

UPOTREBA informaciono-komunikacionih tehnologija u Bosni i Hercegovini

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

2021



Bosna i Hercegovina
Bosnia and Herzegovina



BHAS

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

Sarajevo, 2022.



**UPOTREBA INFORMACIONO-
KOMUNIKACIONIH TEHNOLOGIJA
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Bosne i Hercegovine**
Agency for Statistics of
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Sarajevo, 2022

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SADRŽAJ

CONTENTS

UVOD	7
INTRODUCTION	7
DOMAĆINSTVA I POJEDINCI	9
HOUSEHOLDS AND INDIVIDUALS	9
UZORAK	11
SAMPLE	11
GLAVNI INDIKATORI	13
MAIN INDICATORS	13
Računari u domaćinstvima (Bilo koje vrste: desktop, laptop, netbook, tablet, osim smart phone)	13
Computers in households (Any type of: desktop, laptop, netbook, tablet, except smartphone)	13
Grafiikon 1. Procenat domaćinstava koja imaju pristup računaru, BiH	13
Chart 1. Households access to the computer, BiH	13
Grafiikon 2. Procenat domaćinstava koja imaju pristup računaru, prema tipu naselja, BiH	14
Chart 2. Percentage of households which have access to the computer, by the type of settlement, BiH	14
Grafiikon 3. Procenat domaćinstava koja imaju pristup računaru, sa djecom od 15 godina i mlađom, BiH	14
Chart 3. Percentage of households which have access to the computer, with children aged 15 and younger, BiH	14
Grafiikon 4. Procenat domaćinstava koja imaju pristup računaru, prema mjesečnim neto prihodima domaćinstva, BiH	15
Chart 4. Percentage of households which have access to the computer, according to monthly net income of the household, BiH	15
Grafiikon 5. Uređaji koji su zastupljeni u domaćinstvima (%), Bosna i Hercegovina	15
Chart 5. Devices that are in households (%), Bosnia and Herzegovina	15
Internet u domaćinstvima	16
Internet in households	16
Grafiikon 6. Procenat domaćinstava koja poseduju internet priključak, Bosna i Hercegovina	16
Chart 6. Percentage of households that own internet connection, BiH 2019	16
Grafiikon 7. Procenat domaćinstava koja imaju pristup internetu, sa djecom od 15 godina i mlađom, BiH	17
Chart 7. Percentage of households which have access to the Internet, with children aged 15 and younger, BiH	17
Grafiikon 8. Procenat domaćinstava koja poseduju internet priključak, prema tipu naselja	17
Chart 8. Percentage of households that own internet connection, by the type of settlement	17
Grafiikon 9. Procenat domaćinstava koja imaju pristup internetu, prema mjesečnim neto prihodima domaćinstva, BiH 2021	18
Chart 9. Percentage of households which have internet connection, according to monthly net income of the household, BiH 2020	18
Pojedinci: upotreba interneta	19
Individuals: use of the Internet	19
Grafiikon 10. Osobe koje su koristile internet u posljednja 3 mjeseca	19
Chart 10. Persons who used the Internet in the last 3 months	19
Grafiikon 11. Osobe koje su koristile internet, 2021. godina	20
Chart 11. Persons who used the Internet, 2021 year	20
Grafiikon 12. Struktura obrazovanja korisnika interneta, 2021. godina	20
Chart 12. Structure of education of Internet users, 2021 year	20
Grafiikon 13. Udio korisnika interneta (u posljednja tri mjeseca), prema spolu 2021. godina	21
Chart 13. The share of Internet users (in the last three months), by gender 2020 year	21
Grafiikon 14. Udio korisnika interneta (u posljednja tri mjeseca), prema radnom statusu, Bosna i Hercegovina	21
Chart 14. The share of Internet users (in the last three months), by to employment situation, Bosnia and Herzegovina	21
Grafiikon 15. Korištenje interneta (svaki dan ili skoro svaki dan), prema spolu i starosti, Bosna i Hercegovina, 2021	22
Chart 15. Internet usage (every day or almost every day), by gender and age, Bosnia and Herzegovina, 2020	22
Grafiikon 16. Udio korisnika interneta (svaki dan ili skoro svaki dan) prema spolu, Bosna i Hercegovina, 2021	23
Chart 16. The share of Internet users (every day or almost every day) by gender, Bosnia and Herzegovina, 2021	23
Grafiikon 17. Tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u procentima, Bosni i Hercegovini, 2021	24
Chart 17. Activities of internet use (for private use) in the last three months, in percentages, Bosnia i Herzegovina 2021	24
Grafiikon 18. Najčešći tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u procentima, po starosnoj dobi	25
Chart 18. The most common types of internet use (for private use) in the last three months, in percentages, by age	25
Grafiikon 19. Najčešći tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca, po spolu, 2021	26
Chart 19. The most common types of internet use (for private use) in the last three months, by gender, 2021	26
Javna uprava	27
E-government	27
Grafiikon 20. Za koju ste od sljedećih usluga javne uprave koristili internet	27
Chart 20. For which of the following public administration services did you use the Internet?	27
Grafiikon 21. Upotreba interneta radi korištenja usluga javne uprave u posljednjih 12 mjeseci, prema nivou obrazovanja	27
Chart 21. Use of the Internet in order to use services or services of public administration in the last 12 months, by education level	27
Grafiikon 22. Upotreba interneta radi korištenja usluga javne uprave u posljednjih 12 mjeseci, prema spolu i starosti	28
Chart 22. Use of the Internet in order to use services or services of public administration in the last 12 months, by sex and age	28

