	2 896	3 497	6 393	472	620	1 010	1 268	1 505	1 518
%	45,3	54,7	100,0	7,4	9,7	15,8	19,8	23,5	23,7

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 educa- tion	Srednjoškolsko obrazovanje Secondary education	Više i visoko obrazovanje Tertiary educa- tion	Zaposlen Employed	Nezaposlen Unemployed	Student Student	Ostali (umirovljenici, neaktivni) Other not in the labour force (retired, inactive)
Broj odgovora Number of responses	6 393	1 556	4 033	804	1 951	1 621	209	2 612
%	100,0	24,3	63,1	12,6	30,5	25,4	3,3	40,9



## GLAVNI INDIKATORI

### Računari u kućanstvima

(Bilo koje vrste: desktop, laptop, netbook, tablet, osim smartphone)

Rezultati istraživanja o uporabi informacijsko-komunikacijskih tehnologija u kućanstvima i pojedinačno (IKT-D) u Bosni i Hercegovini, pokazali su sljedeće:

- 62,8% kućanstava imaju pristup računaru,
- 37,2% kućanstava nemaju pristup računaru.

## MAIN INDICATORS

### Computers in households

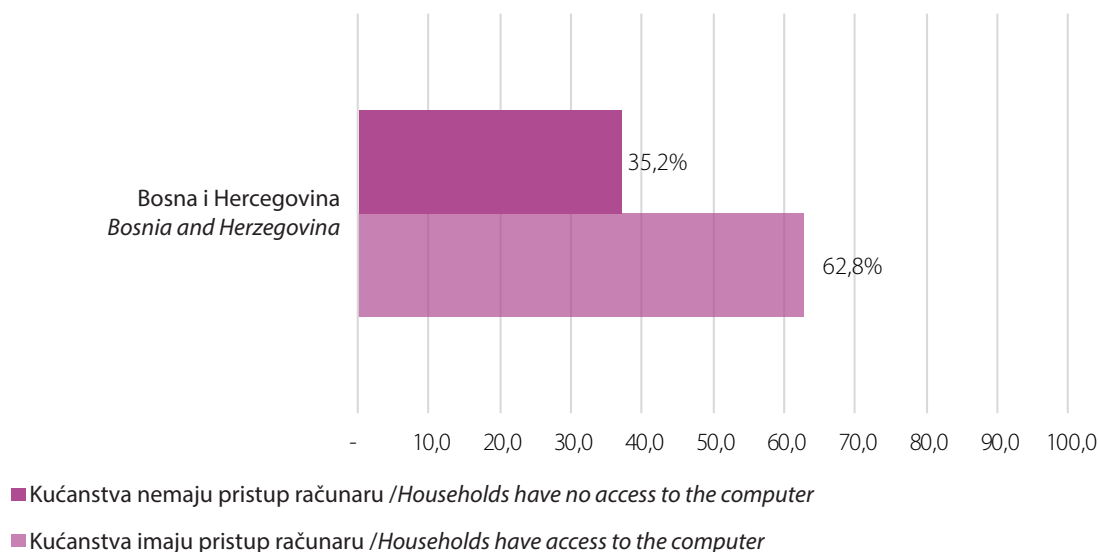
(Any type: desktop, laptop, netbook, tablet, except smartphones)

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:

- 62.8% of households have access to the computer
- 37.2% of households do not have computer access

Grafikon 1. Postorak kućanstava koja imaju pristup računaru, BIH

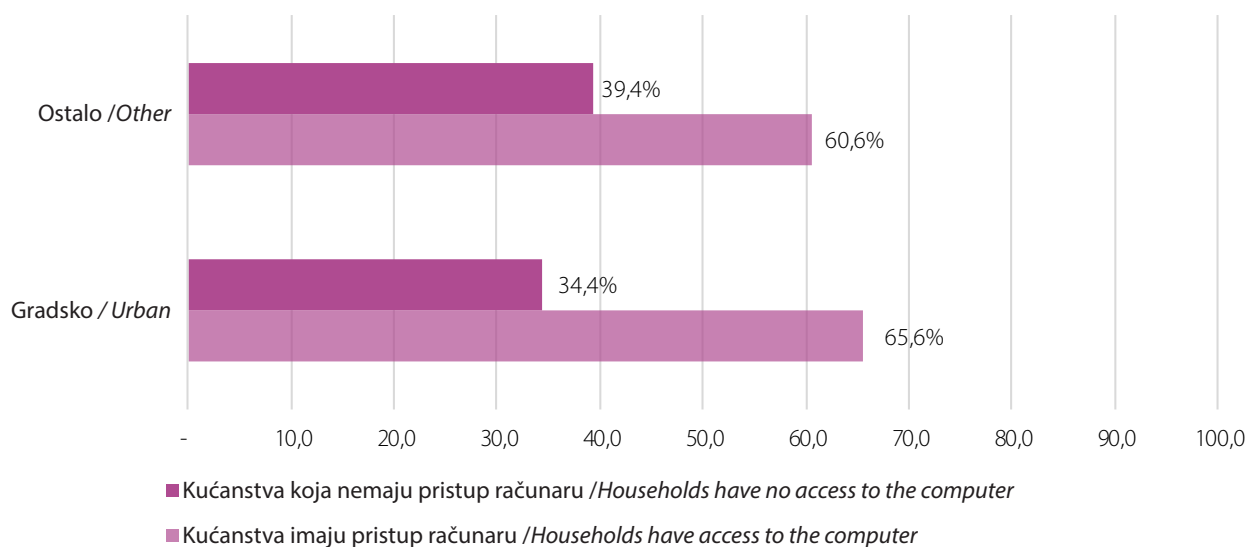
Graph 1. Households access to the computer, BIH



Zastupljenost računara u kućanstvima varira zavisno o tipu naselja. U urbanim sredinama 65,6% kućanstava ima pristup računaru, u ostalim dijelovima 60,6%.

The representation of computers in households varies depending on the type of settlement. In urban areas 65.6% of households have access to a computer in other parts 60.6%.

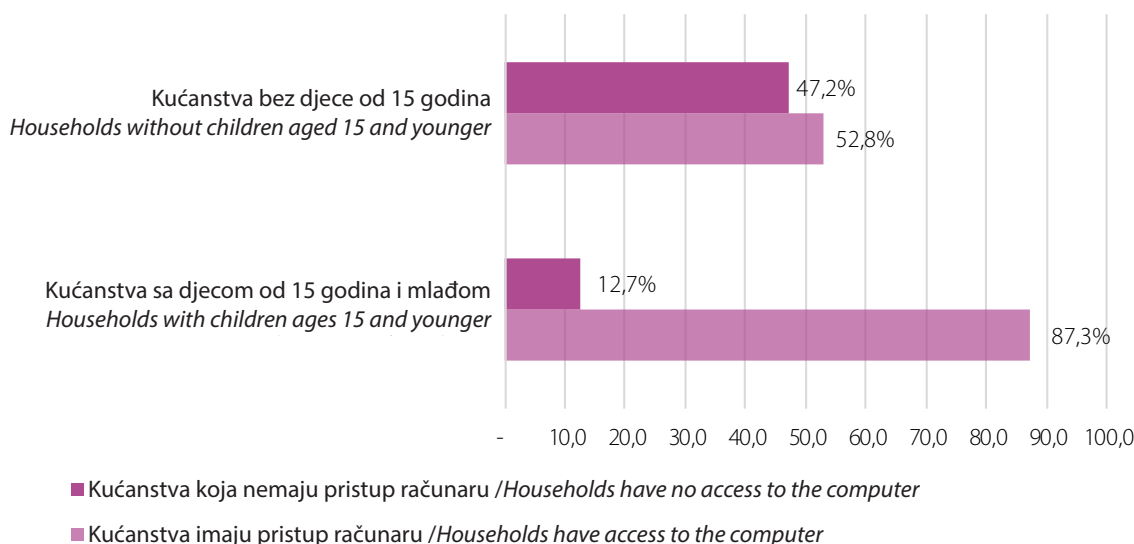
**Grafikon 2. Postorak kućanstava koja imaju pristup računaru, prema tipu naselja, BiH**  
**Graph 2. Percentage of households which have access to a computer, by settlement type, BiH**



Značajne razlike se mogu primijetiti kada se upoređuje pristup računaru u kućanstvima sa djecom mlađom od 16 godina (87,3%) i kućanstvima bez djece mlađe od 16 godina (52,3%).

*Huge differences can be observed when comparing computer access in households with children under 16 (87.3%) and households without children under 16 (52.3%).*

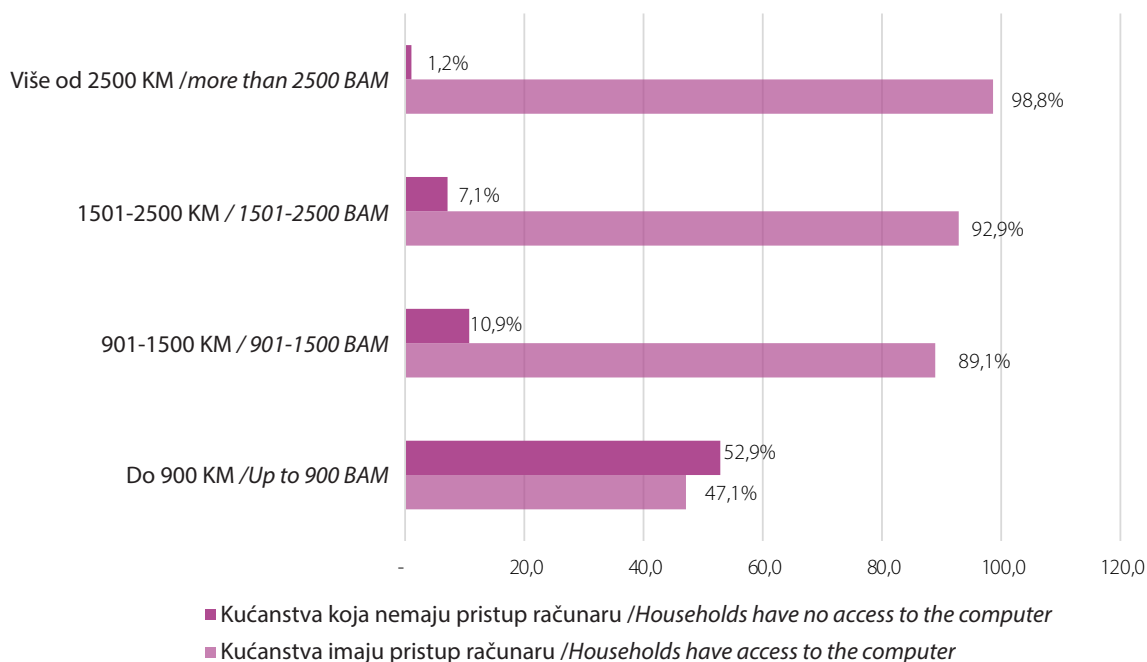
**Grafikon 3. Postotak kućanstava koja imaju pristup računaru, sa djecom od 15 godina i mlađom, BiH**  
**Graph 3. Percentage of households which have access to the computer, with children aged 15 and younger, BiH**



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 (92,9%), odnosno prihodima većim od 2 500 KM (98,8%), dok udio kućanstava sa primanjima do 900 KM iznosi svega 47,1%.

*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 1500 KM (92.9%) and revenue of more than 2,500 KM (98.8%), while the share of households with incomes up to 900 KM is only 47.1%.*

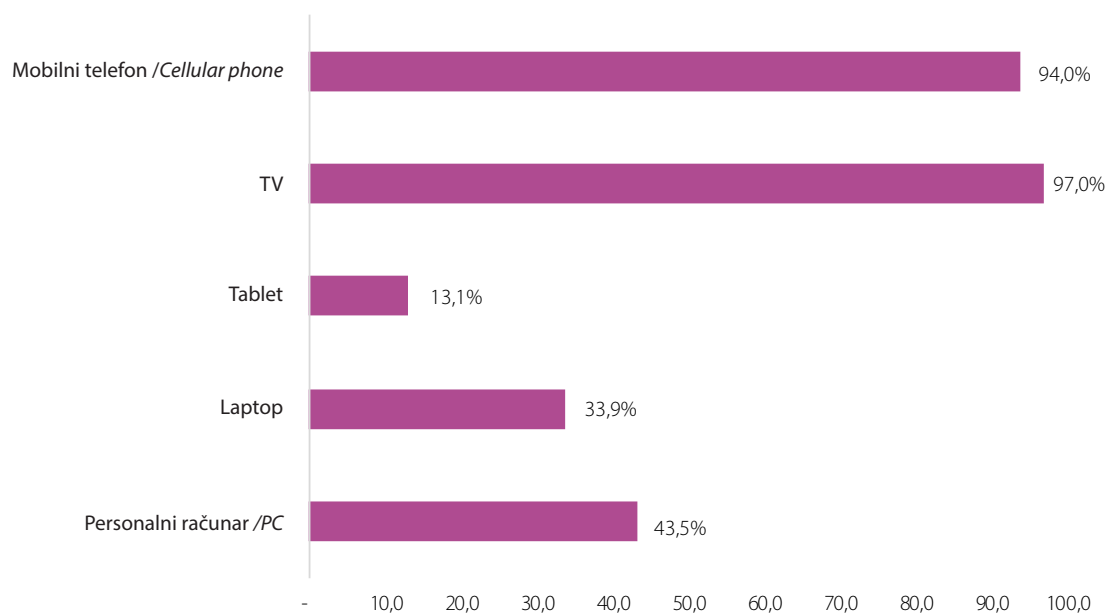
**Grafikon 4. Postotak kućanstava koja imaju pristup računaru, prema mjesečnim neto prihodima kućanstva, BiH**  
**Graph 4. Percentage of households which have access to the computer, according to monthly net income of the household, BiH**



Na pitanje koje se odnosi na uređaje kojima kućanstvo ima pristup, ispitanici su mogli da daju više odgovora. Istraživanje pokazuje da 97,0% kućanstava posjeduje TV, a 94,0% 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 97.0% of households own a TV and 94.0% of households own a mobile phone.

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





### **Internet u kućanstvima**

Rezultati istraživanja o uporabi informacijsko-komunikacijskih tehnologija u kućanstvima i pojedinačno (IKT-D) u Bosni i Hercegovine, pokazali su sljedeće:

- kućanstva imaju pristup internetu: 75,5%,
- kućanstva nemaju pristup internetu: 24,2%,
- kućanstvo ne zna da li ima pristup internetu: 0,3%.

U Bosni i Hercegovini 75,5% kućanstava ima pristup internetu, što je povećanje od 2,7% u odnosu na 2020. godinu.

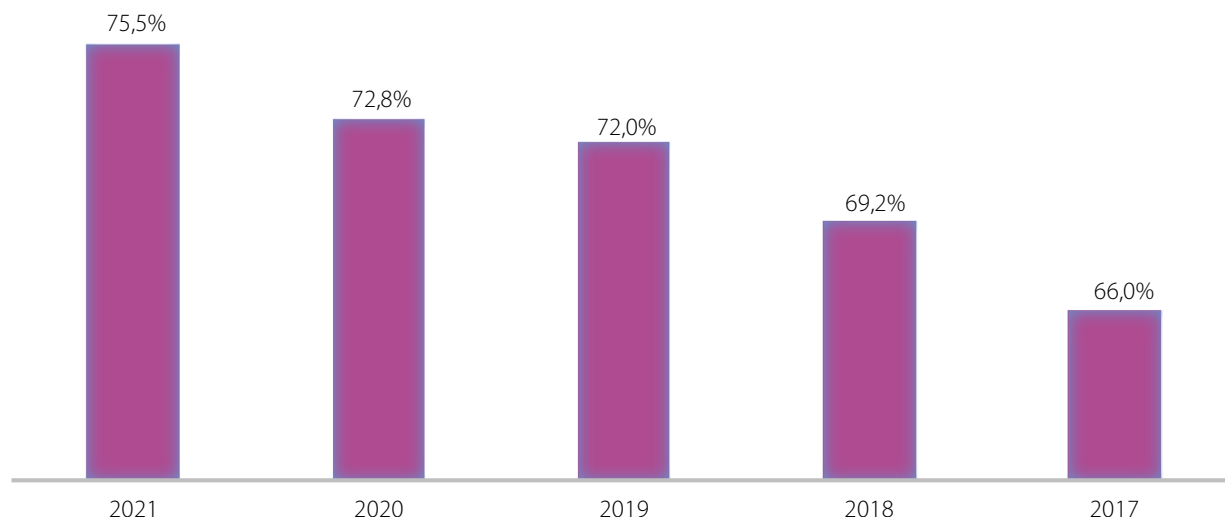
### **Internet in households**

*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: 75.5%*
- *households do not have Internet access: 24.2%*
- *households do not know whether it has access to the Internet: 0.3%*

*In Bosnia and Herzegovina, 75.5% of households have internet access, an increase of 2.7% compared to 2020.*

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



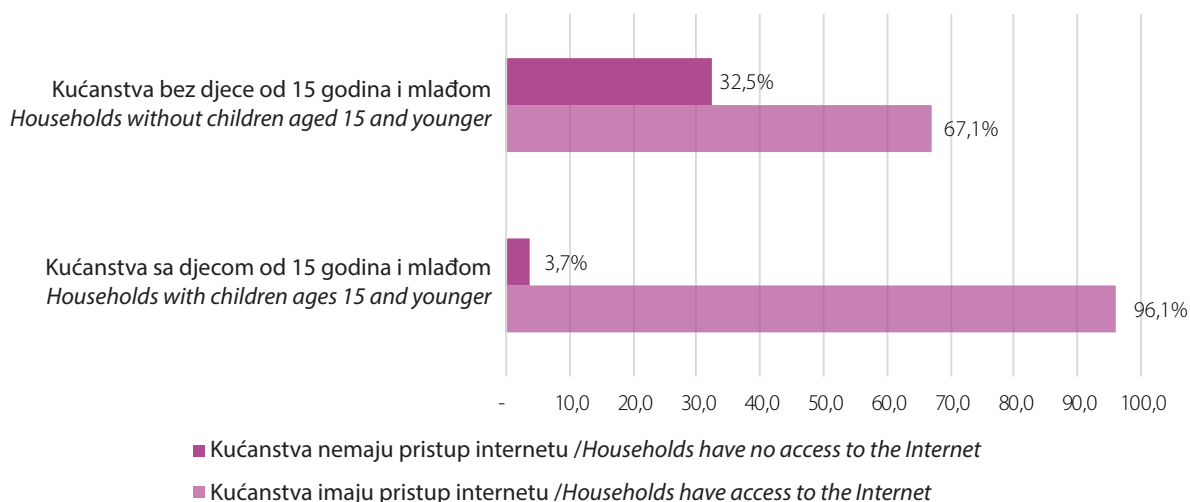
Rezultati istraživanja su pokazali da 96,1% kućanstava koja imaju djecu ispod 16 godina imaju pristup internetu.

Rezultati istraživanja su pokazali da 67,1% kućanstava koja nemaju djecu ispod 16 godina, imaju pristup internetu.

*The survey results showed that 96.1% of households with children under 16 have an internet access.*

*The 67.1% of households have access to the Internet, without children aged under 16.*

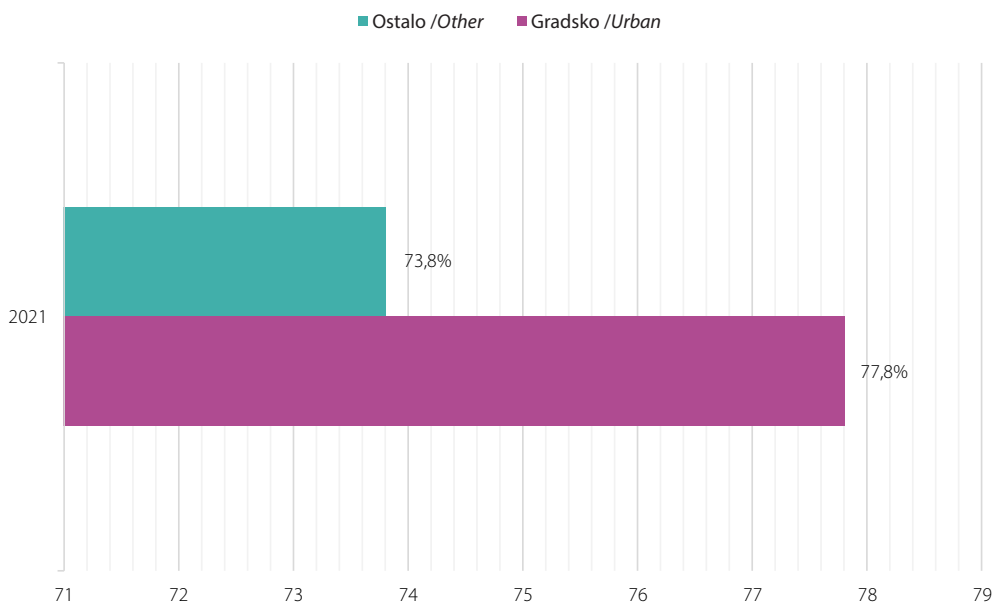
**Grafikon 7. Postotak kućanstava koja imaju pristup internetu, sa djecom od 15 godina i mlađom, BiH**  
**Graph 7. Percentage of households which have access to the Internet, with children aged 15 and younger, BiH**



Internet priključak u kućanstvima varira zavisno o tipu naselja. U gradskim sredinama 77,8% kućanstava ima internet priključak u ostalim sredinama 73,8%.