Elektronska trgovina	29
e-commerce	29
Grafikon 23. Posljednji put (u privatne svrhe) kupili/naručili robu ili usluge putem interneta u procentima.....	29
Chart 23. Last time (for private purposes) they bought / ordered goods or services via the Internet in percent	29
Grafikon 24. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema spolu, 2021	30
Chart 24. Bought / ordered goods or services online in the last three months (for private purposes), by gender, 2021	30
Grafikon 25. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema spolu i starosti, 2021	30
Chart 25. Bought / ordered goods or services online in the last three months (for private purposes), by sex and age, 2021	30
Grafikon 26. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema nivou obrazovanja, 2021	31
Chart 26. Bought / ordered goods or services online in the last three months (for private purposes), by education level, 2021	31
Grafikon 27. Koliko često ste kupovali/naručivali robu ili usluge putem interneta u privatne svrhe u posljednja 3 mjeseca	31
Chart 27. How often have you purchased / ordered goods or services over the Internet for private purposes in the last 3 months	31
Grafikon 28. Novčani iznos kupljene/naručene robe ili usluge (pojedinci koji su kupovali zadnja 3 mjeseca)	32
Chart 28. Amount purchased / ordered goods or services (individuals who bought the last 3 months).....	32
Grafikon 29. Koju ste vrstu robe ili usluga kupili ili naručili putem interneta u posljednja 3 mjeseca, u privatne svrhe?.....	33
Chart 29. What types of goods or services did you buy or order over the Internet for private use in the last 3 months?.....	33
Grafikon 30. Najčešće vrstu robe ili usluga kupili ili naručili putem interneta u posljednja 3 mjeseca, u privatne svrhe, po spolu?.....	34
Chart 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	34
Grafikon 31. Koji su razlozi što niste kupili/poručili robu ili usluge u privatne svrhe, putem interneta, u posljednja 3 mjeseca, po spolu?	35
Chart 31. What were the reasons for not buying anything via a website or app in the last 3 months, by gender	35
E-vještine	36
E-skills	36
Grafikon 32. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema nivou obrazovanja, 2021?	36
Chart 32. Which of the following activities have you carried out in the last 3 months, by education level, 2021?	36
Grafikon 33. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema spolu, 2021?	37
Chart 33. Which of the following activities have you carried out in the last 3 months, by gender, 2021?.....	37
Grafikon 34. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema nivou obrazovanja, 2021?	37
Chart 34. Which of the following activities have you carried out in the last 3 months, by education level, 2021?	37
Grafikon 35. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema spolu, 2021?	38
Chart 35. Which of the following activities have you carried out in the last 3 months, by gender, 2021?.....	38
PREDUZEĆA	39
ENTERPRISES	39
Glavni indikatori	41
Main indicators	41
Internet u preduzećima	42
Internet in enterprises	42
Grafikon 1. Preduzeća koja imaju pristup internetu, u procentima	42
Chart 1. Enterprise have internet access in percent	42
Grafikon 2. Koja je maksimalna brzina internet konekcije u vašem preduzeću (definisana ugovorom sa internet providerom)2021?.....	42
Chart 2. What is the maximum speed of the Internet connection in your enterprises (defined by agreement with the Internet provider) 2021?.....	42
Grafikon 3. Da li vaše preduzeće osigurava prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže za poslovne potrebe?	43
Chart 3. Does your enterprise provide portable devices that allow a mobile connection using mobile telephone networks for business purposes? ...	43
Grafikon 4. Preduzeća prema veličini, osigurava prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže, za poslovne potrebe 2021	43
Chart 4. Enterprises by size, provide portable devices that allow a mobile connection to the internet using mobile telephone networks, for business purposes 2021	43
Web stranica	44
Website	44
Grafikon 5. Procenat preduzeća koja imaju web stranicu	44
Chart 5. Percentage of companies that have a website, by enterprise activity.....	44
Grafikon 6. Procenat preduzeća koja imaju web stranicu, prema veličini preduzeća	44
Chart 6. Percentage of companies that have a website, according to enterprises size.....	44
Grafikon 7. Procenat preduzeća koja imaju web stranicu, prema djelatnosti preduzeća	45
Chart 7. Percentage of companies that have a website, by enterprise activity.....	45
Grafikon 8. Procenat preduzeća koja koristi neke od društvenih mreža, prema djelatnosti preduzeća	46
Chart 8. Percentage of enterprises that use some of the social networks, by enterprise activity.....	46
Grafikon 9. Procenat preduzeća koja koristi neke od društvenih mreža, prema veličini preduzeća.....	46
Chart 9. Percentage of companies that use some of the social networks, according to enterprises size.....	46
Grafikon 10. Procenat preduzeća koja koristi društvene mreže, prema veličini preduzeća 2021	47
Chart 10. The percentage of companies that pay the cloud services, by enterprise size 2020	47
Elektronska trgovina	48
E-Commerce	48
Grafikon 11. Procenat preduzeća koja su imali web prodaju roba ili usluga tokom 2020	48
Chart 11. Percentage of enterprises that had web sales of goods or services during 2020.....	48
Grafikon 12. Procenat preduzeća koja su imala web prodaju u 2020. godini, prema veličini preduzeća	48
Chart 12. Percentage of enterprises that had web sales in the 2020 year, by size enterprises.....	48

Grafikon 13. Procenat preduzeća koja su imala web prodaju, prema djelatnosti preduzeća	49
<i>Chart 13. Percentage of enterprises that had web sales, by enterprise activity</i>	<i>49</i>
Grafikon 14. Preduzeća ostvarila web prodaju roba i usluga tokom 2020. godine, kupcima lociranim prema geografskim područjima	50
<i>Chart 14. The enterprises realized web sales of goods and services during 2020, to customers located by geographical areas.....</i>	<i>50</i>
Upotreba cloud usluga.....	51
Using Cloud Computing Services	51
Grafikon 15. Procenat preduzeća koja plaćaju usluge cloud servisa putem interneta	51
<i>Chart 15. The percentage of enterprises that pay cloud services via the Internet</i>	<i>51</i>
Grafikon 16. Procenat preduzeća koja plaćaju cloud usluge, prema djelatnosti preduzeća 2021	52
<i>Chart 16. The percentage of companies that pay the cloud services, by enterprise activity 2021</i>	<i>52</i>
Grafikon 17. Procenat preduzeća koja plaćaju cloud usluge, prema veličini preduzeća 2021	52
<i>Chart 17. The percentage of companies that pay the cloud services, by enterprise size 2021</i>	<i>52</i>
Internet pametnih uređaja	53
Internet of Things	53
Grafikon 18. Procenat preduzeća koja koristi „pametne“ uređaje ili sisteme, prema veličini preduzeća	53
<i>Chart 18. Percentage of companies that “smart” devices or systems, according to enterprises size.....</i>	<i>53</i>
Grafikon 19. Procenat preduzeća koja koriste „pametne“ uređaje ili sisteme, prema tipu uređaja, 2021	54
<i>Chart 19. Percentage of enterprises using «smart» devices or systems, by type of device, 2021</i>	<i>54</i>
Uticaj Covida-19	55
Impact of Covid-19	55
Grafikon 20. Da li je Vaše preduzeće tokom 2020, uslijed pandemije Covida-19	55
<i>Chart 20. During 2020, did your enterprise, due to the Covid-19 pandemic.....</i>	<i>55</i>
Grafikon 21. U kojoj mjeri je povećanje broja zaposlenih u daljinskom pristupu e-mail sistema preduzeća, posljedica pandemije Covid-19	55
<i>Chart 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</i>	<i>55</i>
Grafikon 22. U kojoj mjeri je povećanje broja zaposlenih sa daljinskim (remote) pristupom IKT sistemu preduzeća, posljedica pandemije Covid-19.....	56
<i>Chart 22. To what degree were these changes due to the Covid-19 pandemic, in the remote access to the ICT systems of the enterprise</i>	<i>56</i>
Grafikon 23. U kojoj mjeri je povećanje online sastanaka preduzeća uz pomoć Skype-a, Zoom-a, Teams-a, posljedica pandemije Covid-19	56
<i>Chart 23. To what degree were these changes due to the Covid-19 pandemic, in number of remote meetings conducted by the enterprise</i>	<i>56</i>
IKT RJEČNIK.....	57
ICT GLOSSARY	57

UVOD

Razvoj i upotreba informaciono-komunikacionih tehnologija transformisali su savremeno društvo u „informaciono društvo“. Njegova glavna karakteristika je ta što informaciono-komunikacione 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 informaciono-komunikacionih tehnologija. Prvo se odnosio na domaćinstva i pojedince, a drugo na preduzeća. Oba ova istraživanja sprovedena su 2021.

Svrha ovoga istraživanja je prikazati nivo upotrebe interneta i ostalih informaciono-komunikacionih 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 informacionog društva.

Koncepti i definicije koje se primjenjuju za IKT istraživanja usklađeni su sa Eurostat-ovom metodologijom za statistike o Informacionom društvu, 2021, sa regulativom Evropskog parlamenta i Vijeća br. 2020/1030 i 2020/1013 o statistici Zajednice o informacionom društvu.

Kada je riječ o domaćinstvima i pojedincima, referentni period činila su tri mjeseca koja su prethodila telefonskom intervjuisanju ili posjeti anketara, dok su se pojedina pitanja odnosila na cjelokupnu 2020. godinu.

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

Velična uzorka na nivo Bosne i Hercegovine je 8 110 domaćinstava. Stopa odgovora je 78,8%, odnosno 6 393 domaćinstava (stoji stopa odgovora = broj jedinica koje su odgovorile/sa broj jedinica izabran u uzorak).

Podaci su prikupljeni putem telefonskog anketiranja (CATI).

Anketa za preduzeća provedena je na uzorku stratifikovanom po veličini i djelatnosti. Okvir uzorka je Statistički poslovni registar. Primijenjen je stratifikovani uzorak, veličina uzorka 2 634 preduzeća. Realizovani uzorak 2 454 preduzeća. 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 kombinovanim metodama: putem telefonskog anketiranja (CATI), anketiranje putem pošte.

Istraživanje IKT-P provedeno je na osnovu Eurostat smjernica. Koncepti i definicije koji se primijenjuju u istraživanju IKT-P usklađeni su sa EU Metodologijom za statistiku o informacionom društvu, 2021.

Nadamo se da će ova publikacija pružiti korisnicima dovoljno podataka o trenutnom stanju u oblasti informaciono-komunikacionih 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.