*Internet connection in households varies depending on the type of settlement. In urban areas 77.7% of households have internet connection in other areas 73.8%*

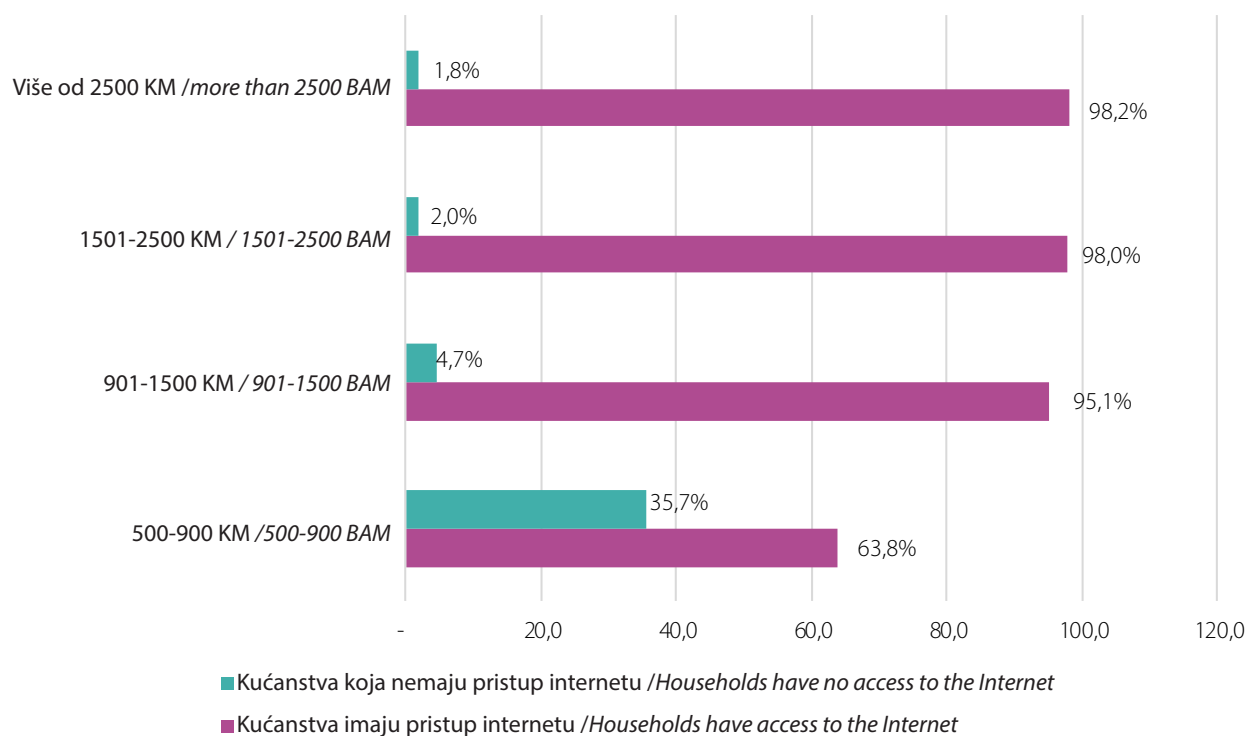
**Grafikon 8. Postotak kućanstava koja posjeduju internet priključak, prema tipu naselja**  
**Graph 8. Percentage of households that own internet connection, by the type of settlement**



Jaz u pristupu kućanstava internetu vidljiv je u strukturi kućanstava po mjesečnom dohotku. Pristup internetu većinom imaju kućanstva sa mjesečnim primanjima većim od 900 KM (95,1%), 1500 KM (98,0%), odnosno prihodima većim od 2 500 KM (98,2%), dok udio kućanstava sa primanjima do 900 KM iznosi 63,8%.

*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 900 KM (95.1%), 1500 KM (98.0%) and revenue of more than 2,500 KM (98.2%), while the share of households with incomes up to 900 KM is 63.8%.*

**Grafikon 9. Postotak kućanstava koja imaju pristup internetu, prema mjesečnim neto prihodima kućanstva, BIH 2021.**  
*Graph 9. Percentage of households which have internet connection, according to monthly net income of the household, BIH 2021*



### Pojedinci: uporaba interneta

U Bosni Hercegovini je 75,7% osoba koristilo internet u posljednja tri mjeseca, 1,0% ispitanika koristilo je internet prije više od tri mjeseca, a 3,3% prije više od godinu dana. Ispitanici koji nikad nisu koristili internet je 20,3 %.

Za 2,5% povećao se broj korisnika interneta u odnosu na 2020. godinu.

Udio korisnika interneta (u posljednja tri mjeseca), prema razini obrazovanja:

- osobe s višim i visokim obrazovanjem: 93,3%,
- osobe sa srednjim obrazovanjem: 82,7%,
- osobe sa osnovnim ili niže srednjim obrazovanjem: 48,9%.

Udio korisnika interneta (u posljednja tri mjeseca), prema spolu:

- Muškarci: 79,2%,
- Žene: 72,7%.

### Individuals: use of the Internet

In Bosnia-Herzegovina, 75,7% of persons used the Internet during the last three months, 1.0% of respondents used the internet more than three months ago, and 3.3% more than a year ago. 20.3% of respondents never used the Internet.

The number of Internet users increased by 2.5% compared to 2020 year.

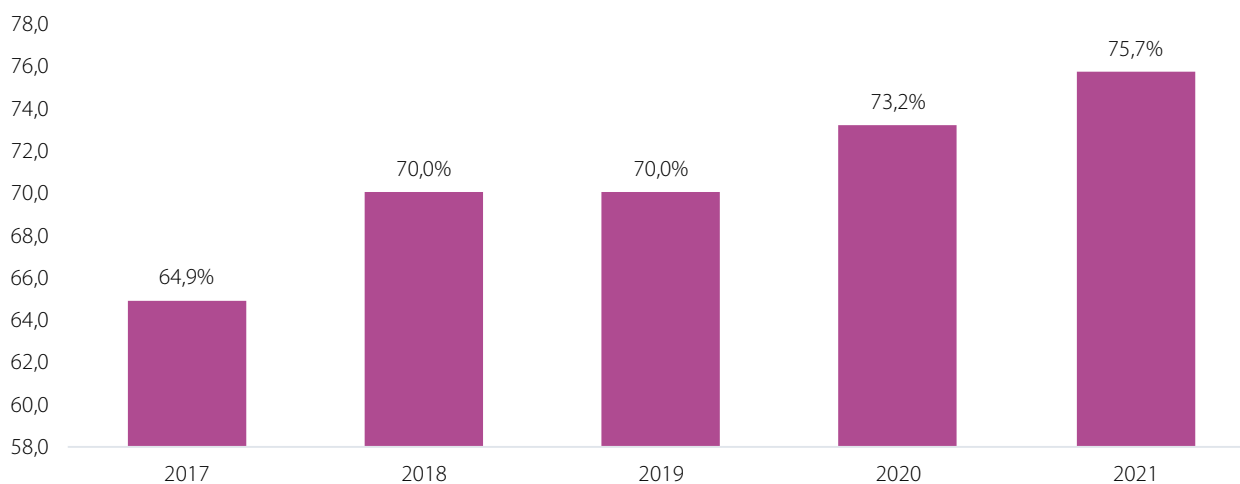
Share of Internet users (in the last three months), by educational attainment level:

- persons with higher education: 93.3%
- persons with secondary education: 82.7%
- persons with primary or lower secondary education: 48.9%.

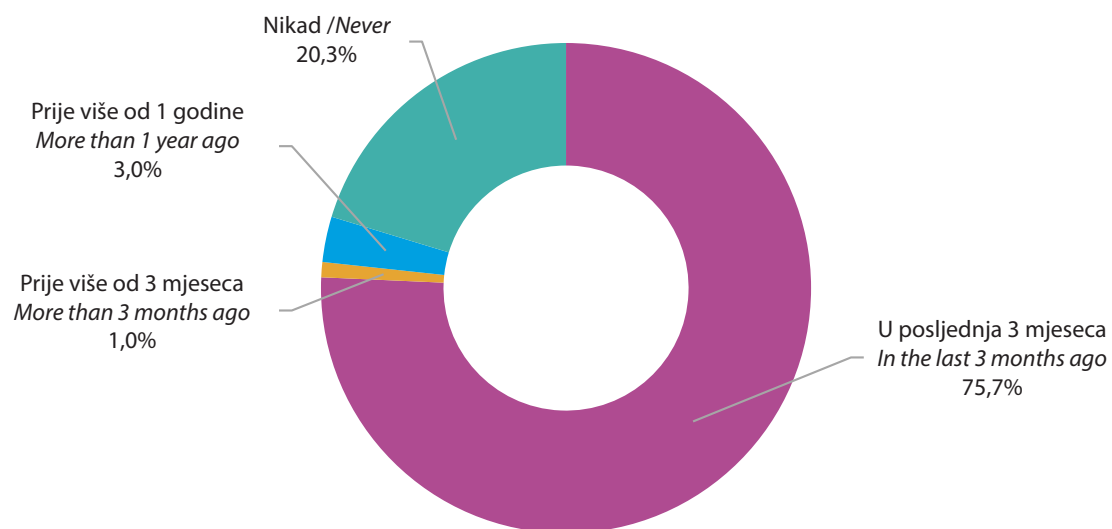
Share of Internet users (in the last three months), by gender:

- Males: 79.2%
- Females: 72.7%

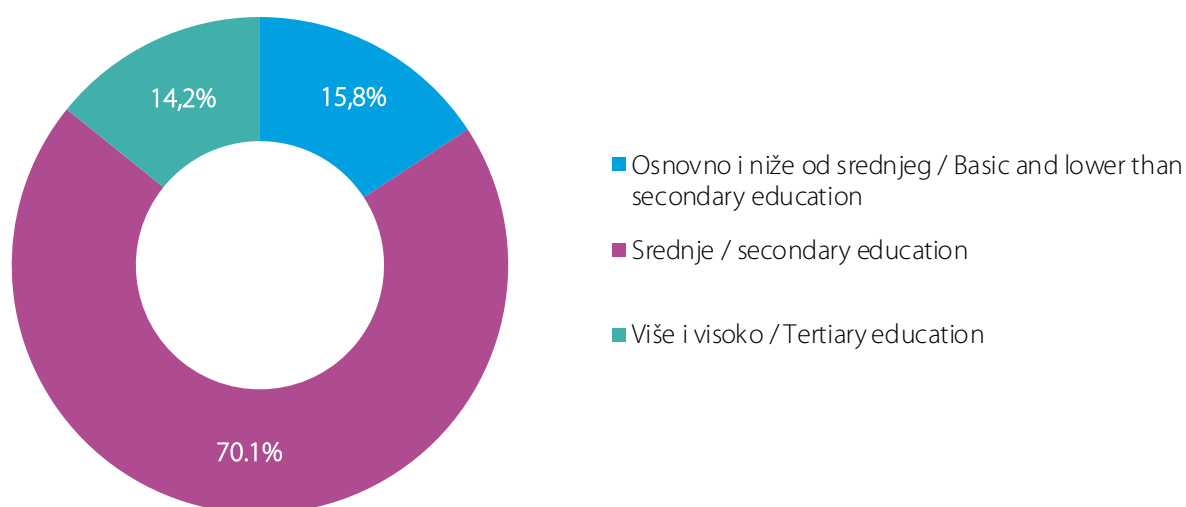
**Grafikon 10. Osobe koje su koristile internet u posljednja 3 mjeseca**  
**Graph 10. Persons who used the Internet in the last 3 months**



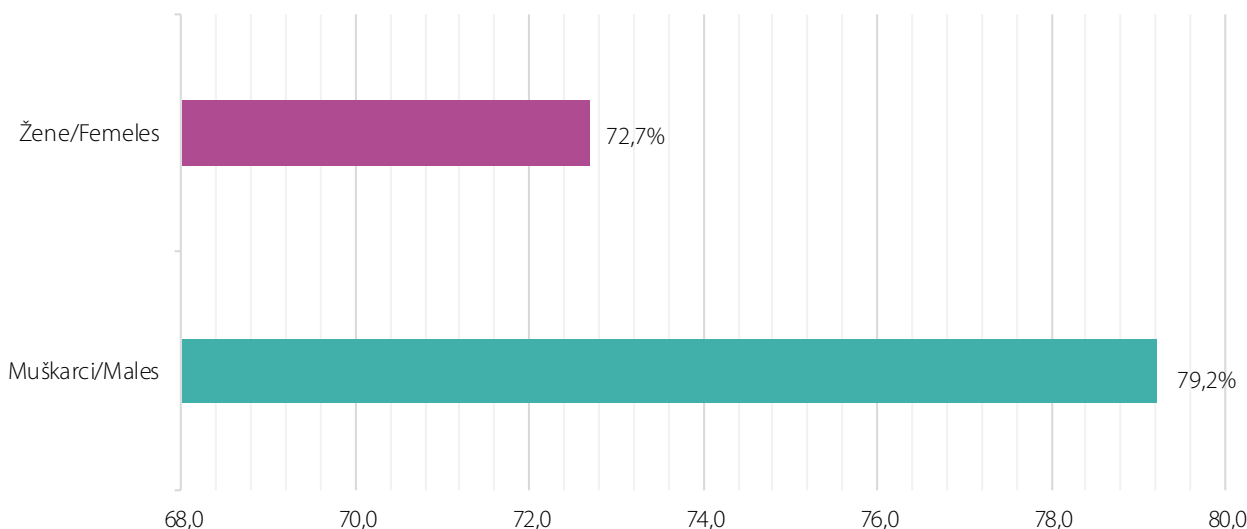
**Grafikon 11. Osobe koje su koristile internet, 2021. godina**  
**Graph 11. Persons who used the Internet, 2021**



**Grafikon 12. Struktura obrazovanja korisnika interneta, 2021. godina**  
**Graph 12. Structure of education of Internet users, 2021**



**Grafikon 13. Udio korisnika interneta (u posljednja tri mjeseca), prema spolu 2021.**  
**Graph 13. The share of Internet users (in the last three months), by gender 2021**



Postotak korisnika interneta u zadnja tri mjeseca, prema radnom statusu:

- 93,6% zaposlenih osoba;
- 80,2% nezaposlenih osoba;
- 100,0% studenata;
- 57,5% umirovljenici;
- 55,6% ostali (kućanica, neaktivno stanovništvo i sl)

*The share of Internet users is three months, by to the working status:*

- 93.6% of employed persons;
- 80.2% of unemployed persons;
- 100.0% of students;
- 57.5% of pensioners;
- 55.6% 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, 94,4% ispitanika odgovorilo je: svakog dana ili skoro svakog dana.

*When asked how often they used the Internet for the last three months on average, 94.4% respondents answered: every day or almost every day.*

Više od 1 400 000 osoba koristi internet svaki dan ili skoro svakog dana.

*More than 1 400 000 people use the Internet every day or almost every day.*

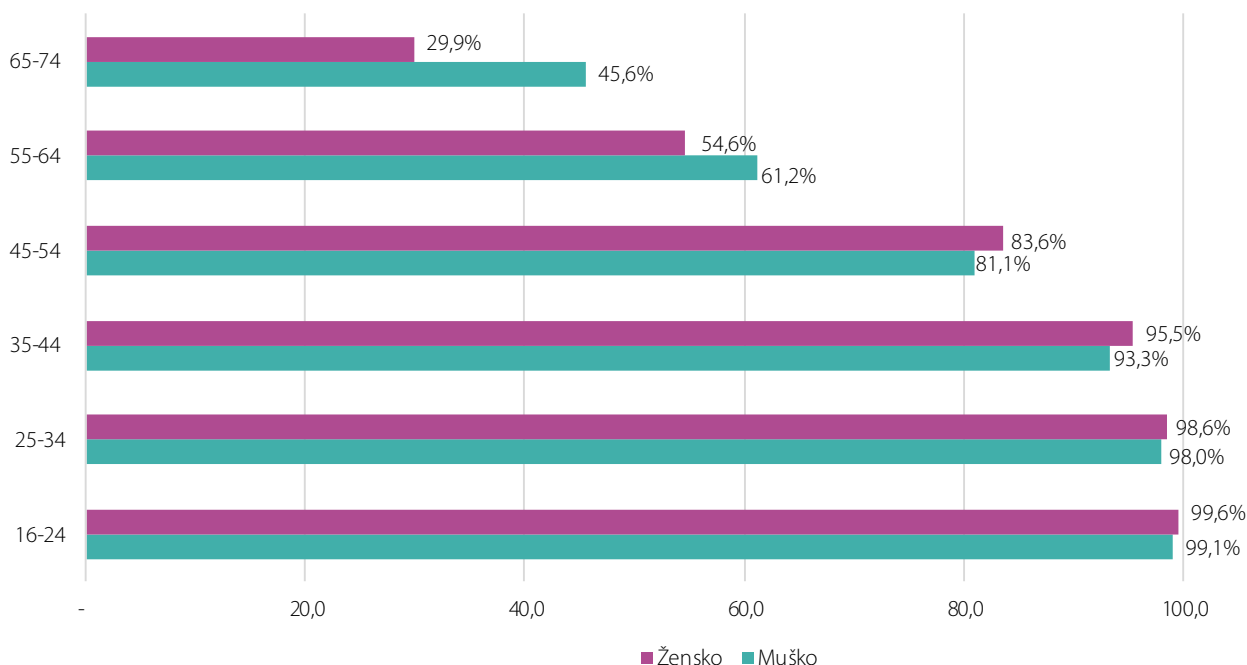
Rezultati istraživanja pokazali su sljedeće:

*The results of the survey showed the following:*

- Internet korisnici starosne dobi od 16 do 24 godine, 99,6% ispitanika koristi internet svaki dan ili skoro svaki dan;
- Internet korisnici starosne dobi od 25 do 54 godine, 96,9% ispitanika koristi internet svaki dan ili skoro svaki dan;
- Internet korisnici starosne dobi od 55 do 74 godine, 88,3% ispitanika koristi internet svaki dan ili skoro svaki dan.

- *Internet users aged 16-24, 99.6% of respondents use the Internet every day or almost every day;*
- *Internet users aged 25-54, 96.9% of respondents use the Internet every day or almost every day;*
- *Internet users aged 55-74, 88.3% of respondents use the Internet every day or almost every day.*

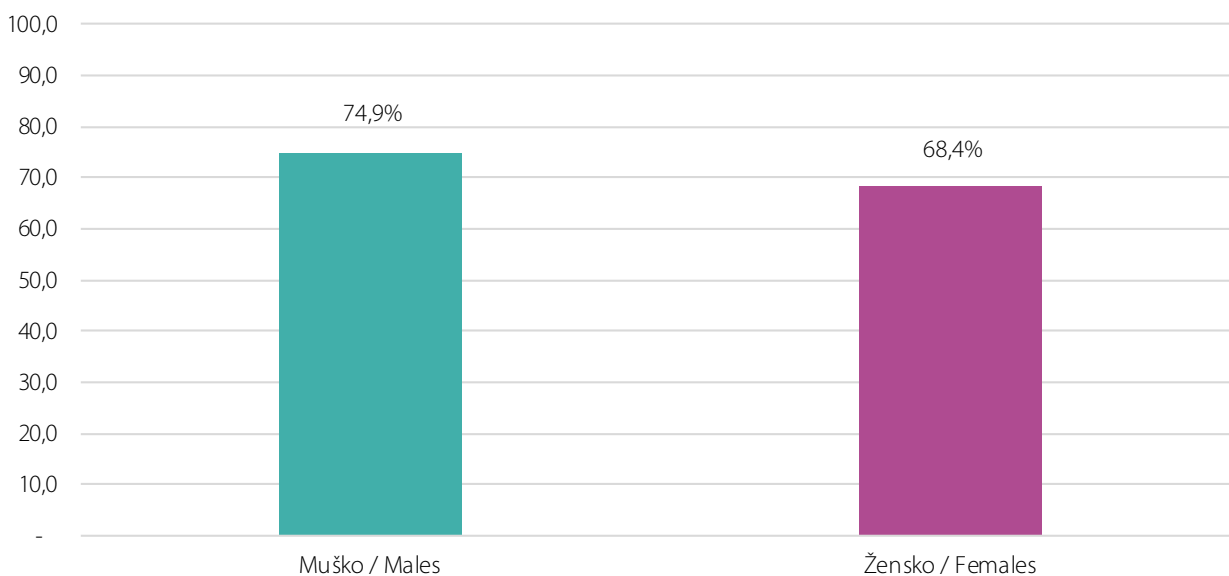
**Grafikon 15. Korištenje interneta (svaki dan ili skoro svaki dan), prema spolu i starosti, Bosna i Hercegovina, 2021.<sup>1</sup>**  
**Graph 15. Internet usage (every day or almost every day), by gender and age, Bosnia and Herzegovina, 2021<sup>1</sup>**



Analiza ispitanika prema spolu pokazuje da internet koristi svaki dan ili skoro svaki dan 74,9% osoba muškog spola, a 68,4% osoba ženskog spola koristilo internet svaki dan ili skoro svaki dan.

An analysis of respondents by gender shows that Internet usage every day or almost every day, 74.9% of males and 68.4% females used the Internet every day or almost every day.

**Grafikon 16. Udio korisnika interneta (svaki dan ili skoro svaki dan) prema spolu, Bosna i Hercegovina, 2021.<sup>2</sup>**  
**Graph 16. The share of Internet users (every day or almost every day) by gender, Bosnia and Herzegovina, 2021<sup>2</sup>**



Ispitanici koji su koristili internet tijekom posljednja tri mjeseca, internet su u velikoj mjeri koristili za telefoniranje preko interneta, video pozivi (92,6%), slanje online poruka preko Skypa, Messengera, WhatsAppa, Vibera, itd. (82,3%), čitanje online novina, časopisa (72,8%), sudjelovanje na društvenim mrežama, kao što su Facebook i Twitter (65,6%).

During the last three months, respondents have largely used the Internet for phone calls over the Internet and video calls (92.6%), using instant messaging, i.e. exchanging messages, for example, via Skype, Messenger, WhatsApp, Viber (82.3%), reading online news sites /newspapers /news magazines (72.8%), participating in social networks like Facebook and Twitter (65.6%).

Pretraživanje informacija o zdravlju (npr. rane, bolesti, ishrana, poboljšanje zdravlja i sl.) (58,8%), pronalaženje informacija o proizvodima i uslugama (67,0%), značajan broj ispitanika koristili su internet za slanje / primanje elektroničke pošte (e-mail) (52,9%).