DOMAĆINSTVA I POJEDINCI
HOUSEHOLDS AND
INDIVIDUALS

UZORAK

Istraživanja o upotrebi informaciono-komunikacionih tehnologija u domaćinstvima provedeno je na reprezentativnom uzorku od 8 110 domaćinstva na teritoriji Bosne i Hercegovine. Stopa odgovora iznosi 78,8%, (6 393 domaćinstva)

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 domaćinstva Household sample	Entitet /Entity			Ukupno BiH Total BiH	Gradsko Urban	Ostalo Other	Domaćinstva sa i bez djece Households with and without children	
	Federacija BiH Federation of BiH	Republika Srpska Republic of Srpska	Distrikt Brčko Brčko District				Domaćinstva sa djecom mlađom od 16 godina Households with children under 16 years of age	Domaćinstva bez djece mlađe 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 domaćinstava iskorišten je i za anketiranje osoba starosti od 16 do 74 godine koji žive na teritoriji 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	Obrazovni nivo 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 (penzioneri, 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 domaćinstvima

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

Rezultati istraživanja o upotrebi informaciono-komunikacionih tehnologija u domaćinstvima i pojedinačno (IKT-D) u Bosni i Hercegovini, pokazali su sljedeće:

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

MAIN INDICATORS

Computers in households

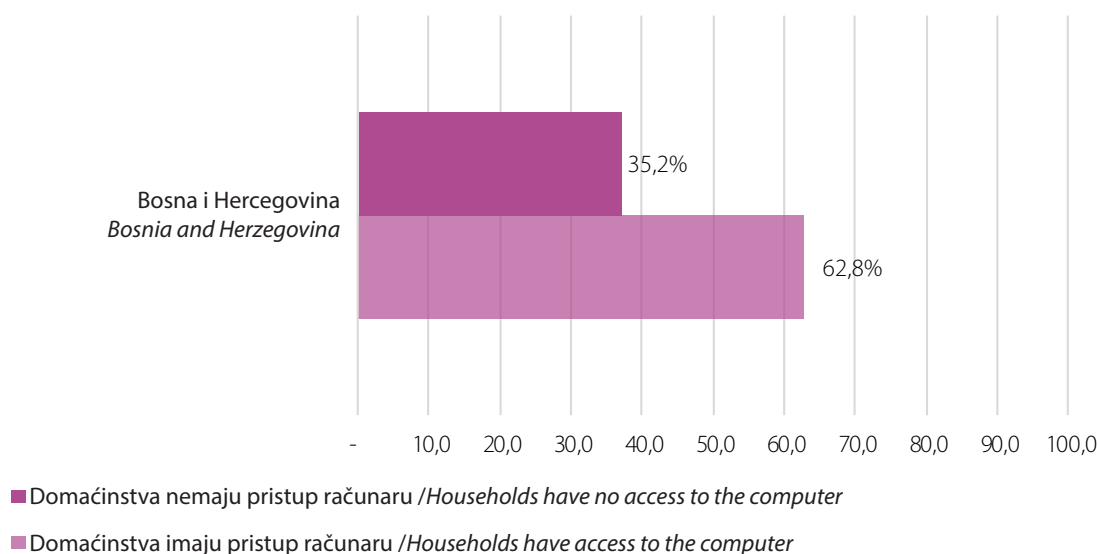
(Any type: desktop, laptop, netbook, tablet, except smartphones)

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. Procenat domaćinstava koja imaju pristup računaru, BIH

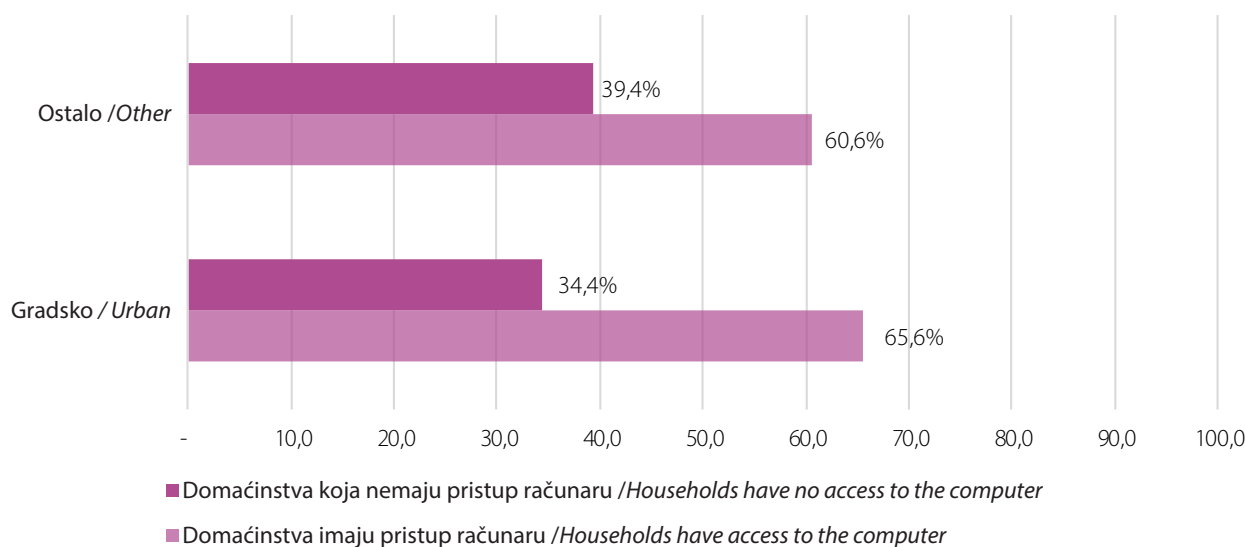
Graph 1. Households access to the computer, BIH



Zastupljenost računara u domaćinstvima varira zavisno o tipu naselja. U urbanim sredinama 65,6% domaćinstava 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%.

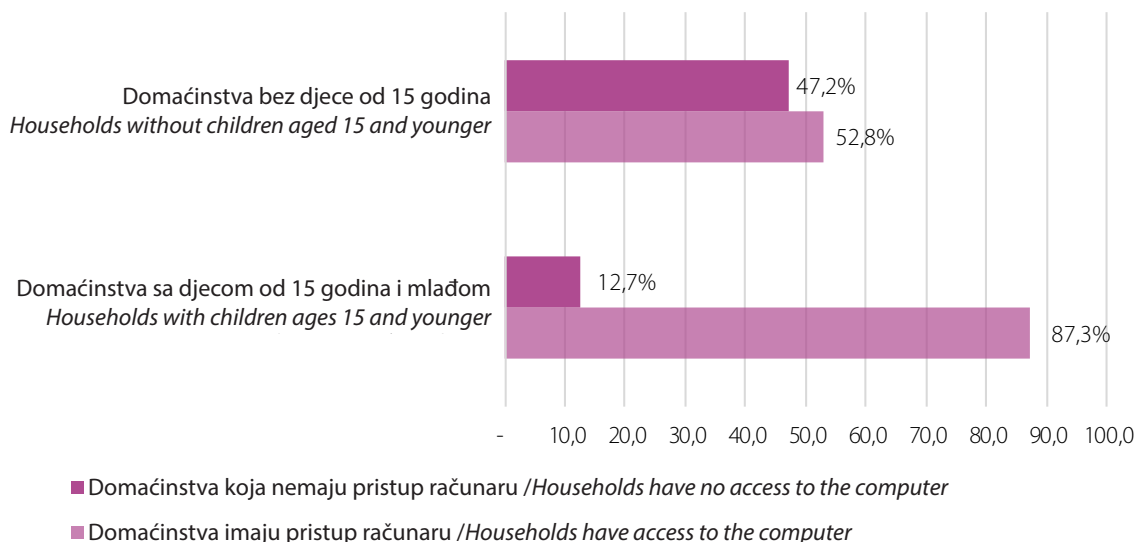
Grafikon 2. Procenat domaćinstava koja imaju pristup računaru, prema tipu naselja, BiH
Graph 2. Percentage of households which have access to a computer, by settlement type, BiH



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

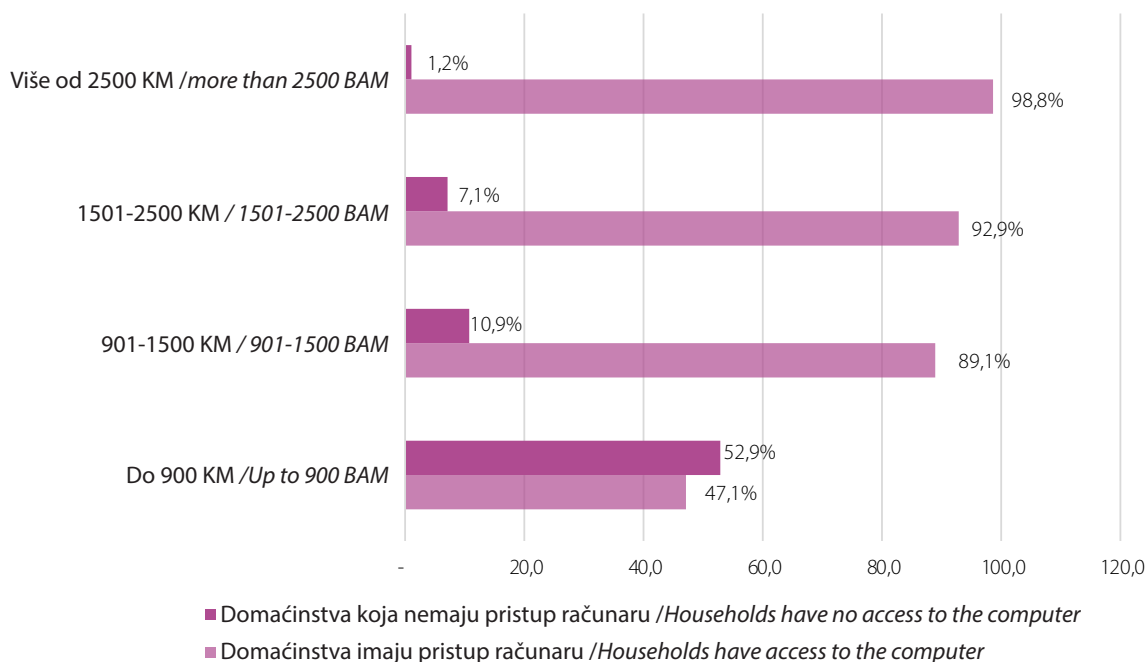
Grafikon 3. Procenat domaćinstava koja imaju pristup računaru, sa djecom od 15 godina i mlađom, BiH
Graph 3. Percentage of households which have access to the computer, with children aged 15 and younger, BiH



Jaz u pristupu domaćinstava računaru vidljiv je u strukturi domaćinstava po mjesečnom dohotku. Pristup računaru većinom imaju domaćinstava sa mjesečnim primanjima većim od 1 500 KM (92,9%), odnosno prihodima većim od 2 500 KM (98,8%), dok udio domaćinstava 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%.