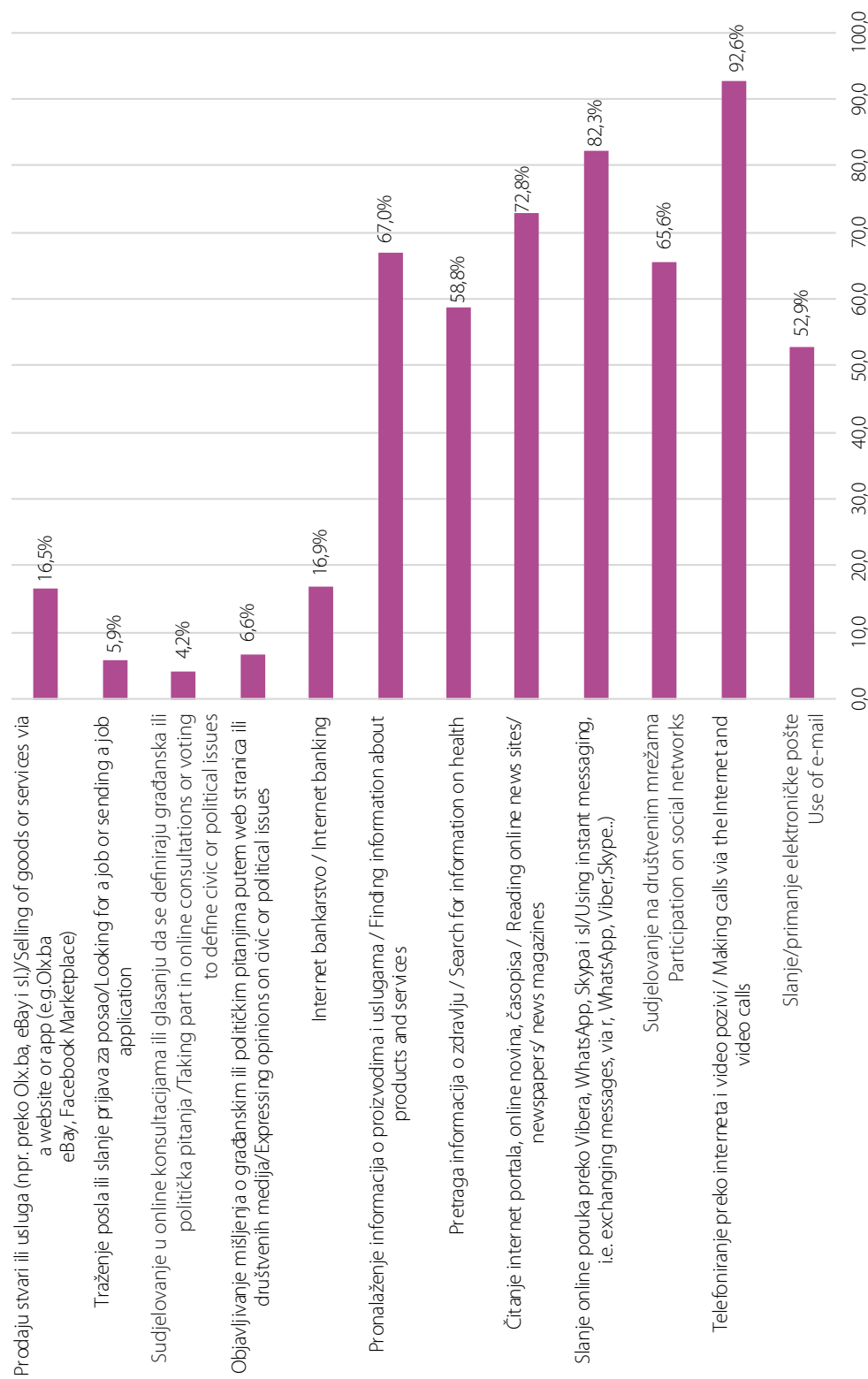
Seeking health-related information (e.g. injuries, diseases, nutrition, improving health, etc.) (58.8%), finding information about products and services (67.0%), a significant number of respondents used the Internet to Sending /receiving e-mails (52.9%).

<sup>2</sup> Podaci se odnose na ukupnu populaciju.

<sup>2</sup> Data refer to the total population.



**Grafikon 17. Tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u postotcima, Bosni i Hercegovini, 2021.<sup>3</sup>**  
**Graph 17. Activities of internet use (for private use) in the last three months, in percentages, Bosnia i Herzegovina 2021<sup>3</sup>**



<sup>3</sup> Podaci se odnose na osobe koje koriste internet u posljednja 3 mjeseca.  
<sup>3</sup> The data refers to persons who use the Internet in the last 3 months.

Internet populacija od 65 do 74 godine najčešće je koristi internet za telefoniranje preko interneta i video poziva i to sa 96,4%.

Internet populacija od 16 do 24 godine najčešće je koristila internet za sudjelovanje na društvenim mrežama 89,0%.

Slanje online poruka preko Skypa, Messengera, WhatsAppa, Vibera i sl. najviše je koristila internet populacija od 65 do 74 godine, 87,2%.

Usluge internet bankarstva najviše koristi populacija od 45 do 54 godine i on iznosi 21,7%.

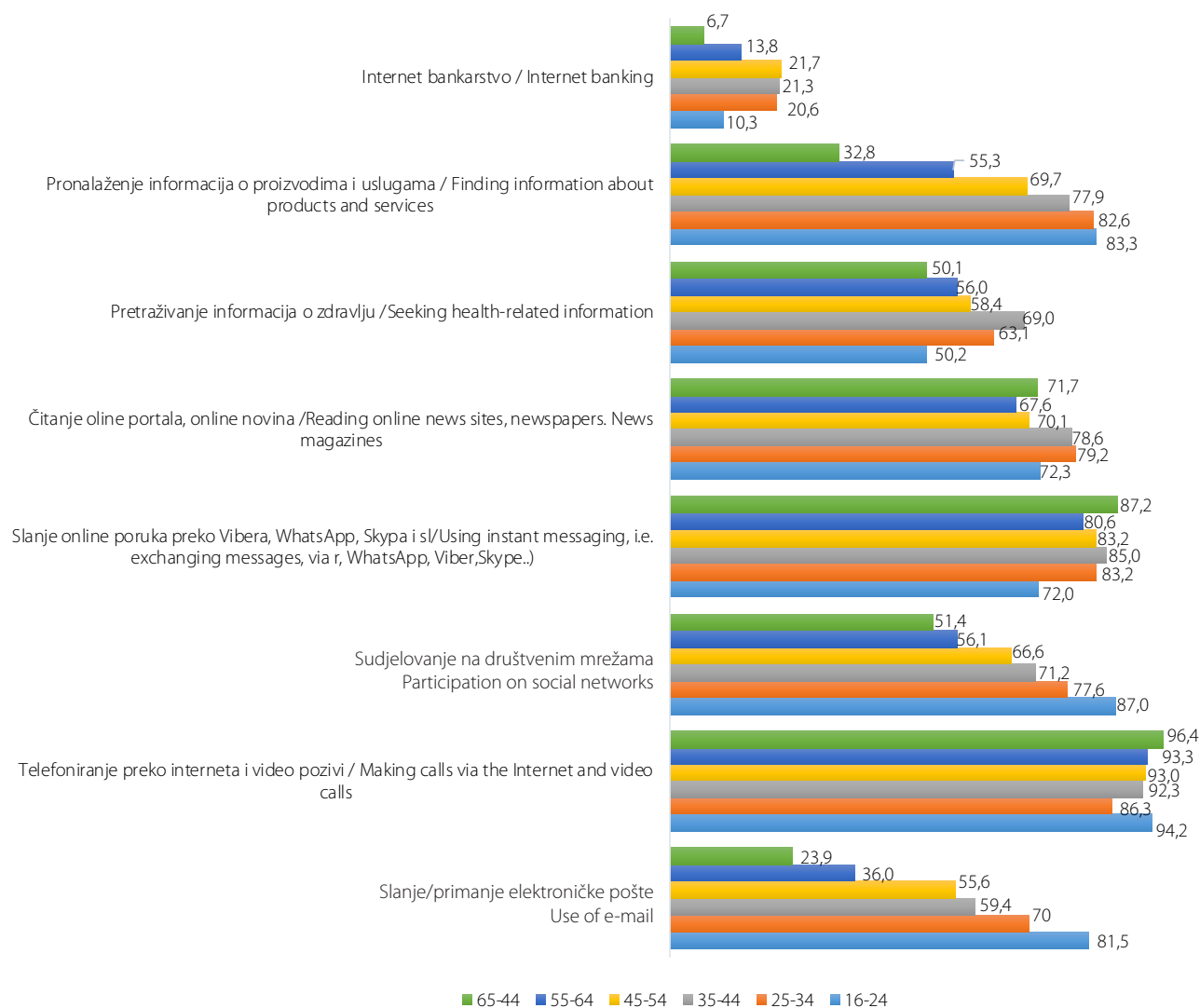
The Internet population of 65 to 74 years is the most common use of the Internet for making calls and internet video calls with 96.4%.

Internet population aged 16 to 24, most often used the Internet to participate in social networks 89.0%.

Using instant messaging, i.e. exchanging messages, for example, via Skype, Messenger, WhatsApp, Viber was most used by the Internet population of 65 to 74 years, 87.2%.

Internet banking services are mostly used by the population of 45- 54 and it is 21.7%.

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



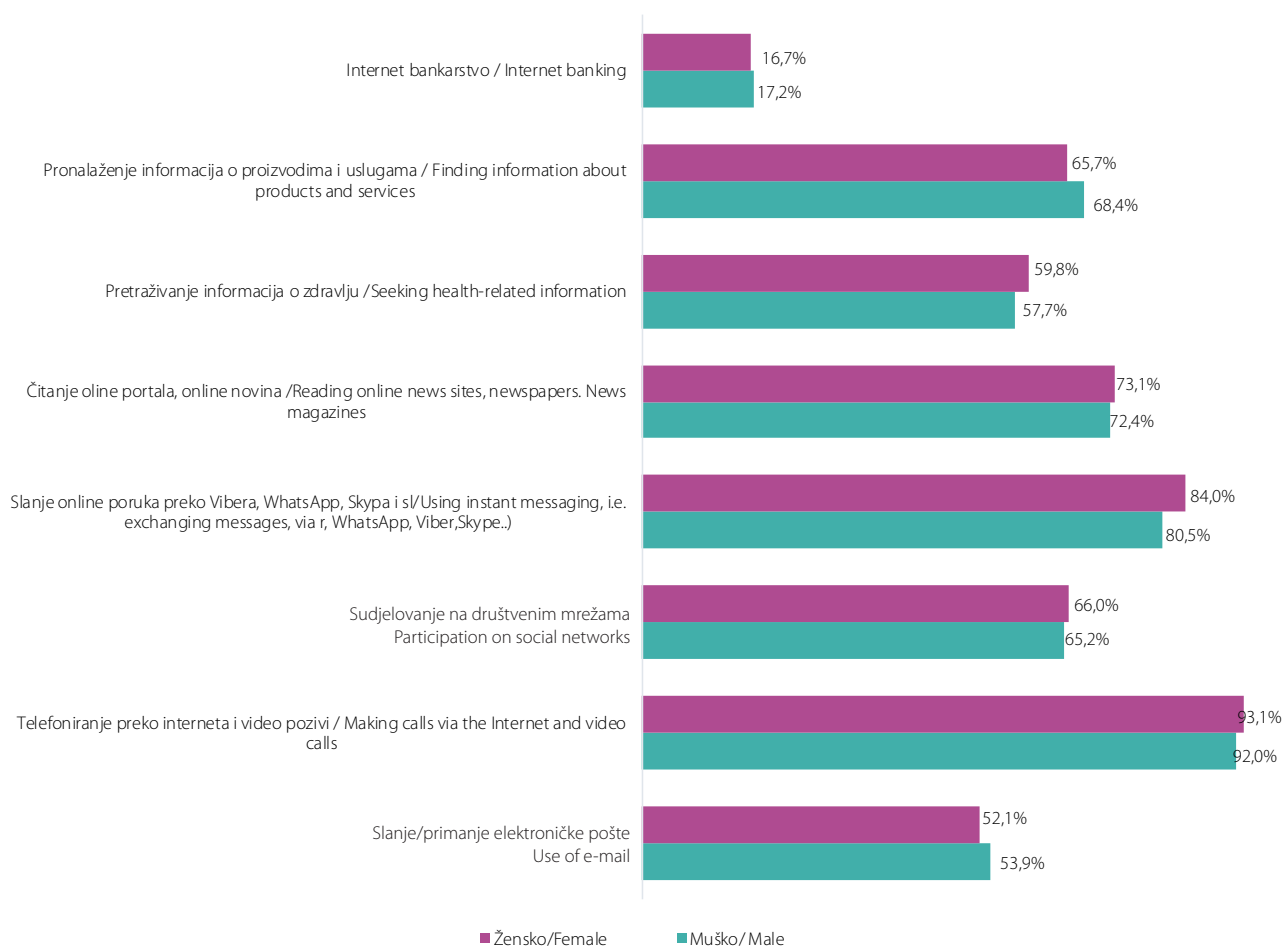
<sup>4</sup> Podaci se odnose na osobe koje koriste internet u posljednja 3 mjeseca.

<sup>4</sup> The data refers to persons who use the Internet in the last 3 months.

Analiza ispitanika prema spolu pokazalo da je 92,0% osoba muškog spola, a 93,1% ženskog spola internet populacije je koristilo internet za telefoniranje preko interneta i video pozive, dok je 80,5% ispitanika muškog spola a 84,0% ženskog spola koristili internet za slanje online poruka preko Skypa, Messengera, WhatsAppa, Vibera, itd.

*The analysis of respondents by gender showed that 92.0% of males and 93.1% of females of the Internet population making calls (including video calls) over the internet, while 80.5% of respondents of males and 84.0% 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, 2021<sup>5</sup>**  
**Graph 19. The most common types of internet use (for private use) in the last three months, by gender, 2021<sup>5</sup>**



<sup>5</sup> Podaci se odnose na osobe koje koriste internet u posljednja 3 mjeseca.

<sup>5</sup> The data refers to persons who use the Internet in the last 3 months.

## Javna uprava

Istraživanje pokazuje da 21,6% 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 18,3% internet populacije koristilo internet za dobijanje informacija sa web stranica javnih institucija, a 11,6% internet populacije je slalo putem interneta popunjene obrasce javnoj upravi.

Internet populacija starosne dobi od 25 do 34 godine je najviše koristila usluge javne uprave, 32,0%.

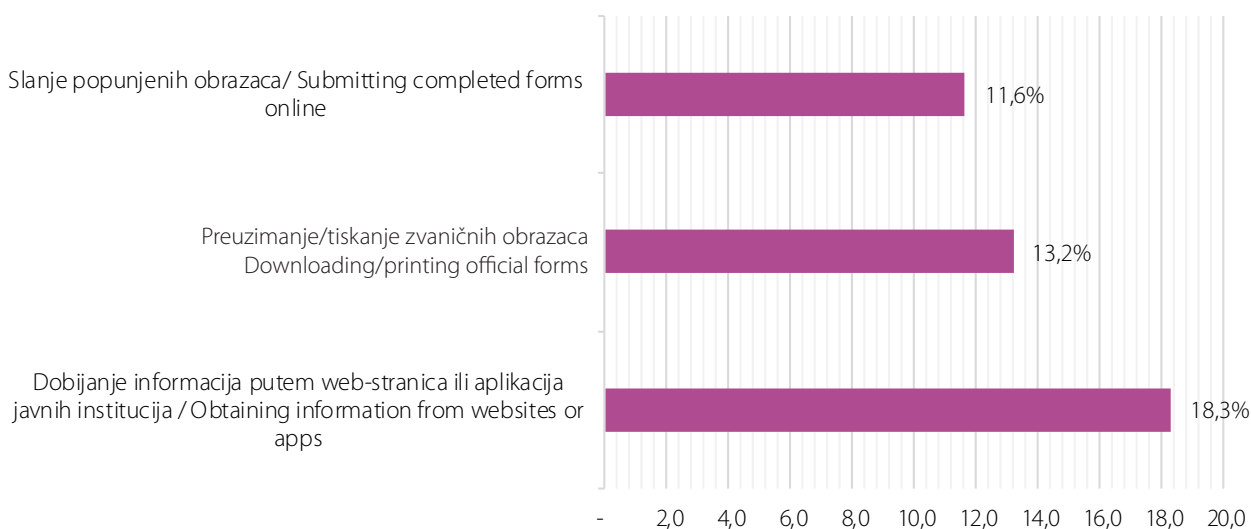
## E-government

The survey shows that 21.6% of respondents who use the Internet for private purposes in the last 12 months, used electronic government services (e-government).

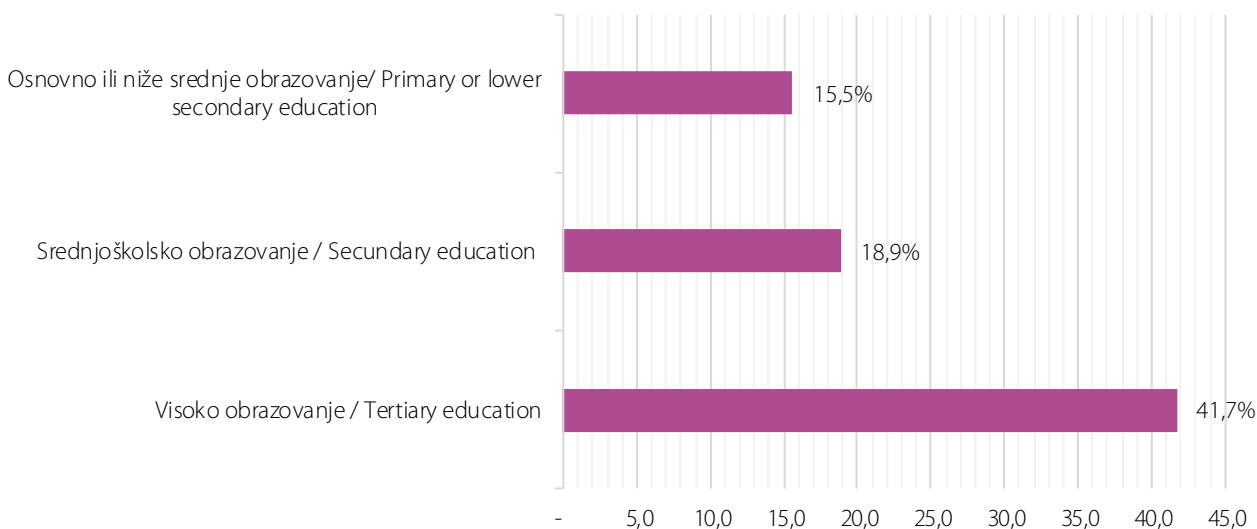
The survey also showed that 18.3% of the internet population used the Internet to obtain information from the public institution's website, and 11.6% of the internet population sent via Internet filled forms to the public administration.

The Internet population aged 25-34 was mostly used by public administration services, 32.0%.

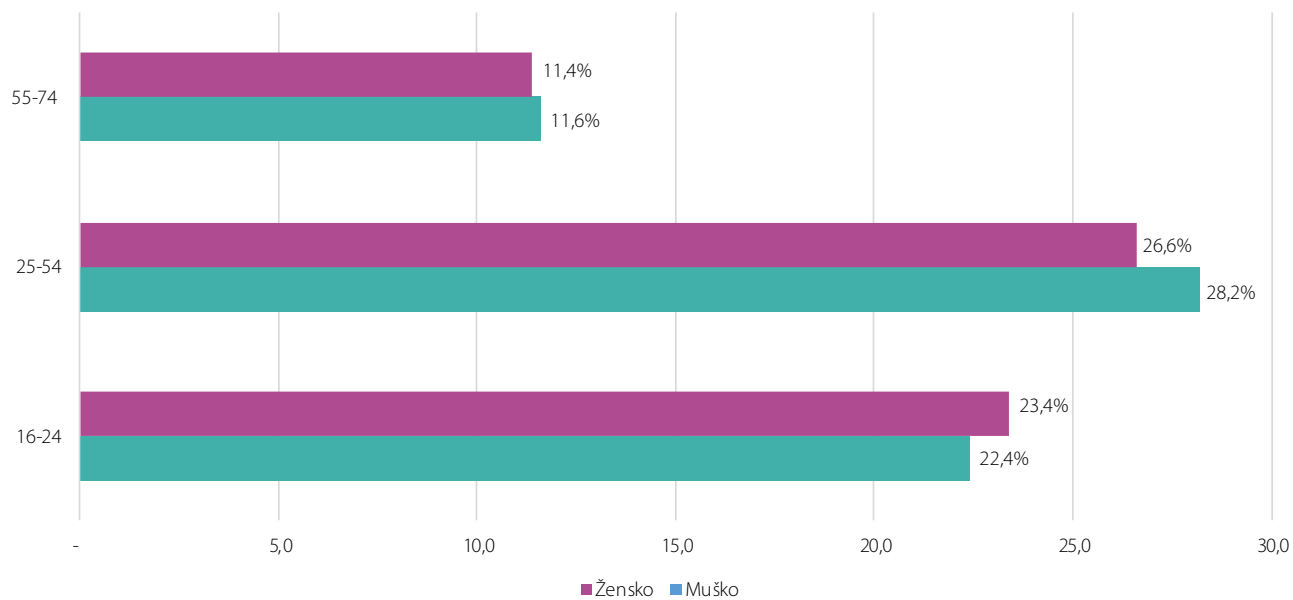
**Grafikon 20. Za koju ste od sljedećih usluga javne uprave koristili internet**  
**Graph 20. For which of the following public administration services did you use the Internet?**



**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<sup>6</sup>

Kada je riječ o vremenskom okviru u kojem su korisnici interneta kupovali/naručivali robu ili usluge putem interneta, 27,0% internet korisnika obavilo je kupovinu/narudžbu u posljednja tri mjeseca, 12,0% prije više od tri mjeseca (manje od 1 godine), a 8,0% prije više od godinu dana.

Korisnici interneta koji nikad nisu kupovali ili naručivali robu ili usluge putem interneta je 53,0%.

Broj osoba koje su kupile / naručile robu ili usluge putem interneta u posljednjih 12 mjeseci bilo je 39,1%, što je porast od 1,5% u odnosu na 2020. godinu.