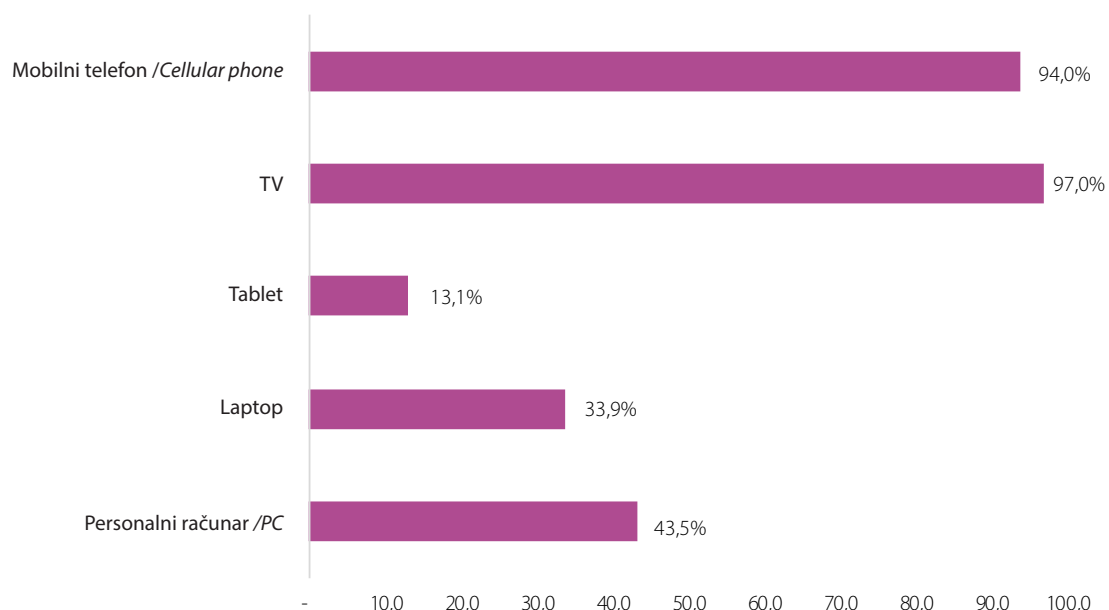
Grafikon 4. Procenat domaćinstava koja imaju pristup računaru, prema mjesečnim neto prihodima domaćinstva, BiH
Graph 4. Percentage of households which have access to the computer, according to monthly net income of the household, BiH



Na pitanje koje se odnosi na uređaje kojima domaćinstvo ima pristup, ispitanici su mogli da daju više odgovora. Istraživanje pokazuje da 97,0% domaćinstva posjeduje TV, a 94,0% domaćinstava 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 domaćinstvima (%), Bosna i Hercegovina
Graph 5. Devices that are in households (%), BiH



Internet u domaćinstvima

Rezultati istraživanja o upotrebi informaciono-komunikacionih tehnologija u domaćinstvima i pojedinačno (IKT-D) u Bosni i Hercegovine, pokazali su sljedeće:

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

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

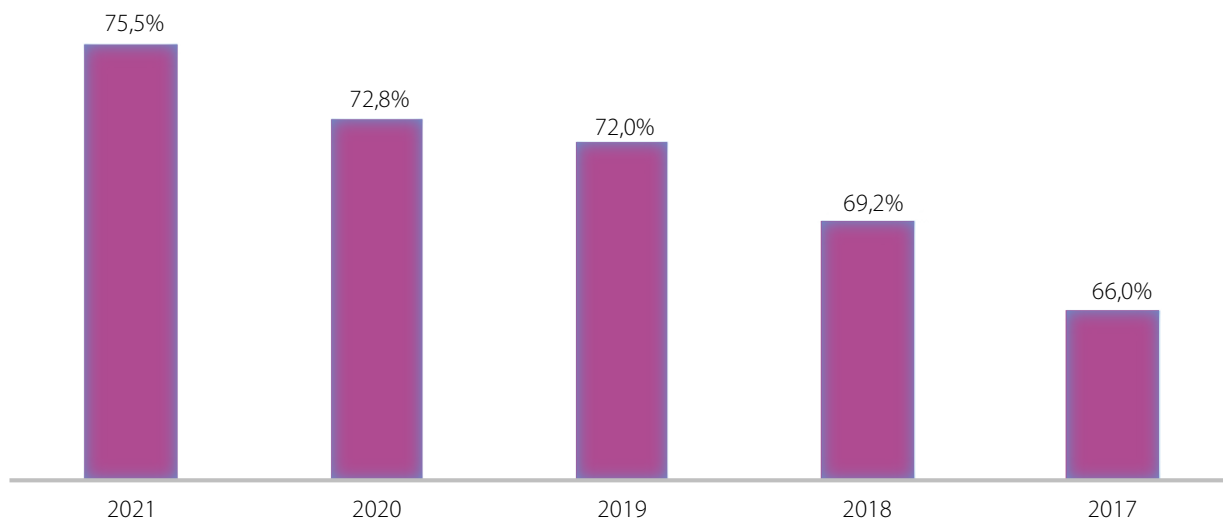
Internet in households

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. Procenat domaćinstava koja poseduju internet priključak, Bosna i Hercegovina
Chart 6. Percentage of households that own internet connection, BIH