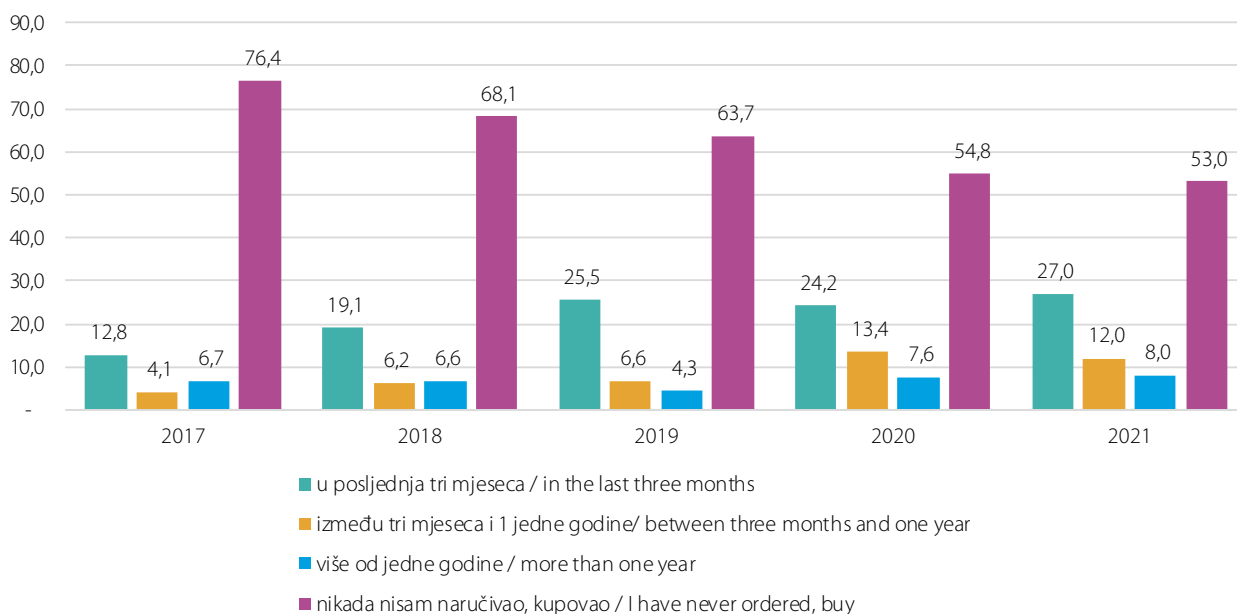
## e-commerce<sup>6</sup>

As for the time frame in which the internet users bought/ordered goods or services over the Internet, 27.0% of users conducted a purchase/order in the last three months, 12.0% between 3 months and a year ago, and 8.0% more than a year ago.

The Internet users who never bought or ordered goods or services over the Internet is 53.0%.

The number of persons who bought / ordered goods or services via the Internet in the last 12 months was 39.1%, which is an increase of 1.5% compared to 2020.

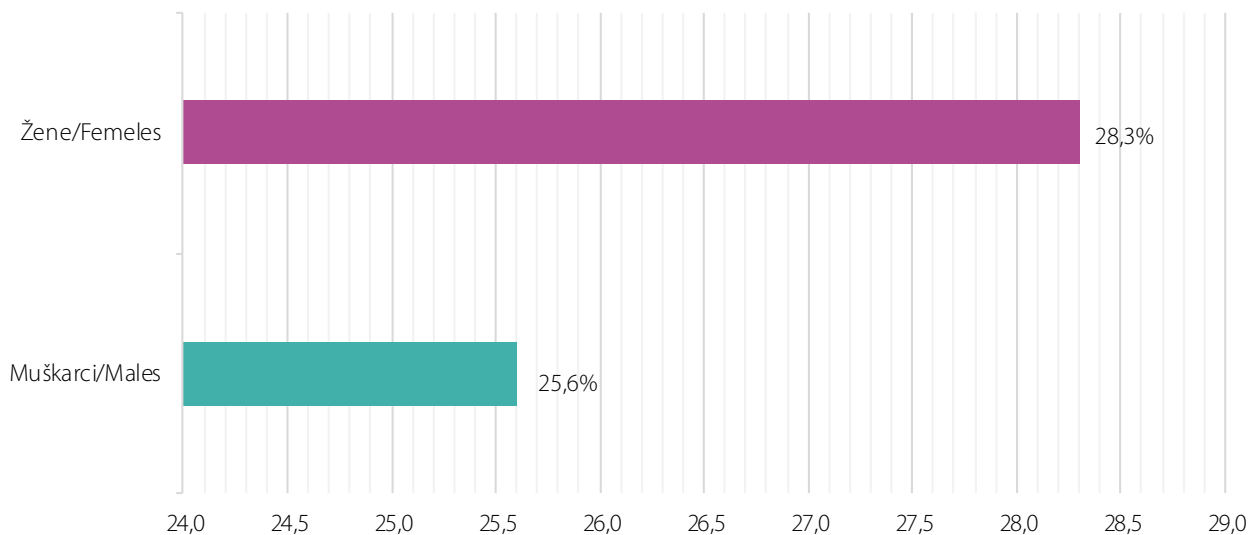
**Grafikon 23. Posljednji put (u privatne svrhe) kupili/naručili robu ili usluge putem interneta u postotcima**  
**Graph 23. Last time (for private purposes) they bought / ordered goods or services via the Internet in percent**



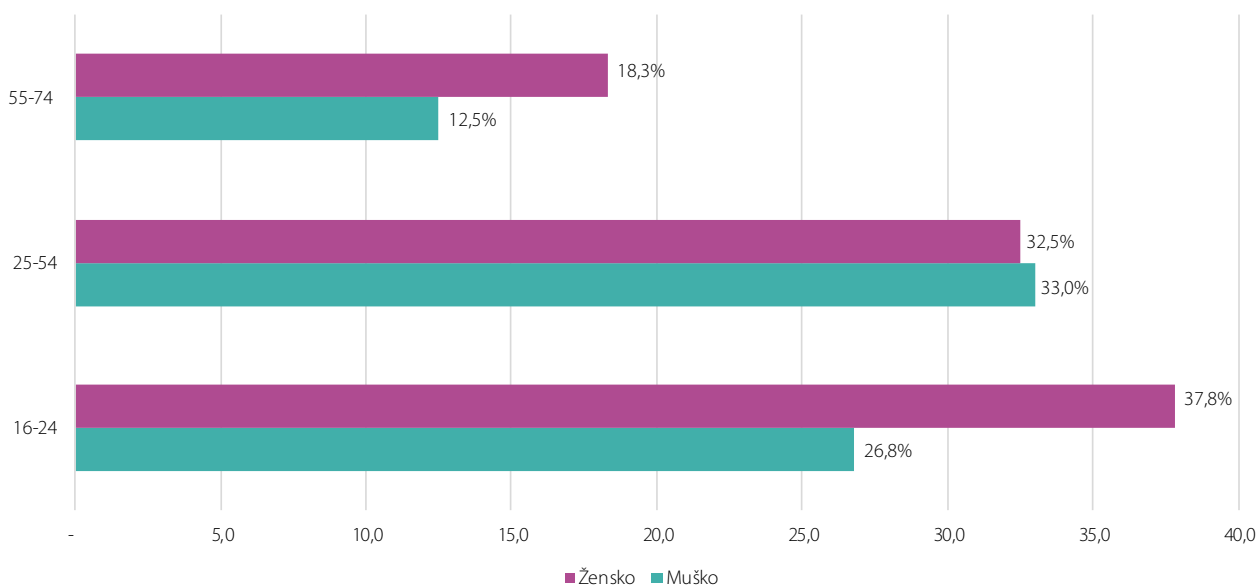
<sup>6</sup> Podaci se odnose na osobe koje su koristile internet posljednjih 12 mjeseci.

<sup>6</sup> 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, 2021.**  
**Graph 24. Bought /ordered goods or services online in the last three months (for private purposes), by gender, 2021**

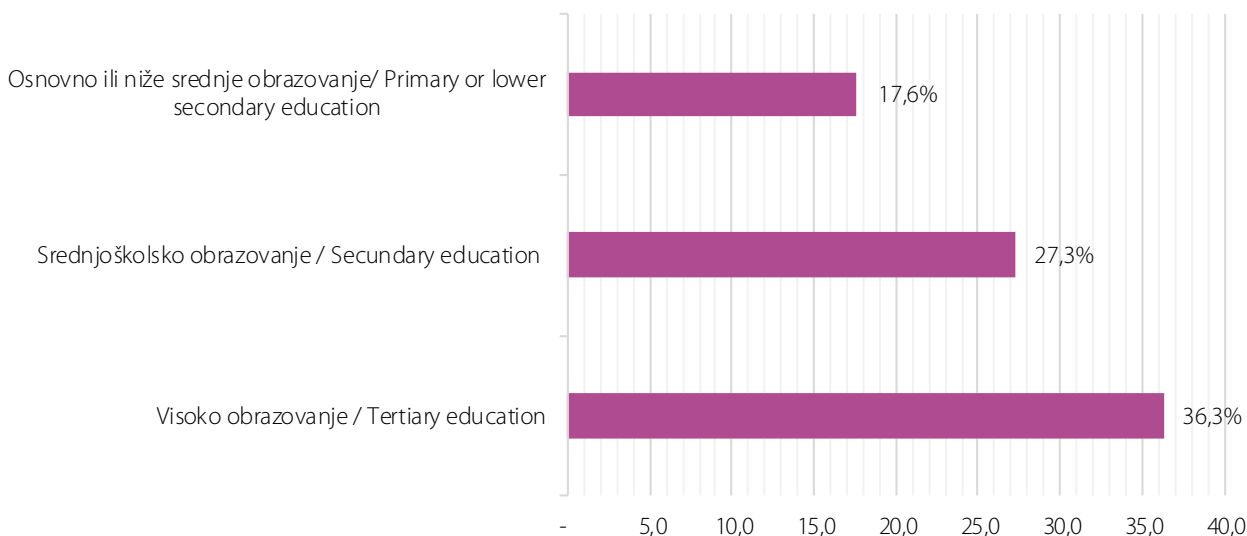


**Grafikon 25. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema spolu i starosti, 2021.**  
**Graph 25. Bought /ordered goods or services online in the last three months (for private purposes), by sex and age, 2021**



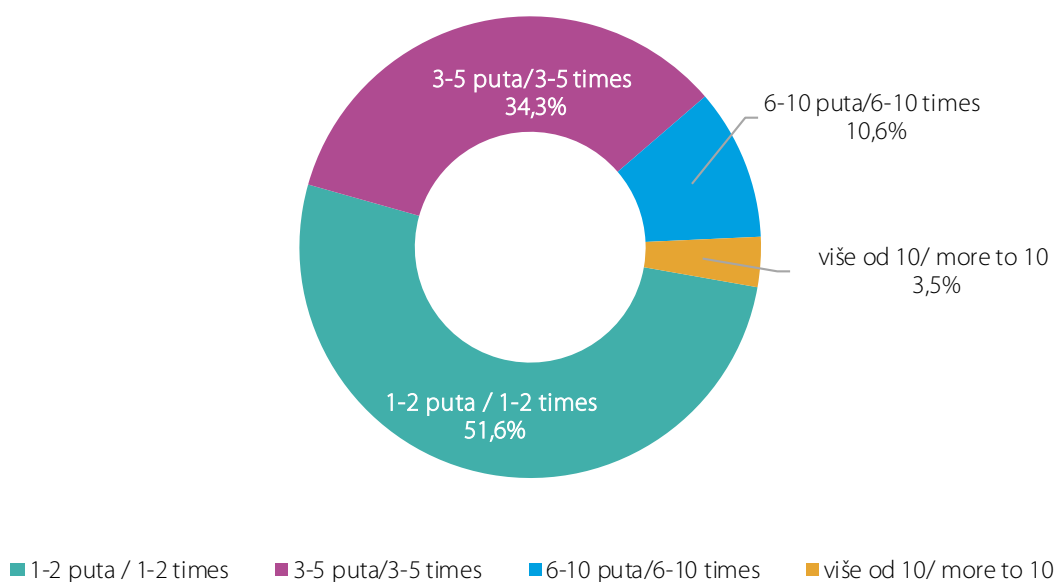
**Grafikon 26. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema razini obrazovanja, 2021.**

**Graph 26. Bought / ordered goods or services online in the last three months (for private purposes), by education level, 2021**



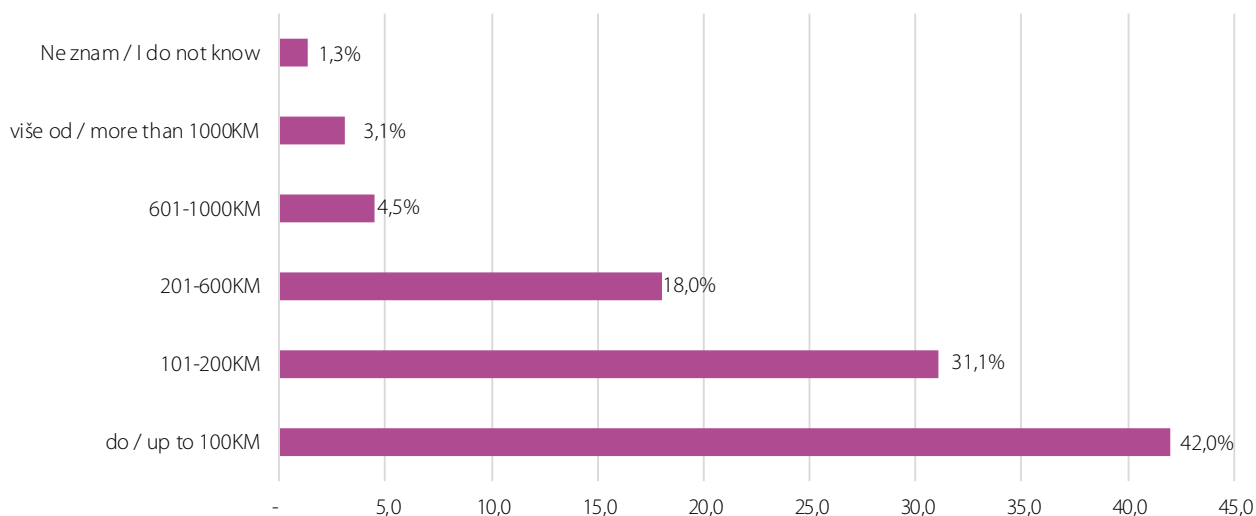
**Grafikon 27. Koliko često ste kupovali/naručivali robu ili usluge putem interneta u privatne svrhe u posljednja 3 mjeseca**

**Graph 27. How often have you purchased / ordered goods or services over the Internet for private purposes in the last 3 months**





**Grafikon 28. Novčani iznos kupljene/naručene robe ili usluge (pojedinci koji su kupovali zadnja 3 mjeseca)**  
**Graph 28. Amount purchased / ordered goods or services (individuals who bought the last 3 months)**



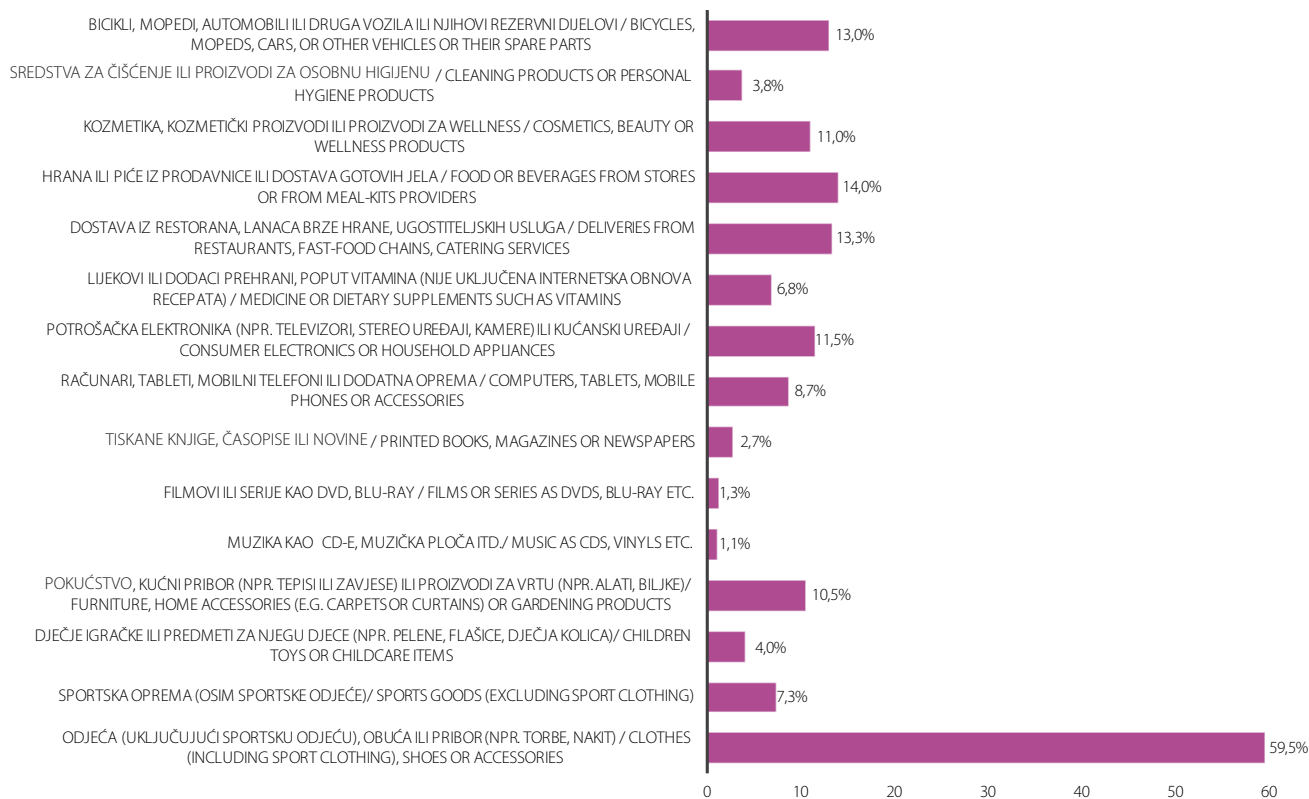
Pojedinci su najčešće naručivali proizvode ili usluge putem interneta u posljednja 3 mjeseca:

- Odjeća (uključujući sportsku odjeću), obuća ili pribor (npr. torbe, nakit) 59,9%;
- Dostava iz restorana, lanaca brze hrane, ugostiteljskih usluga 13,3%;
- Potrošačka elektronika (npr. televizori, stereo uređaji, kamere) ili kućanski uređaji (npr. perilica rublja) 11,5%;
- Hrana ili piće iz prodavnice ili dostava gotovih jela 14,0%;

*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) 59,9%;*
- *Deliveries from restaurants, fast-food chains, catering services 13.3%;*
- *Consumer electronics (e.g. TV-sets, stereos, cameras) or household appliances (e.g. washing machines) 11.5%;*
- *Food or beverages from stores or from meal-kits provider 14.0%.*

**Grafikon 29. Koju ste vrstu robe ili usluga kupili ili naručili putem interneta u posljednja 3 mjeseca, u privatne svrhe?<sup>7</sup>**  
**Graph 29. What types of goods or services did you buy or order over the Internet for private use in the last 3 months?<sup>7</sup>**



Analiza ispitanika prema spolu pokazalo da je 54,2% osoba muškog spola, a 64,1% ženskog spola kupovalo Odjeća (uključujući sportsku odjeću), obuća ili pribor (npr. torbe, nakit).

*The analysis of respondents by gender showed that 54.2% of males and 64.1% 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 12,8% osoba muškog spola, a 15,1% ženskog spola.

*Food or beverages from stores or from meal-kits providers over the Internet was ordered by 12.8% of males and 15.1% of females.*

Bicikli, mopedi, automobili ili druga vozila ili njihovi rezervni dijelovi preko interneta naručivalo je 16,7% osoba muškog spola, a 9,7% ženskog spola.

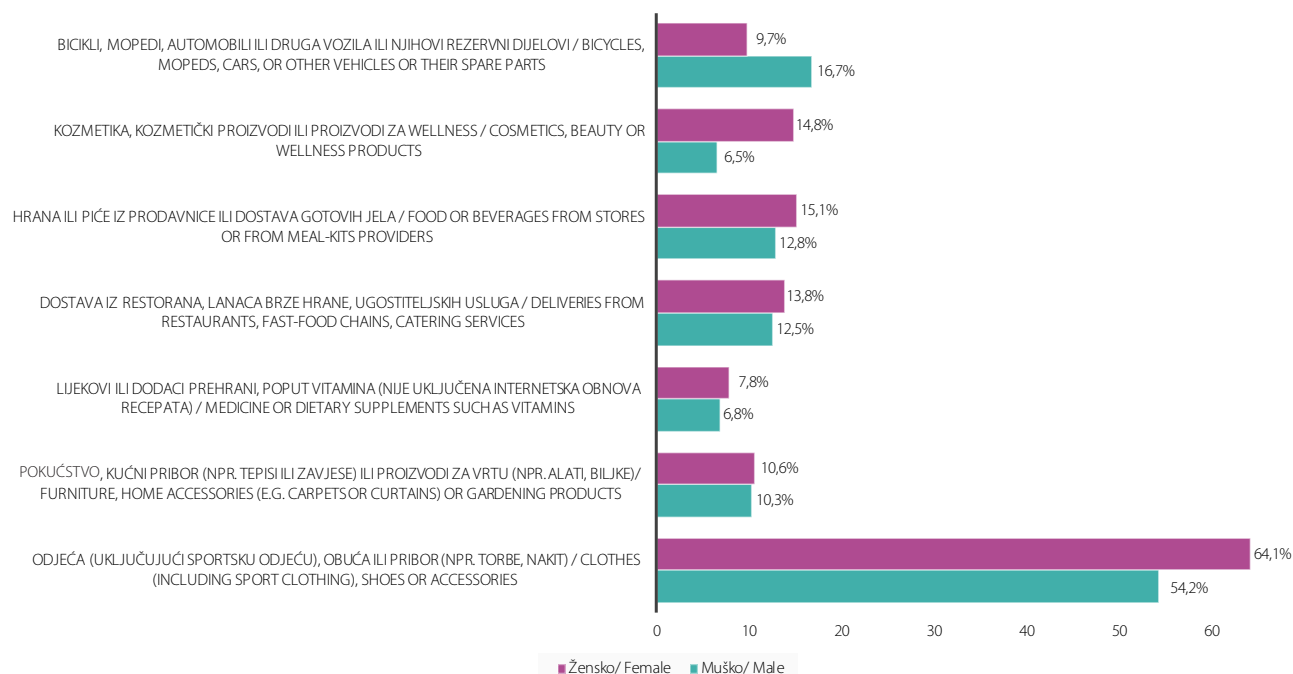
*Bicycles, mopeds, cars or other vehicles or their spare parts were ordered online by 16.7% of males and 9.7% of females.*

<sup>7</sup> Podaci se odnose na pojedince koji putem interneta kupovali ili naručivali u posljednjih 3 mjeseca.

<sup>7</sup> Data refer to individuals who have purchased or ordered online in the last 3 months.

**Grafikon 30. Najčešće vrstu robe ili usluga kupili ili naručili putem interneta u posljednja 3 mjeseca, u privatne svrhe, po spolu?<sup>8</sup>**

**Graph 30. 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<sup>8</sup>**



Istraživanje pokazuje da 53,0% 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 53.0% of respondents who use the Internet for private purposes in the last 12 months, never bought or ordered over the internet.*

Na pitanje "Koји su razlozi što niste kupili/poručili robu ili usluge u privatne svrhe, putem interneta, u posljednja 3 mjeseca?" Ispitanici su odgovorili: Više volim osobno kupovati, volim pogledati proizvod, vjernost radnjama, moć navike, 70,8%;

*To the question "What were the reasons for not buying anything via a website or app in the last 3 months?," Respondents answered:*

*Prefer to shop in person, like to see product, loyalty to shops, force of habit, 70.8%;*

Nije zainteresiran, 15,1%;

*Not interested, 15.1%;*

Brige oko sigurnosti ili privatnosti plaćanja, 13,2%  
 Nije bilo potrebe za kupovinom putem interneta u posljednja 3 mjeseca, 13,1%.

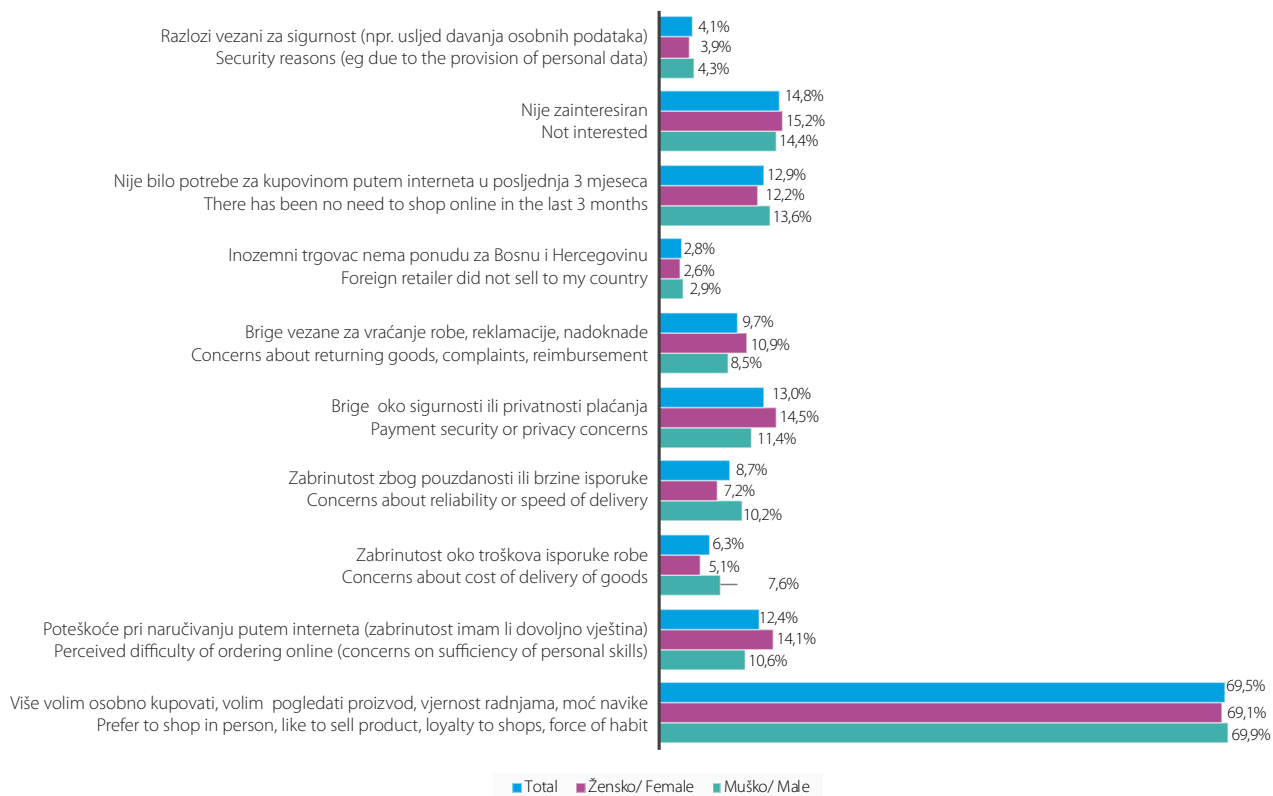
*Payment security or privacy concerns, 13.2%;*  
*There was no need to buy online in the last 3 months, 13.1%.*

<sup>8</sup> Podaci se odnose na pojedince koji putem interneta kupovali ili naručivali u posljednjih 3 mjeseca.

<sup>8</sup> Data refer to individuals who have purchased or ordered online in the last 3 months.

**Grafikon 31. Koji su razlozi što niste kupili/poručili robu ili usluge u privatne svrhe, putem interneta, u posljednja 3 mjeseca, po spolu?<sup>9</sup>**

**Graph 31. What were the reasons for not buying anything via a website or app in the last 3 months, by gender<sup>9</sup>**



<sup>9</sup> Podaci se odnose na pojedince koji nisu putem interneta kupovali ili naručivali u posljednjih 3 mjeseca.

<sup>9</sup> The data refer to individuals who have not bought or ordered online in the last 3 months.

## E-VJEŠTINE<sup>10</sup>

Poboljšanje digitalne pismenosti, znanja i uključivosti jedno je od sedam prioritarnih područja Digitalne agende za Europu, jedne od ključnih inicijativa Europske komisije u okviru Strategije Europa 2020 - razvojne strategije za ovu deceniju.

Pitanja u modulu e-vještine se odnose na aktivnosti koje se obavljaju u obrazovne, profesionalne ili privatne svrhe, putem bilo kojeg uređaja (npr. desktop računar, laptop, tablet, mobilni ili pametni telefon, pametni uređaji itd.). Na pitanje "Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca? Rezultati ankete pokazali su sljedeće:

Kopiranje ili pomjeranje fajlova (npr. dokumenata, podataka, slika, videa) između foldera (npr. koristeći Windows Explorer) ili uređaja (npr. putem e maila, Messenger-a, WhatsApp-a, Vibera USB-a, kabla) ili na claudu 73,1%;

Preuzimanje ili instaliranje softvera ili aplikacija 41,2%;

Promjena podešavanja softvera, aplikacije ili uređaja (npr. podešavanje jezika, boja, kontrasta, veličine teksta, traka s alatima / meni) 21,5%.

## E-SKILLS<sup>10</sup>

Improving digital literacy, knowledge and inclusion is one of the seven priority areas of the Digital Agenda for Europe, one of the European Commission's key initiatives under the Europe 2020 Strategy - a development strategy for this decade.

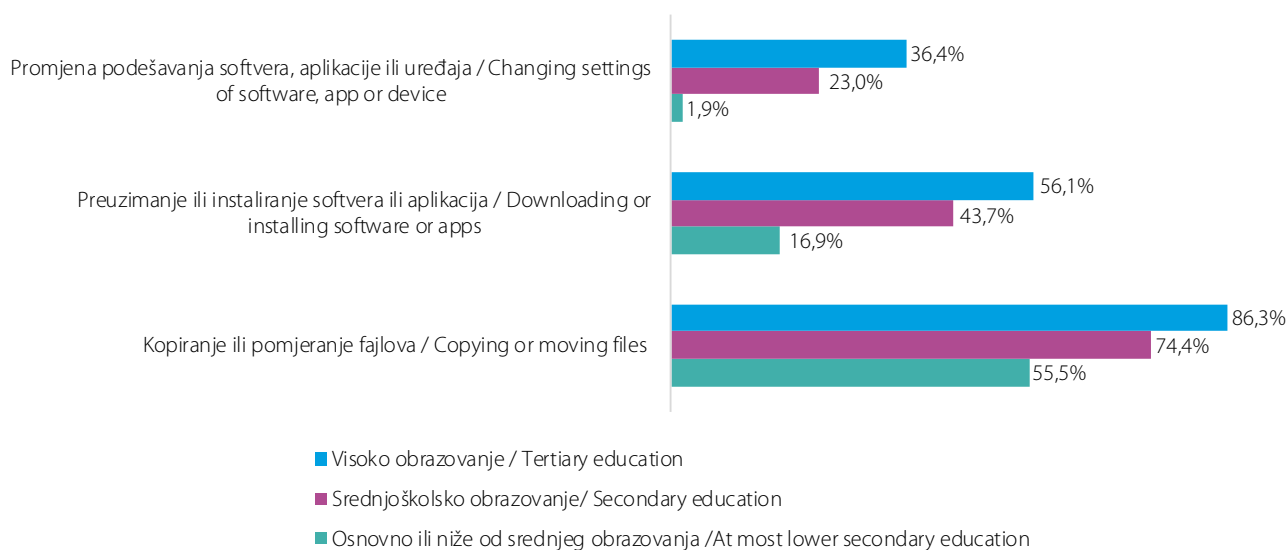
The questions in the e-skills module concern activities done for educational, professional, or private purposes, via any device (e.g. desktop computer, laptop, tablet, mobile or smartphone, smart devices, etc. On the question: "Which of the following activities have you carried out in the last 3 months?" the results of the survey showed the following:

Copying or moving files (e.g. documents, data, images, video) between folders (for example using Windows Explorer), devices (e.g. via e-mail, Messenger, WhatsApp, Viber, USB, cable) or on the cloud 73.1%;

Downloading or installing software or apps 41.2%;

Changing settings of software, app or device (e.g. adjusting language, colours, contrast, text size, toolbars/menu), 21.5%.

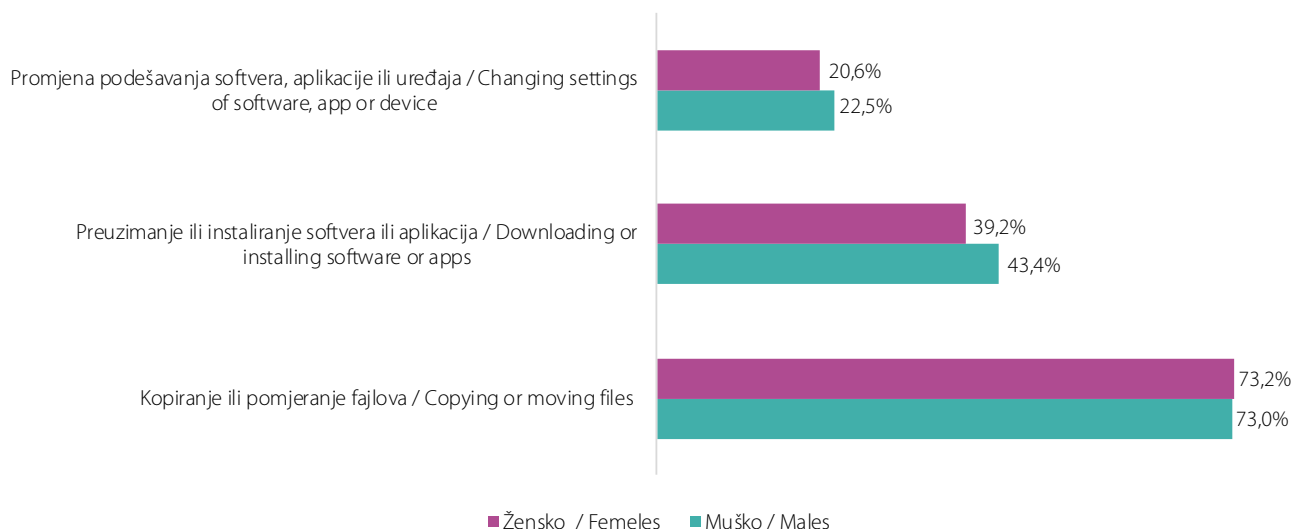
**Grafikon 32. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema razini obrazovanja, 2021?**  
**Graph 32. Which of the following activities have you carried out in the last 3 months, by education level, 2021?**



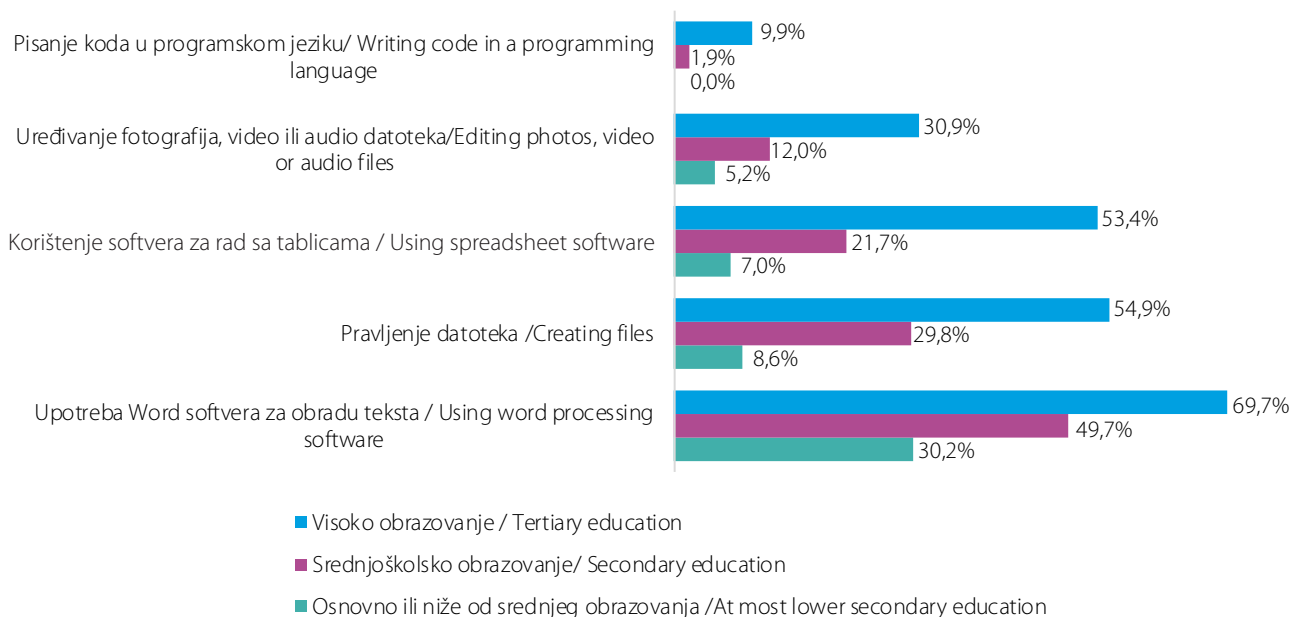
<sup>10</sup> Podaci se odnose na pojedince koji koriste internet u zadnjih 3 mjeseci.

<sup>10</sup> Data refer to individuals who use the internet in the last three months.

**Grafikon 33. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema spolu, 2021?**  
**Graph 33. Which of the following activities have you carried out in the last 3 months, by gender, 2021?**



**Grafikon 34. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema razini obrazovanja, 2021?**  
**Graph 34. Which of the following activities have you carried out in the last 3 months, by education level, 2021?**



Koje ste od sljedećih aktivnosti poduzimali u posljednja 3 mjeseca? Na ponuđene odgovore pojedinaca su koristili:

Word softvera za obradu teksta, 49,5%;  
 Pravljenje datoteka (npr. dokumenata, slika, video zapisa) koji uključuju nekoliko elemenata, npr. tekst, sliku, tablicu, grafikon, animaciju, zvuk, 30,0%;  
 Korištenje softvera za rad sa tablicama, 23,8%;

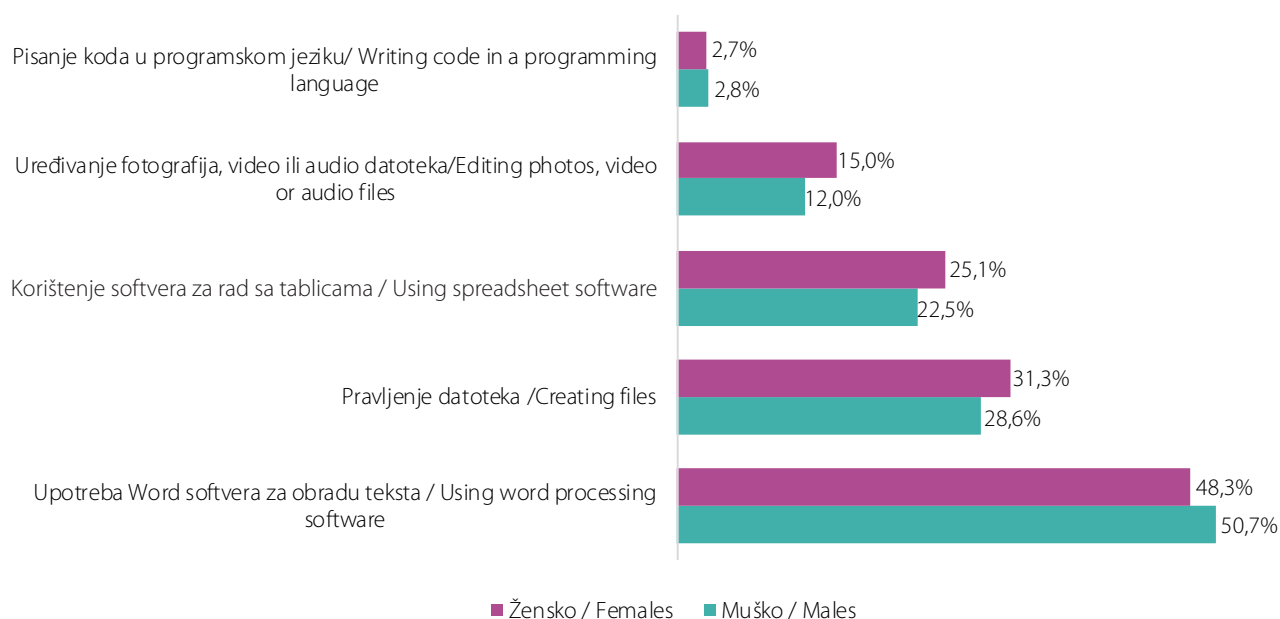
Which of the following software-related activities have you carried out in the last 3 months? To the answers offered, individuals responded:

Using word processing software, 49,5%.  
 Creating files (e.g. document, image, video) incorporating several elements, e.g. text, picture, table, chart, animation, sound, 30,0%.  
 Using spreadsheet software, 23,8%.

Korištenje naprednih funkcija softvera za rad sa tablicama (funkcije, formule, upotreba makroa, Visual Basic-a) 31,2% ;  
 Uređivanje fotografija, video ili audio datoteka, 13,6% ;  
 Pisanje koda u programskom jeziku, 2,8%.

*Using advanced features of spreadsheet software (functions, formulas, macros, Visual Basic) to organise, analyse, structure or modify data, 31,2%.*  
*Editing photos, video or audio files, 13,6%.*  
*Writing code in a programming language, 2,8%.*

**Grafikon 35. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema spolu, 2021?**  
**Graph 35. Which of the following activities have you carried out in the last 3 months, by gender, 2021?**



**PODUZEĆA**  
***ENTERPRISES***





## Uzorak

Istraživanje o uporabi informacijsko-komunikacijskih tehnologija u poduzećima provedeno je na reprezentativnom uzorku od 2 745 poduzeća na teritoriju Bosne i Hercegovine. Stopa odgovora je 89,40% (2 454 poduzeća).

## Sample

A survey on the use of information and communication technologies in enterprises was conducted on a representative sample of 2.745 enterprises in the territory of Bosnia and Herzegovina. The response rate is 89,40 % (2.454 enterprises).