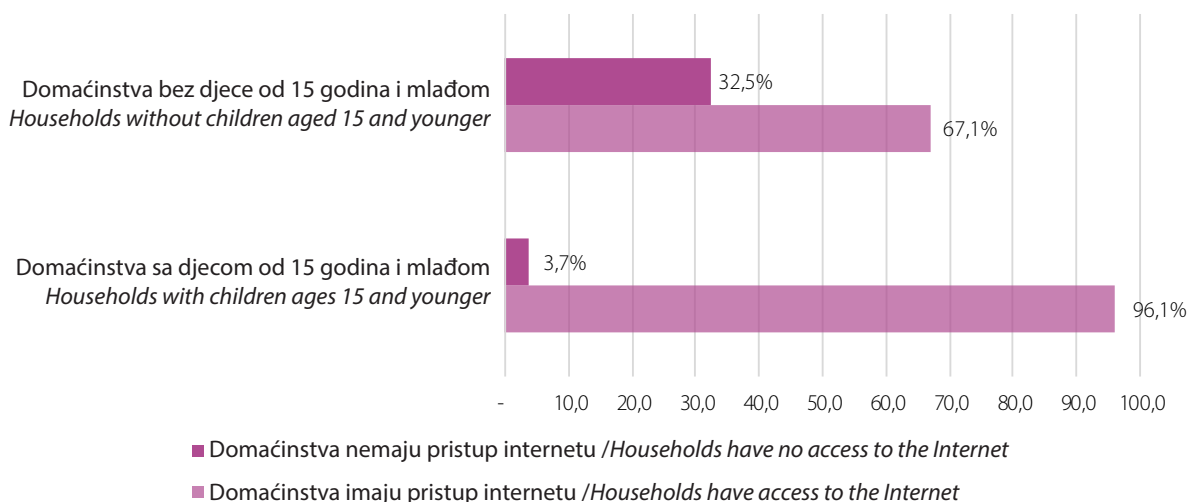
Rezultati istraživanja su pokazali da 96,1% domaćinstava koja imaju djecu ispod 16 godina imaju pristup internetu.

Rezultati istraživanja su pokazali da 67,1% domaćinstava 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.

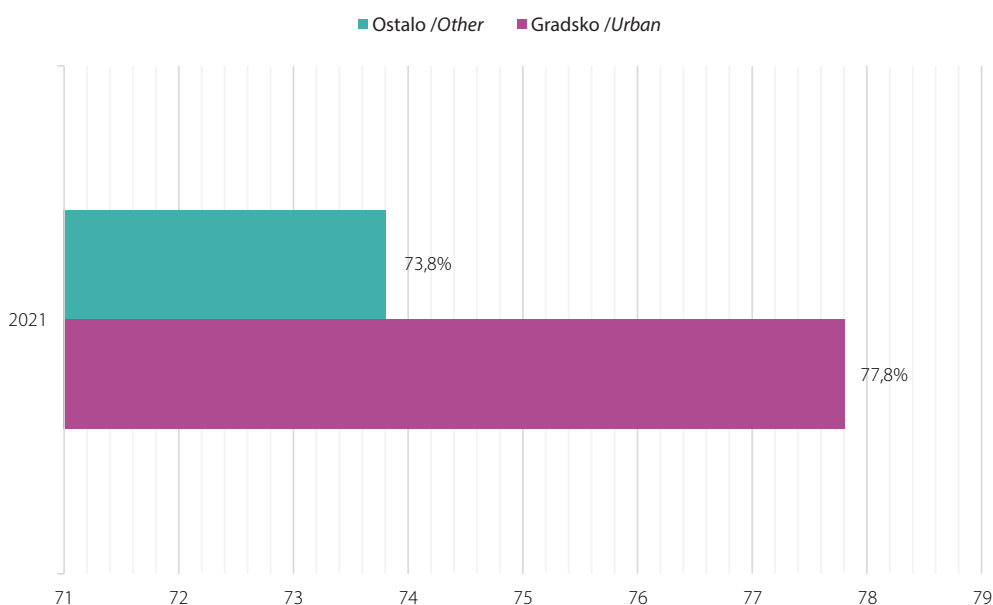
Grafikon 7. Procenat domaćinstava koja imaju pristup internetu, sa djecom od 15 godina i mlađom, BiH
Graph 7. Percentage of households which have access to the Internet, with children aged 15 and younger, BiH



Internet priključak u domaćinstvima varira zavisno o tipu naselja. U gradskim sredinama 77,8% domaćinstava 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. Procenat domaćinstava koja posjeduju internet priključak, prema tipu naselja
Graph 8. Percentage of households that own internet connection, by the type of settlement