Neto uzorak	10 do 49 zaposlenih	50 do 249 zaposlenih	250 i više zaposlenih	Ukupno
<i>Net sample</i>	<i>10 to 49 employees</i>	<i>50 to 249 employees</i>	<i>250 and more employees</i>	<i>Total</i>
Proizvodnja <i>Manufacture</i>	398	351	118	825
Opskrba električnom energijom, plinom, parom i vodom; gospodarenje otpadnim vodama / <i>Electricity, gas, steam and electricity supply water; waste management</i>	64	45	20	115
Građevinarstvo <i>Construction</i>	111	98	6	226
Trgovina na veliko i malo <i>Wholesale and retail trade</i>	335	179	46	548
Transport i skladištenje <i>Traffic and storage</i>	78	43	10	134
Usluge smještaja i ishrane <i>Accommodation services and food</i>	66	35	2	99
Informiranje i komunikacije <i>Information and communication</i>	84	42	9	130
Poslovanje nekretninama <i>Real estate</i>	26	11	0	37
Stručne, znanstvene i tehničke djelatnosti / <i>Professional, scientific and technical activities</i>	94	27	2	74
Administrativne i pomoćne uslužne djelatnosti / <i>Administrative and auxiliary service activities</i>	54	24	10	80
Popravak i održavanje računara i komunikacijske opreme / <i>Repair and maintenance of computers and communication equipment</i>	6	1	0	8
<b>Ukupno <i>Total</i></b>	<b>1 316</b>	<b>856</b>	<b>223</b>	<b>2 276</b>
<b>Od čega IKT sektor/ICT sector (u: 26.1-26.4+ 26.8+46.5+ 58.2+61+62+63.1+95.1)</b>	<b>81</b>	<b>29</b>	<b>6</b>	<b>116</b>

**GLAVNI INDIKATORI**  
**Internet u poduzećima**

Rezultati istraživanja o uporabi informacijsko-komunikacijskih tehnologija u poduzećima (IKT-P) u Bosni i Hercegovine, pokazali su sljedeće:

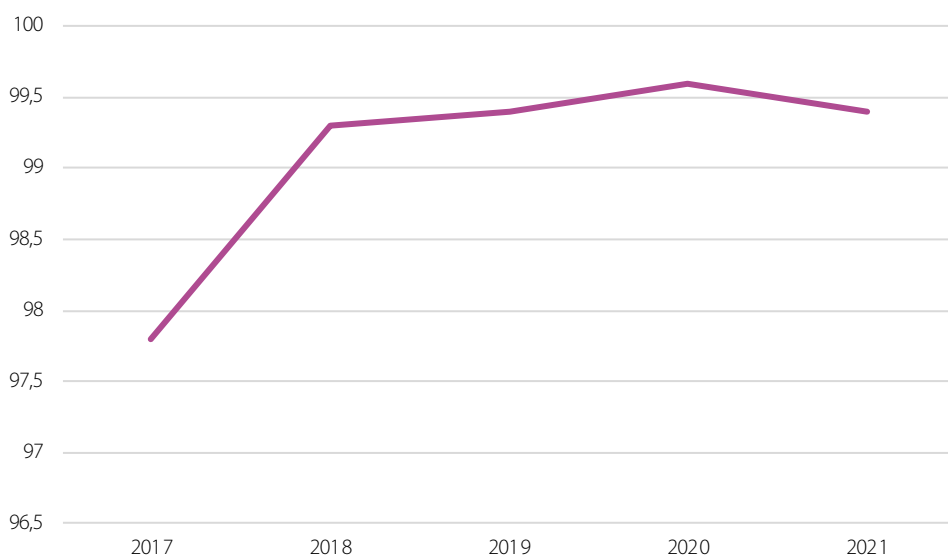
- Da 99,4% poduzeća imaju pristup internetu;
- Od ukupnog broja poduzeća koja imaju pristup internetu, fiksni širokopolasni priključak (npr. ADSL, SDSL, VDSL, kablovske mreže, optičke mreže) posjeduje 98,5% poduzeća.

**MAIN INDICATORS**  
**Internet in enterprises**

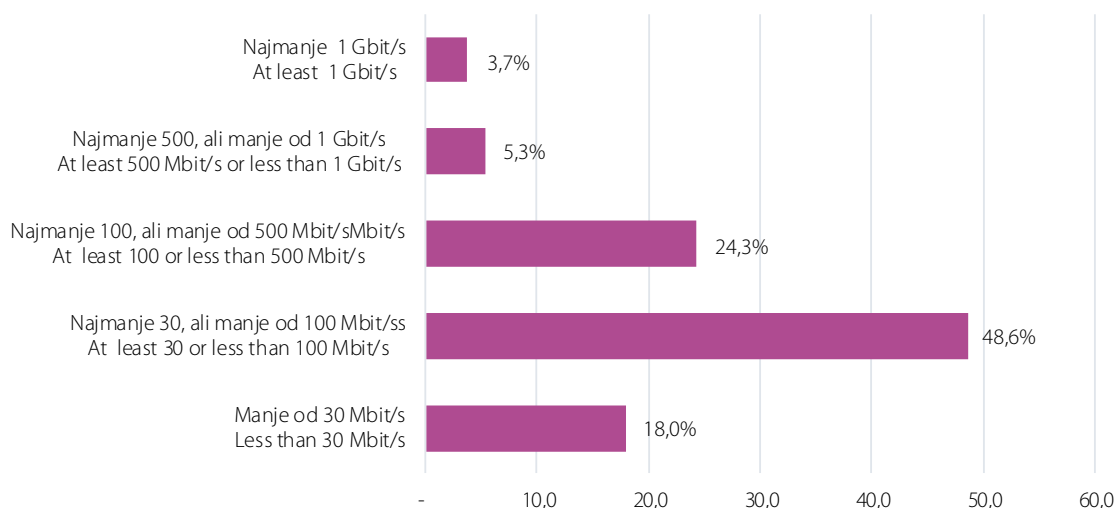
The results of the survey on the use of information and communication technologies in enterprises (ICT-ENT) in Bosnia and Herzegovina have shown the following:

- 99.4% 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 98.5% of enterprises.

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



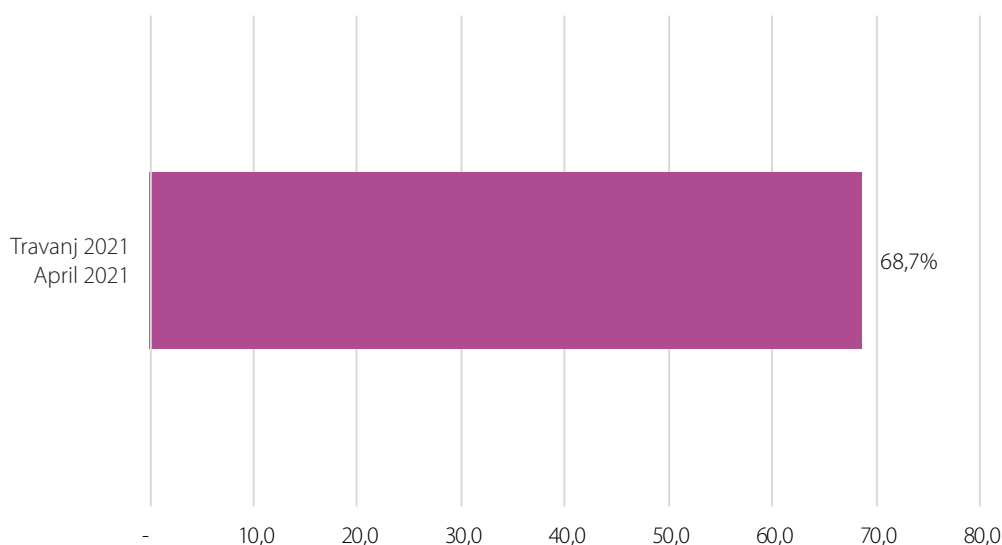
**Grafikon 2. Koja je maksimalna brzina internet konekcije u vašem poduzeću (definirana ugovorom sa internet providerom) 2021? /Graph 2. What is the maximum speed of the Internet connection in your enterprises (defined by agreement with the Internet provider) 2021?**



Rezultati istraživanja pokazuju da 68,7% poduzeća osigurava prijenosne uređaje koji omogućavaju mobilnu internet vezu koristeći mobilne telefonske mreže.

The results of the survey show that 68.7% of enterprises provide portable devices that allow a mobile Internet connection using mobile telephone networks.

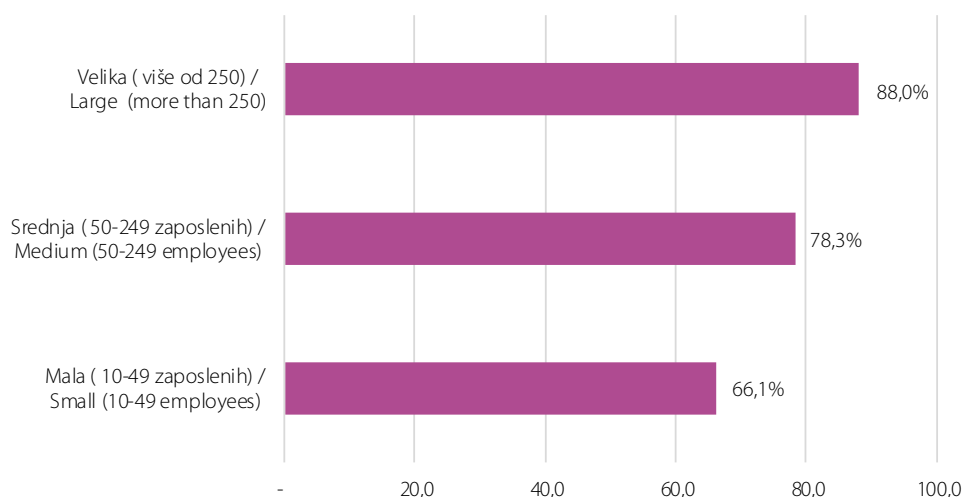
**Grafikon 3. Da li vaše poduzeće osigurava prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže za poslovne potrebe? /Graph 3. Does your enterprise provide portable devices that allow a mobile connection using mobile telephone networks for business purposes?**



Analiza poduzeća prema veličini pokazuje nam da mobilnu internet konekciju uporabom prijenosnih uređaja najviše koriste velika poduzeća (88,8%).

Enterprise analysis by size shows us that the mobile Internet connection using the mobile devices is mostly used by large enterprises (88.8%).

**Grafikon 4. Poduzeća prema veličini, osiguravaju prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže, za poslovne potrebe 2021. /Graph 4. Enterprises by size, provide portable devices that allow a mobile connection to the internet using mobile telephone networks, for business purposes 2021**



### Web stranica

• Web stranicu posjeduje 62,3% poduzeća.

Kada pogledamo strukturu poduzeća prema veličini, dobijamo sljedeće rezultate:

- 88,8% velikih poduzeća posjeduje web stranicu;
- 76,5% srednjih poduzeća posjeduje web stranicu;
- 57,8% malih poduzeća posjeduje web stranicu.

### Website

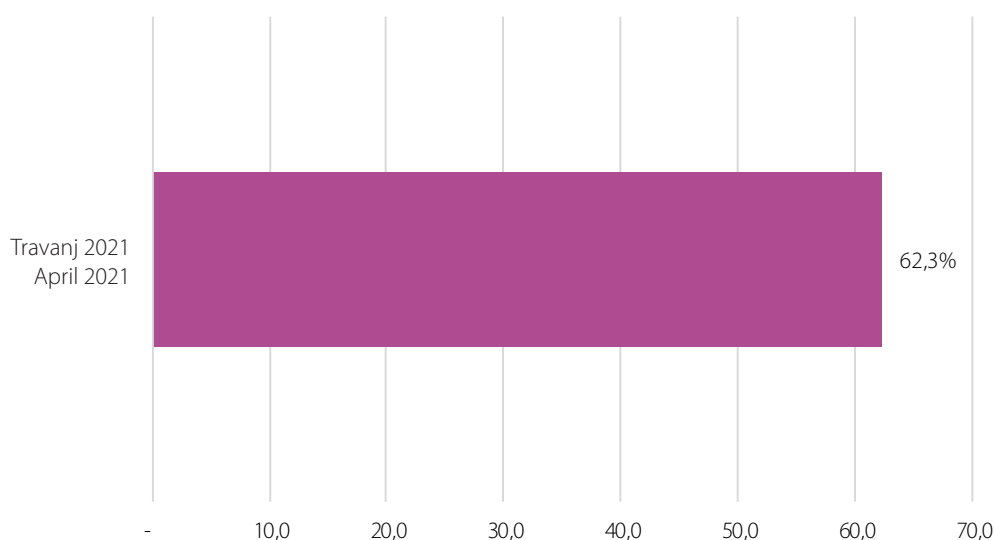
• 62.3% of enterprises had website;

When we look at the structure of enterprises by size, we get the following results:

- 88.8% of large enterprises have a website;
- 76.5% of medium-sized enterprises have a website;
- 57.8% % of small enterprises have a website.

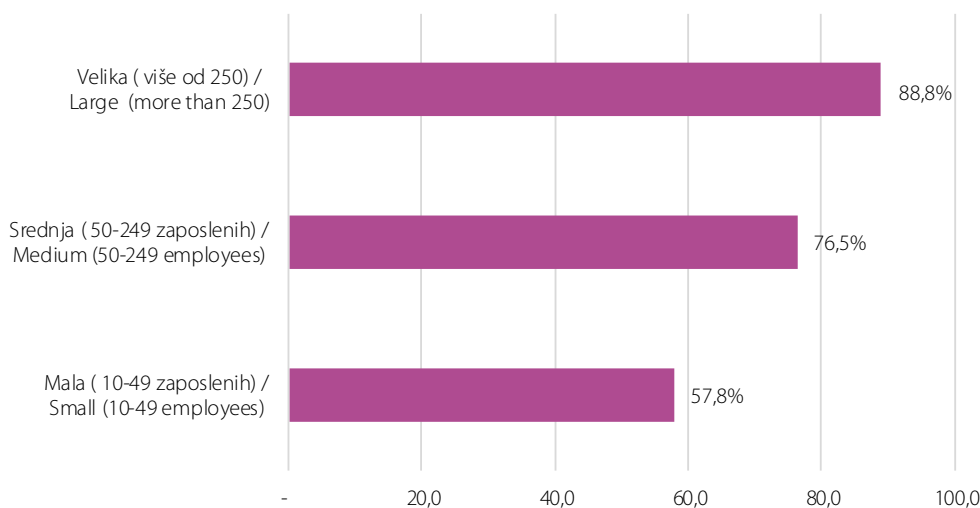
**Grafikon 5. Postotak poduzeća koja imaju web stranicu**

**Graph 5. Percentage of companies that have a website, by enterprise activity**

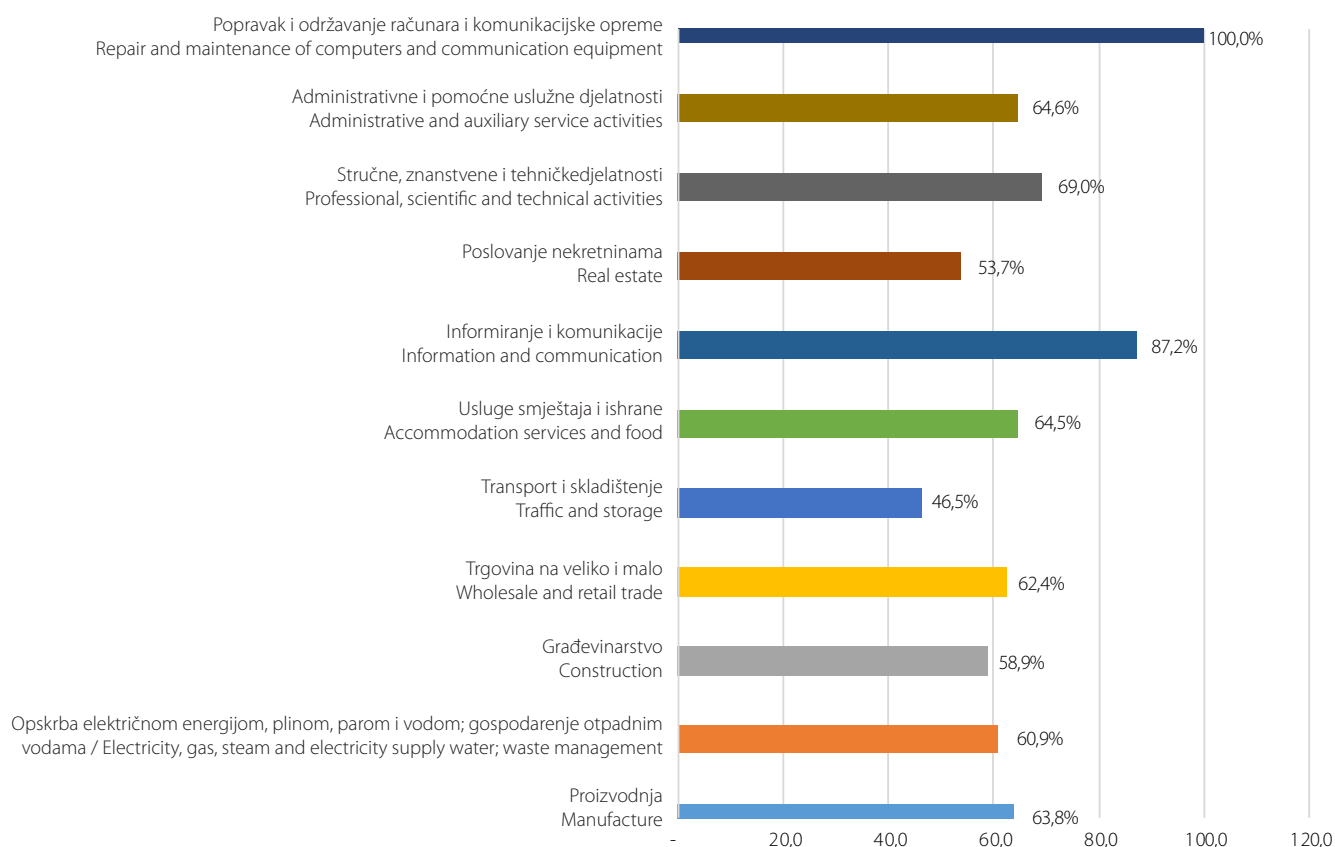


**Grafikon 6. Postotak poduzeća koja imaju web stranicu, prema veličini poduzeća**

**Graph 6. Percentage of companies that have a website, according to enterprises size**



**Grafikon 7. Postotak poduzeća koja imaju web stranicu, prema djelatnosti poduzeća**  
**Graph 7. Percentage of companies that have a website, by enterprise activity**



Poduzeća posredstvom web stranice najčešće pružaju:

- Opis robe ili usluga, cjenovnik (88,8%);
- Linkovi i preporuke na društveni profil poduzeća (60,6%).

Istraživanje je pokazalo da 56,7% poduzeća koristi neke od društvenih mreža.

Najveći postotak poduzeća koja koristi neke od društvenih mreža imaju djelatnosti „Smještaj i ugostiteljstvo“ (86,0,%) i „Informacije i komunikacija,“ (74,3,%).

Kada pogledamo strukturu poduzeća prema veličini, dobijamo sljedeće rezultate:

- 69,3% velikih poduzeća koristi neke od društvenih mreža;
- 59,2% srednjih poduzeća koristi neke od društvenih mreža;
- 56,0% malih poduzeća koristi neke od društvenih mreža.

*Via their website, enterprises most often provide:*

- *Description of goods or services, pricelists (88.8%);*
- *Links and recommendations on the social profile enterprises (60.6%);*

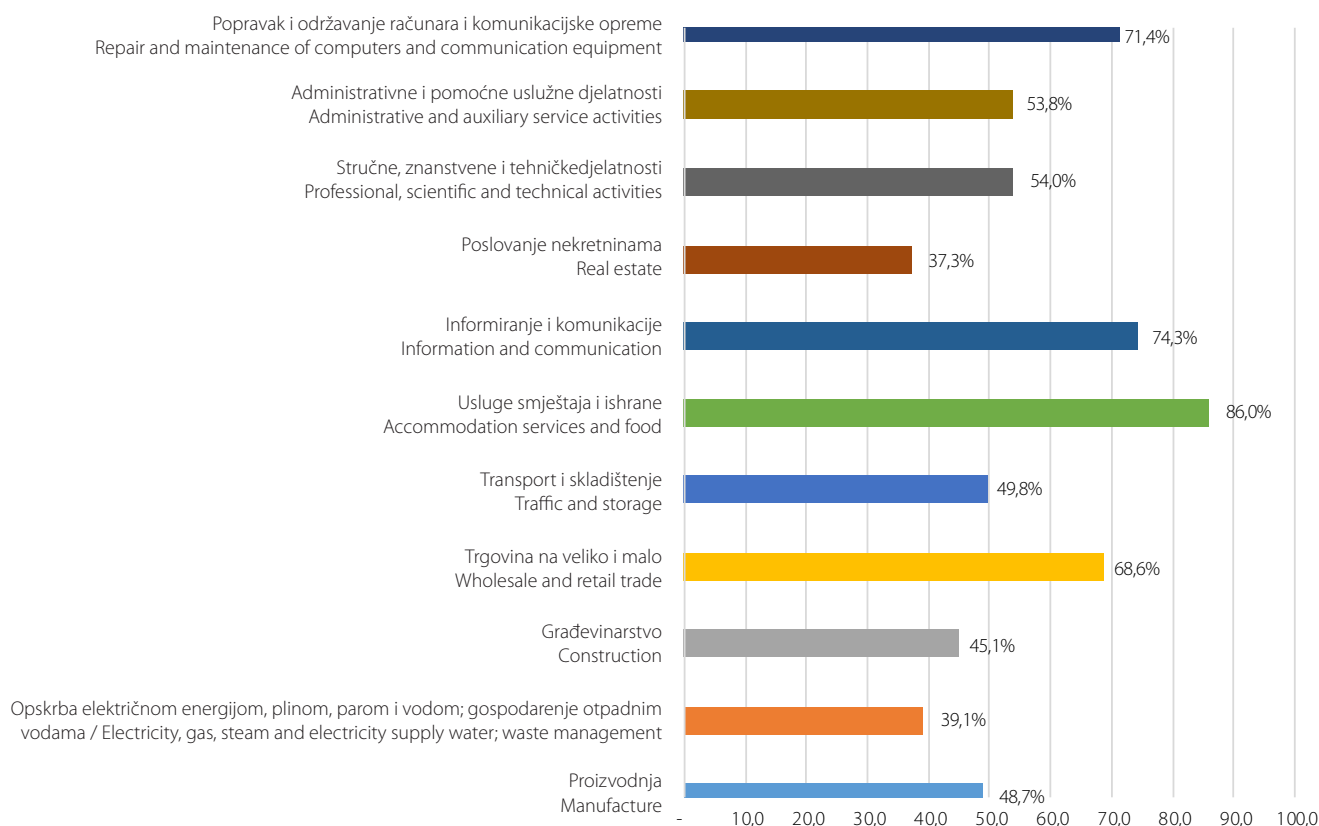
*The survey showed that 56.7% enterprise use some of the social networks.*

*The largest percentage of enterprises that use some of the social networks have the activities "Accommodation and food service activities" (86.0,%) and "Information and communication" (74.3,%).*

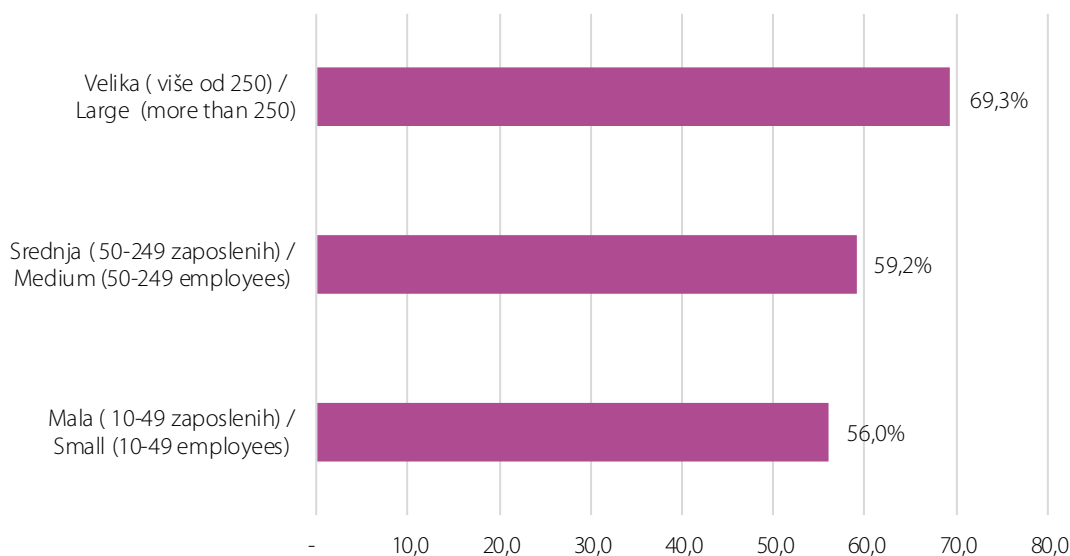
*When we look at the structure of enterprises by size, we get the following results:*

- *69.3% of large enterprises use some of the social networks;*
- *59.2% of medium-sized enterprises use some of the social networks;*
- *56.0% % of small enterprises use some of the social networks.*

**Grafikon 8. Postotak poduzeća koja koristi neke od društvenih mreža, prema djelatnosti poduzeća**  
**Graph 8. Percentage of enterprises that use some of the social networks, by enterprise activity**



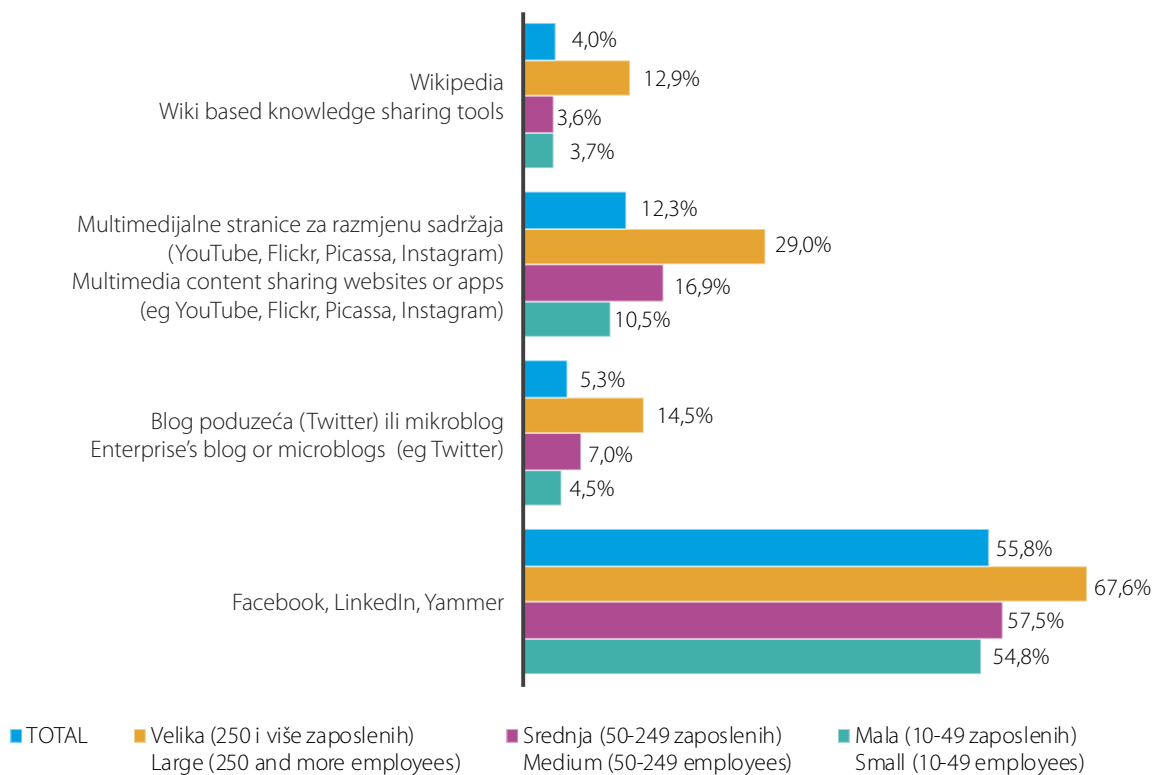
**Grafikon 9. Postotak poduzeća koja koristi neke od društvenih mreža, prema veličini poduzeća**  
**Graph 9. Percentage of companies that use some of the social networks, according to enterprises size**



Istraživanje je pokazalo da poduzeća najviše koriste Facebook, LinkedIn, Yamme i slično, kao društvene mreže, njih 55,6%.

*The survey showed that enterprises mostly use Facebook, LinkedIn, Yammer and the like, as social networks, 55.6% of them.*

**Grafikon 10. Postotak poduzeća koja koristi društvene mreže, prema veličini poduzeća 2021.**  
**Graph 10. The percentage of companies that pay the cloud services, by enterprise size 2021**





## Elektronička trgovina

Tijekom 2020. godine, 17,8% poduzeća u Bosni i Hercegovini je imalo web prodaju robe ili usluga.

Kada pogledamo strukturu poduzeća prema veličini, dobijamo sljedeće rezultate:

- 24,5% velikih poduzeća je imalo web prodaju robe ili usluga;
- 22,9% srednjih poduzeća je imalo web prodaju robe ili usluga;
- 16,2% malih poduzeća je imalo web prodaju robe ili usluga.

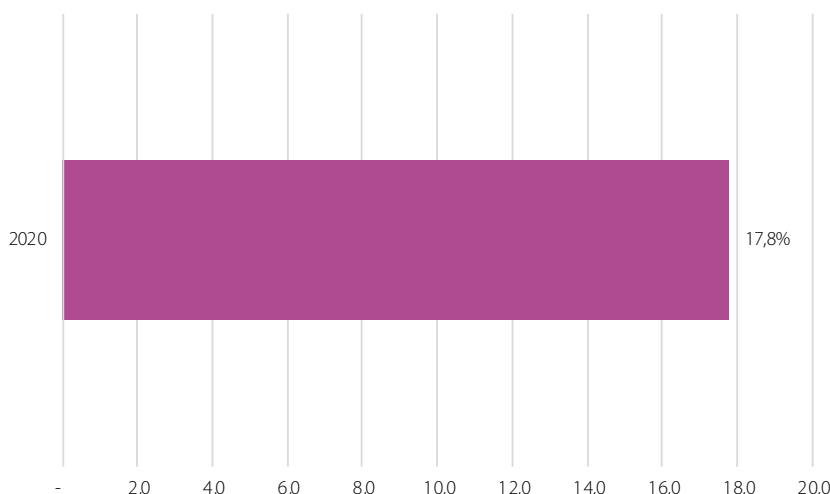
## E-Commerce

In 2020. year, 17.8% of enterprises in Bosnia and Herzegovina have web sales of goods or services.

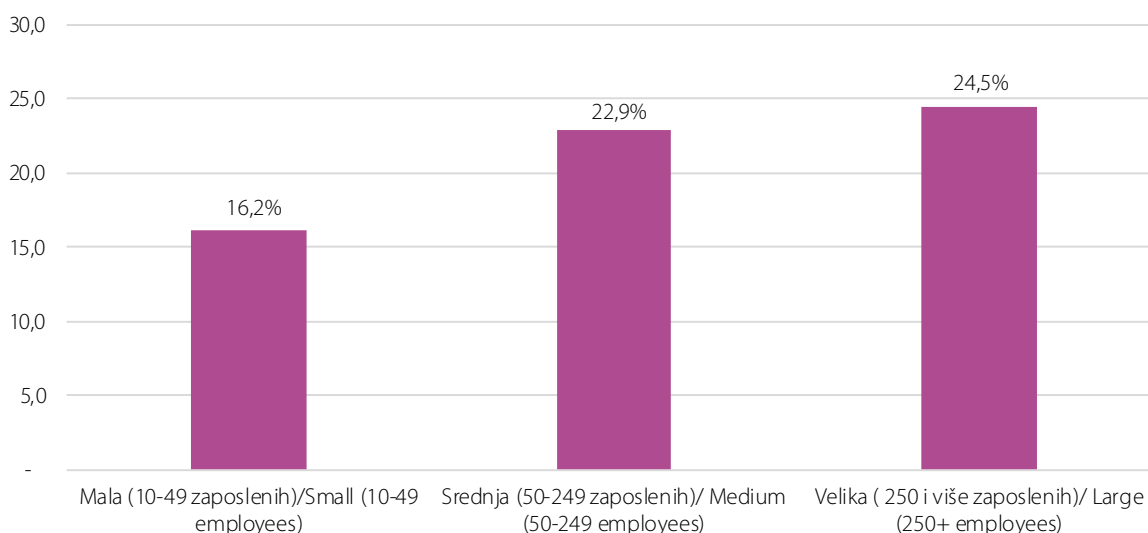
When we look at the structure of enterprises by size, we get the following results:

- 24.5% of large enterprises had web sales of goods or services.;
- 22.9% of medium-sized enterprises had web sales of goods or services;
- 16.2% of small enterprises had web sales of goods or services.

**Grafikon 11. Postotak poduzeća koja su imali web prodaju roba ili usluga tijekom 2020.**  
**Graph 11. Percentage of enterprises that had web sales of goods or services during 2020**



**Grafikon 12. Postotak poduzeća koja su imala web prodaju u 2020 godini, prema veličini poduzeća**  
**Graph 12. Percentage of enterprises that had web sales in the 2020 year, by size enterprises**



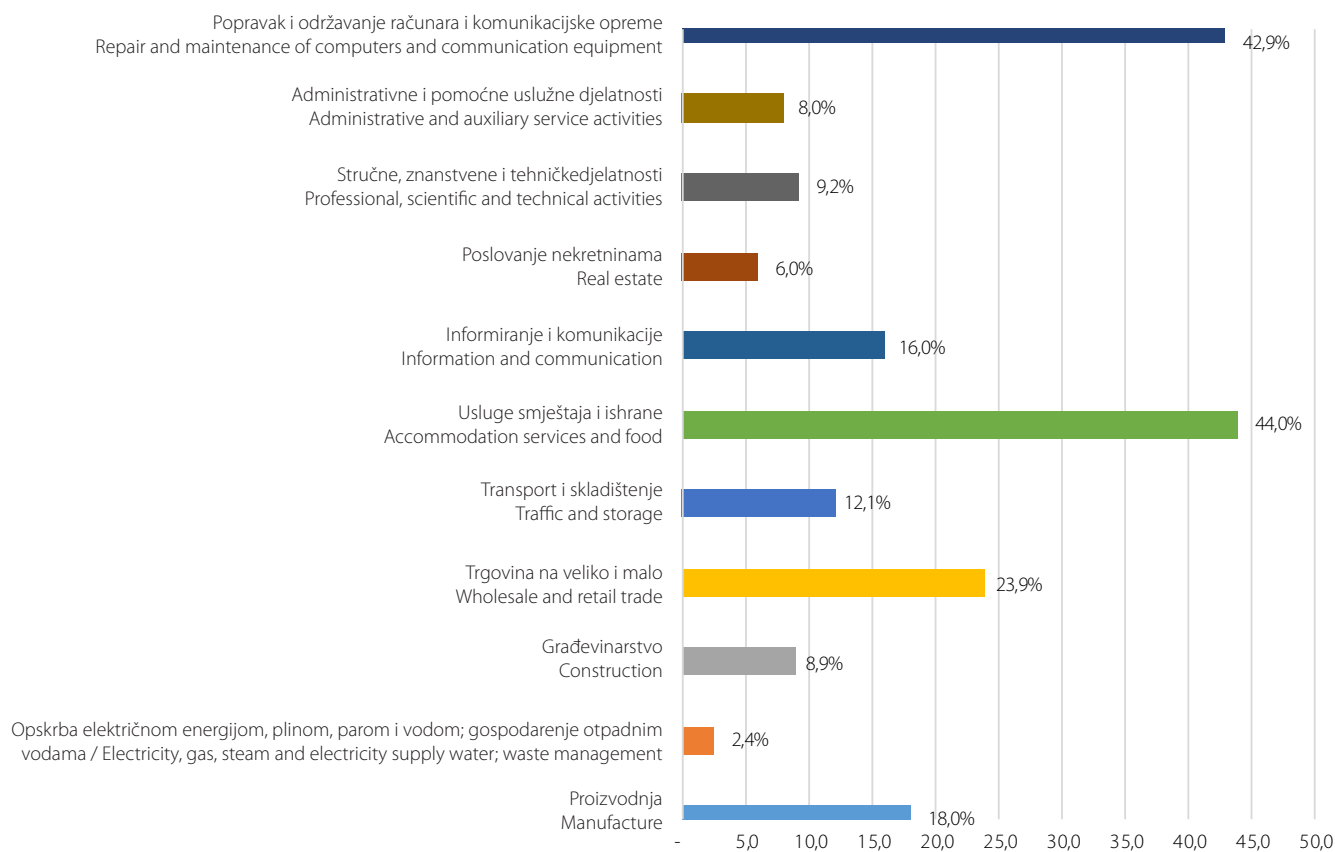
Istraživanje je pokazalo da na pitanje „Da li je vaše poduzeće tijekom 2020. godine imalo web prodaju robe ili usluga putem?“:

- vlastite web stranice poduzeća ili aplikacije, 9,0%;
- 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), 11,8%.

Survey showed that to the question “During 2020, did your enterprise have web sales of goods or services Via“:

- via own enterprise’s websites or apps, 9.0%;
- 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), 11.8%.

**Grafikon 13. Postotak poduzeća koja su imala web prodaju, prema djelatnosti poduzeća**  
**Graph 13. Percentage of enterprises that had web sales, by enterprise activity**



Ako lociramo kupce prema geografskim lokacijama, poduzeća koja su imala web prodaju u 2020. godini najviše su ostvarili web prodaju sa kupcima u:

- Bosni i Hercegovini (94,4%);
- Zemlje EU (31,2%);
- Ostale zemlje svijeta (17,8%).

Rezultati istraživanja pokazuju da je postotak od ukupnog prometa ostvaren putem web prodaje roba ili usluga za 2020. godinu iznosio 5,2%.

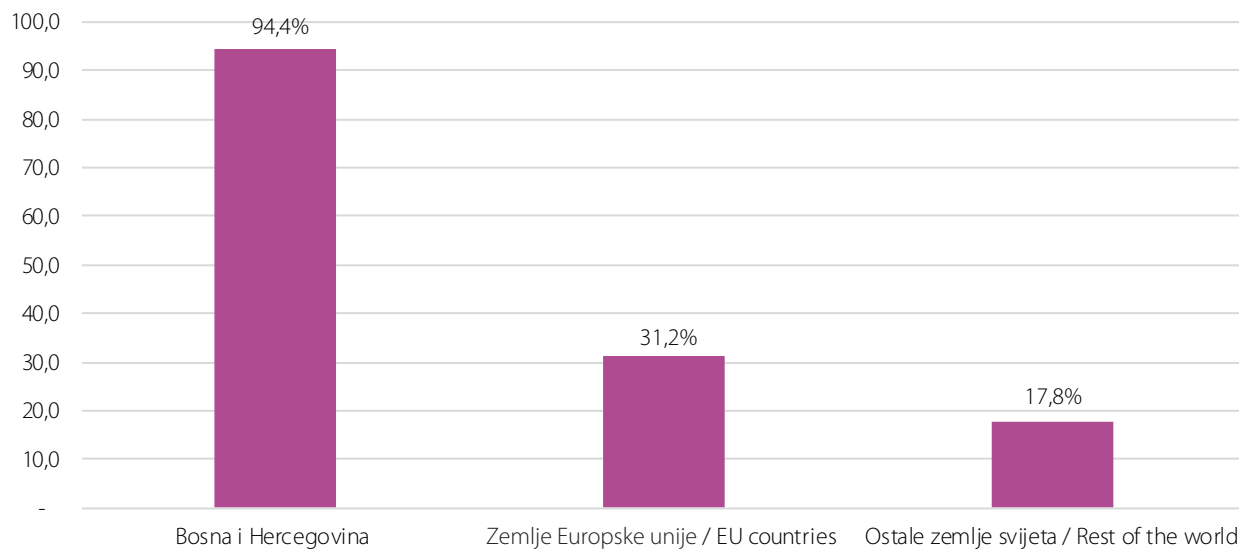
If we locate customers by geographical locations, the companies that had web sales in 2020 achieved the most web sales with customers in:

- Bosnia and Herzegovina (94.4%);
- EU countries (31.2%);
- Other countries (17.8%);

The results of the survey show that the percentage of total turnover realized through web sales of goods or services for 2020 is 5.2%.

**Grafikon 14. Poduzeća ostvarila web prodaju roba i usluga tijekom 2020. godine, kupcima lociranim prema geografskim područjima**

**Graph 14. The enterprises realized web sales of goods and services during 2020, to customers located by geographical areas**



Od ukupnog prometa ostvarenog putem web prodaje roba ili usluga za 2020. godinu odnosi se na kupce u: Bosni i Hercegovini (89,8%); Zemlje EU (8,3%); Ostale zemlje svijeta (1,9%).

*Of the total turnover realized through web sales of goods or services for 2020 refers to customers in Bosnia and Herzegovina (89.8%), EU countries (8.3%), other countries (1.9%).*

### Upotreba cloud usluga

Usluge cloud servisa plaća putem interneta 8,9% poduzeća.

Cloud servisi podrazumijevaju IKT servise kojima se pristupa putem interneta radi uporabe softvera, prostora za skladištenje podataka i sl.

Servisi imaju sljedeće karakteristike:

- nalaze se na serverima davatelja usluga (providera);
- mogu se upotrebljavati na zahtjev korisnika;
- plaćaju se na temelju načina uporabe, kapaciteta prostora.

### Using Cloud Computing Services

Cloud services are paid by the internet to 8.9% of enterprises.

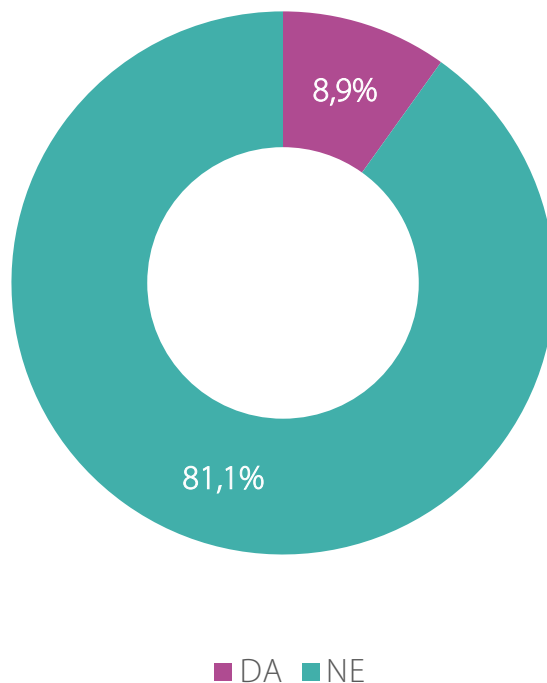
Cloud services include ICT services that are accessed via the Internet for use software, storage space, etc.

The services have the following characteristics:

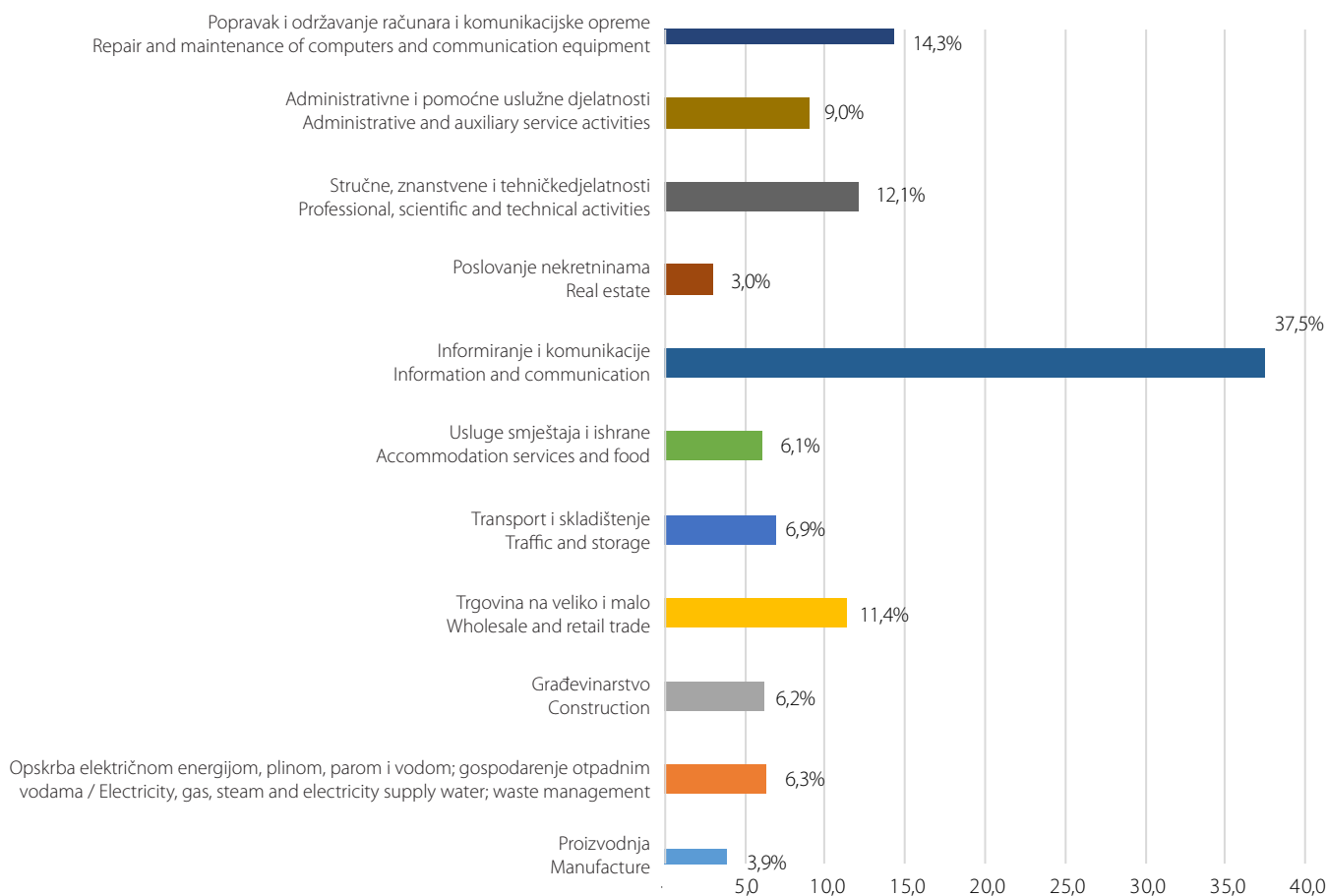
- they are located on the servers of service providers;
- they can be used at the request of the user;
- they are paid on the basis of usage, space capacity.

**Grafikon 15. Postotak poduzeća koja plaćaju usluge cloud servisa putem interneta**  
**Graph 15. The percentage of enterprises that pay cloud services via the Internet**

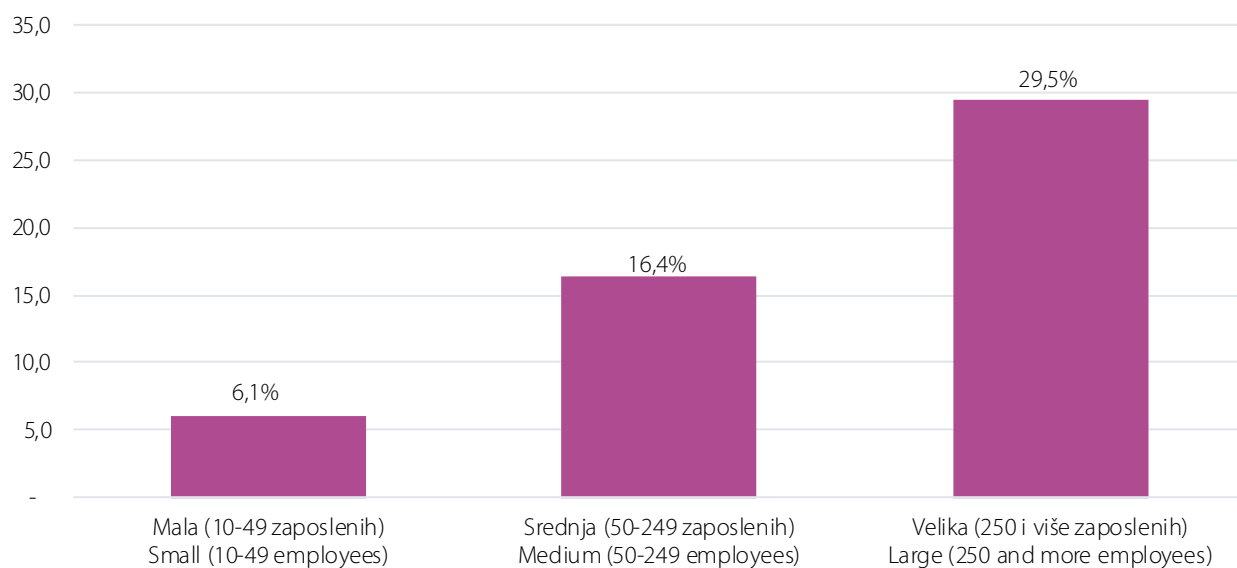
TRAVANJ / APRIL 2021.



**Grafikon 16. Postotak poduzeća koja plaćaju cloud usluge, prema djelatnosti poduzeća 2021.**  
**Graph 16. The percentage of companies that pay the cloud services, by enterprise activity 2021**



**Grafikon 17. Postotak poduzeća koja plaćaju cloud usluge, prema veličini poduzeća 2021.**  
**Graph 17. The percentage of companies that pay the cloud services, by enterprise size 2021**



## 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 razmjenjuju 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 međusobno povezane uređaje ili sustave koji se mogu nadgledati ili daljinski kontrolirati putem interneta, koristi 17,2% poduzeća u Bosni i Hercegovini.

## 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.*

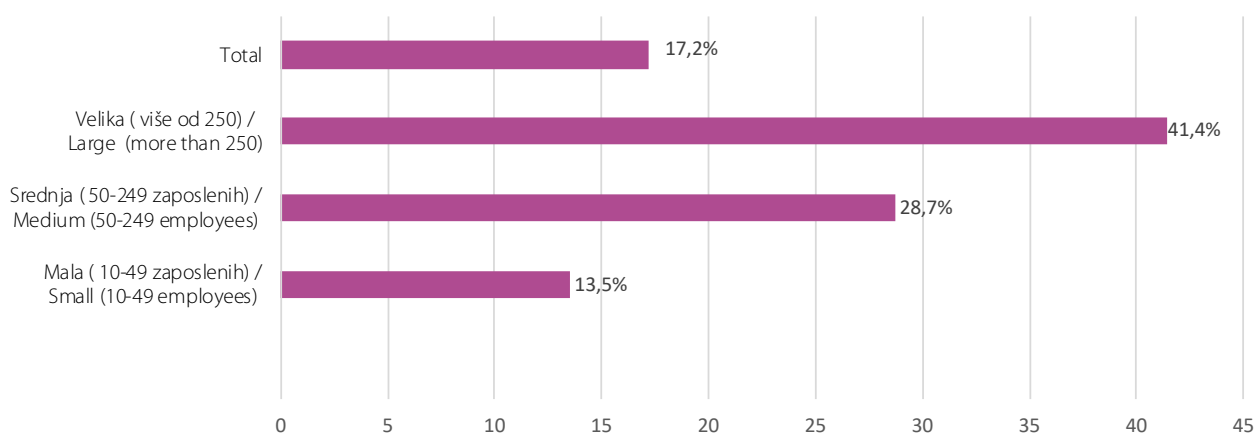
*Examples are:*

*“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 17.2% of enterprises in Bosnia and Herzegovina use interconnected devices or systems that can be monitored or remotely controlled via the Internet.*

**Grafikon 18. Postotak poduzeća koja koristi „pametne“ uređaje ili sustave, prema veličini poduzeća**  
**Graph 18. Percentage of companies that “smart” devices or systems, according to enterprises size**



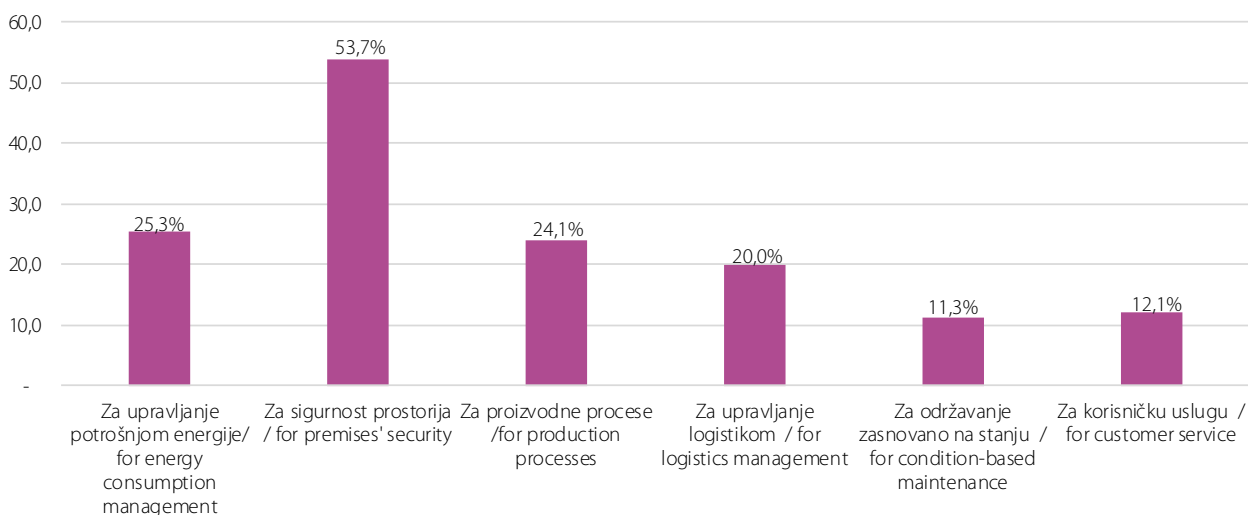
Poduzeća koja koriste međusobno povezane uređaje ili sustave koji se mogu nadgledati ili daljinski kontrolirati putem interneta su odgovorili da sljedeće uređaje i sustave koriste:<sup>12</sup>

- a) Za upravljanje potrošnjom energije, npr. „pametni“ uređaji poput termostata svjetiljki (svjetla), (25,3%);
- b) Za sigurnost prostorija (npr. „pametni“-alarmni sustavi, detektori dima, brave, sigurnosne kamere) (53,7%);
- c) Za proizvodne procese (npr. senzori ili RFID oznake koji se nadgledaju/kontroliraju putem interneta i koriste se za nadgledanje ili automatizaciju procesa) (24,1%);
- d) Za upravljanje logistikom (npr. senzori koji se nadgledaju/kontroliraju preko interneta za praćenje proizvoda ili vozila u upravljanju skladištem) (20,0%);
- e) Za održavanje zasnovano na stanju (npr. senzori koji se nadgledaju ili kontroliraju preko interneta za praćenje potreba za održavanjem strojeva ili vozila) (11,3%);
- f) Za korisničku uslugu (npr. „pametne“ kamere ili senzori koji se nadgledaju ili kontroliraju preko interneta radi praćenja aktivnosti kupaca ili nuđenja personaliziranog iskustva kupovine) (12,1%).

*Enterprises that use interconnected devices or systems that can be monitored or remotely controlled via the Internet responded that the following devices and systems use:<sup>12</sup>*

- a) for energy consumption management (e.g. “smart”-meters, thermostats, lamps (lights)) (25.3%);*
- b) for premises’ security (e.g. “smart” -alarm systems, -smoke detectors, door locks, security cameras) (53.7%);*
- c) for production processes (e.g. sensors or RFID tags that are monitored/controlled via the internet and used to monitor or automate the process) (24.1%);*
- d) for logistics management (e.g. sensors monitored /controlled via the internet for tracking products or vehicles in warehouse management) (20.0%);*
- e) for condition-based maintenance (e.g. sensors monitored/controlled via the internet to monitor maintenance needs of machines or vehicles) (11.3%);*
- f) for customer service (e.g. “smart” cameras or sensors monitored/controlled via the internet to monitor customers’ activities or offer them a personalised shopping experience) (12.1%).*

**Grafikon 19. Postotak poduzeća koja koriste „pametne“ uređaje ili sustave, prema tipu uređaja, 2021<sup>13</sup>**  
**Graph 19. Percentage of enterprises using “smart” devices or systems, by type of device, 2021<sup>13</sup>**



<sup>12</sup> Podaci se odnose na poduzeća koja koriste međusobno povezane uređaje ili sustave koji se mogu nadgledati ili daljinski kontrolirati putem interneta

<sup>12</sup> Data refer to enterprises that use interconnected devices or systems that can be monitored or remotely controlled via the Internet

<sup>13</sup> Isto

<sup>13</sup> The same

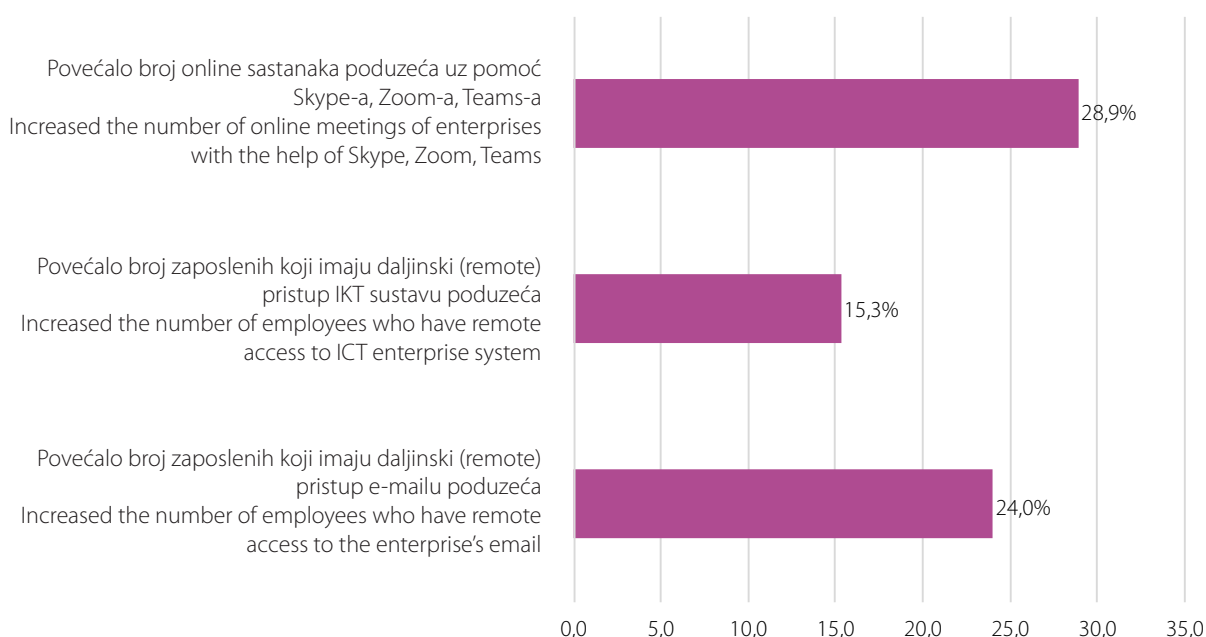
## Utjecaj Covida-19

Tijekom 2020. godine 23,9% poduzeća u Bosni i Hercegovini je povećalo broj zaposlenih koji imaju daljinski (remote) pristup e-mailu poduzeća, dok je 15,2% poduzeća povećalo broj zaposlenih koji imaju daljinski (remote) pristup IKT sustavu poduzeća. Broj poduzeća koja su povećala obim online sastanaka, uz pomoć Skype-a, Zoom-a ili Teams- a, iznosio je 28,9%.

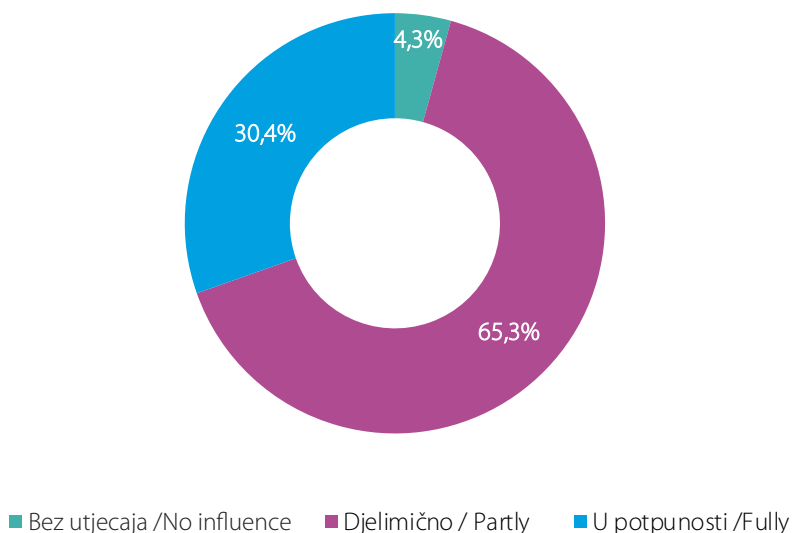
## Impact of Covid-19

During 2020, 23.9% of enterprises in Bosnia and Herzegovina increased the number of employees who have remote access to enterprises' email, while 15.2% of enterprises increased the number of employees who have remote access to the enterprises ICT system. The number of enterprises that increased the volume of online meetings, with the help of Skype, Zoom, or Teams, was 28.9%.

**Grafikon 20. Da li je Vaše poduzeće tijekom 2020, uslijed pandemije Covid-19**  
**Graph 20. During 2020, did your enterprise, due to the Covid-19 pandemic:**



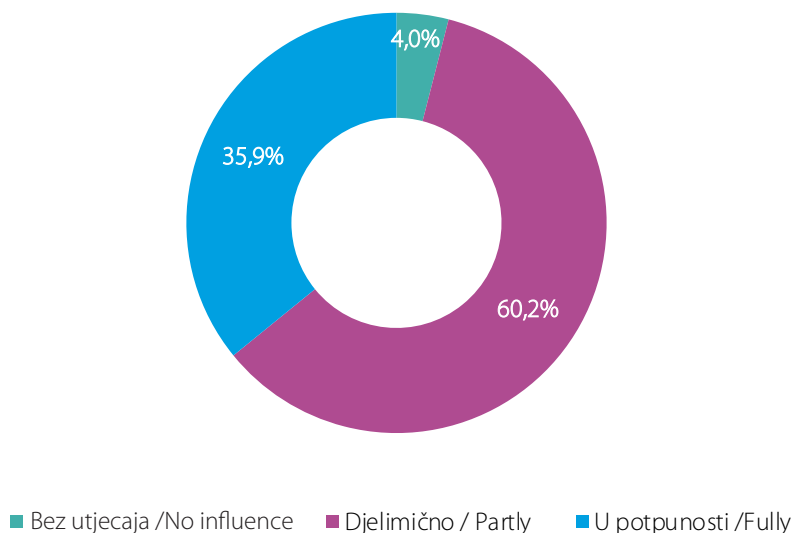
**Grafikon 21. U kojoj mjeri je povećanje broja zaposlenih u daljinskom pristupu e-mail sustava poduzeća, posljedica pandemije Covid-19** /Graph 21. To what degree were these changes due to the Covid-19 pandemic, in the remote access to the e-mail system of the enterprise





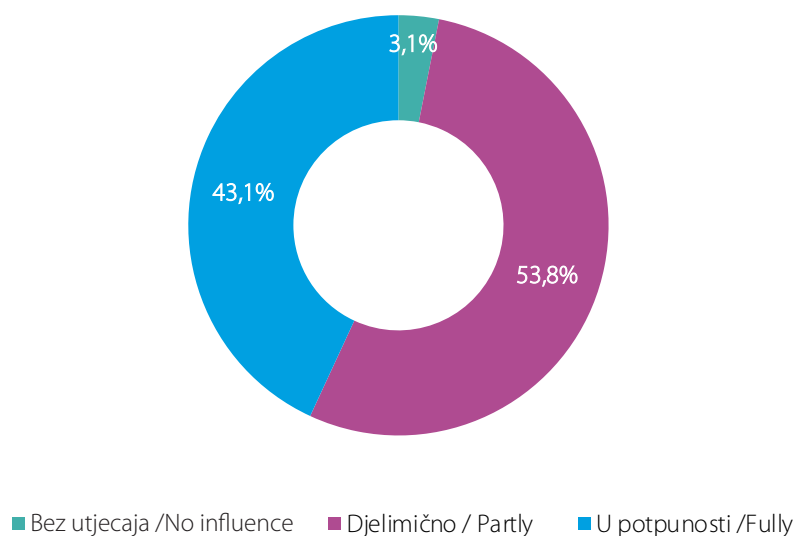
**Grafikon 22. U kojoj mjeri je povećanje broja zaposlenih sa daljinskim (remote) pristupom IKT sustavu poduzeća, posljedica pandemije Covid-19**

**Graph 22. To what degree were these changes due to the Covid-19 pandemic, in the remote access to the ICT systems of the enterprise**



**Grafikon 23. U kojoj mjeri je povećanje online sastanaka poduzeća uz pomoć Skype-a, Zoom-a, Teams-a, posljedica pandemije Covid-19**

**Graph 23. To what degree were these changes due to the Covid-19 pandemic, in number of remote meetings conducted by the enterprise**



Tijekom 2020. godine 10,3% poduzeća u Bosni i Hercegovini pod utjecajem Covid-a19 započelo ili povećalo angažiranje za internet prodaju robe ili usluga.

*During 2020, 10.3% of enterprises in Bosnia and Herzegovina under due to e of Covid-19 started or increased efforts for online sales of goods or services.*

## 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 nosilac (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. Skupina 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 iskaznice, 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.

**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).

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

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

**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 da se provodi na mreži ili izvan mreže (offline). Narudžbe koje se primaju putem telefona, faksa ili maila ne ulaze u kategoriju elektroničke trgovine.

**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.

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

**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.

**3D tiskanjem** 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.

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

***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** 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)** A type of fast internet connection using standard telephone pairs. It can also be a type of broadband connection.*

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

***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 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 three-dimensional physical objects using digital technology.*

**Industrijski robot** je automatski 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 zadatke.

**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 vazduhu (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.

**Vještačka inteligencija** se odnosi na sustave koji koriste tehnologije kao što su: rukovanje tekстом, računarski vid, prepoznavanje govora, stvaranje prirodnog jezika, strojno učenje, duboko učenje za prikupljanje i / ili korištenje podataka za predviđanje, preporučivanje ili odlučivanje, sa različitim razinama autonomije, najbolja akcija za postizanje određenih ciljeva.

***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.*

***Artificial intelligence** refers to systems that use technologies such as: text mining, computer vision, speech recognition, natural language generation, machine learning, deep learning to gather and/or use data to predict, recommend or decide, with varying levels of autonomy, the best action to achieve specific goals.*