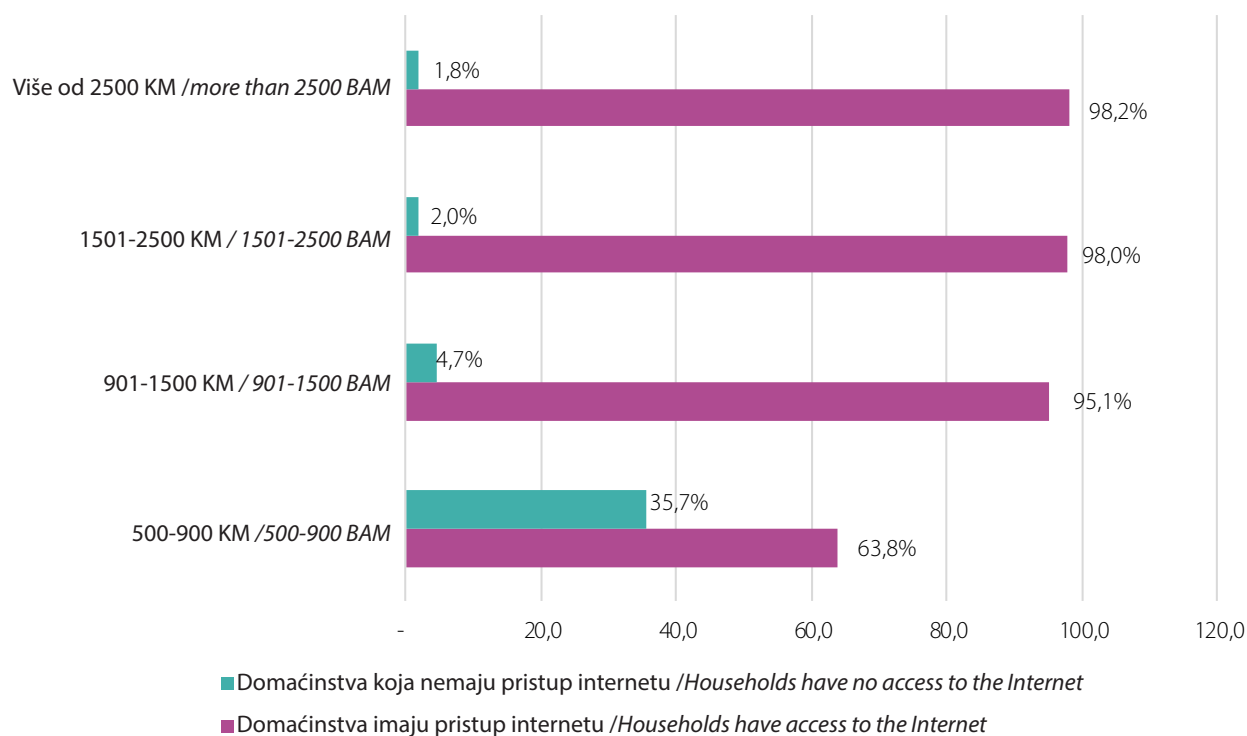


Jaz u pristupu domaćinstava internetu vidljiv je u strukturi domaćinstava po mjesečnom dohotku. Pristup internetu većinom imaju domaćinstva sa mjesečnim primanjima većim od 900 KM (95,1%), 1500 KM (98,0%), odnosno prihodima većim od 2 500 KM (98,2%), dok udio domaćinstava sa primanjima do 900 KM iznosi 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. Procenat domaćinstava koja imaju pristup internetu, prema mjesečnim neto prihodima domaćinstva, BIH 2021.

Graph 9. Percentage of households which have internet connection, according to monthly net income of the household, BIH 2021



Pojedinci: upotreba 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 nivou 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.

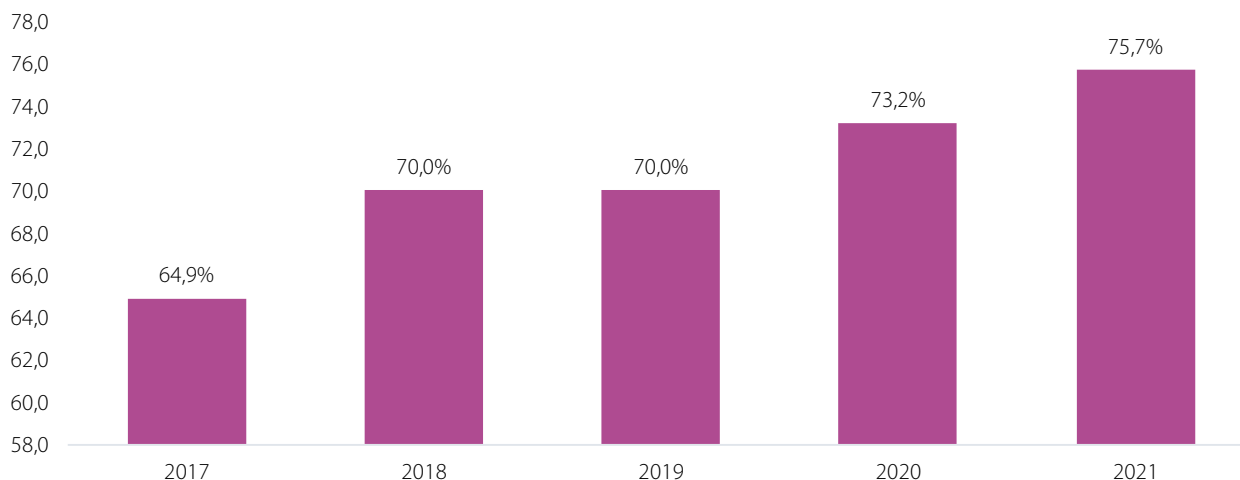
Share of Internet users (in the last three months), by educational attainment level:

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

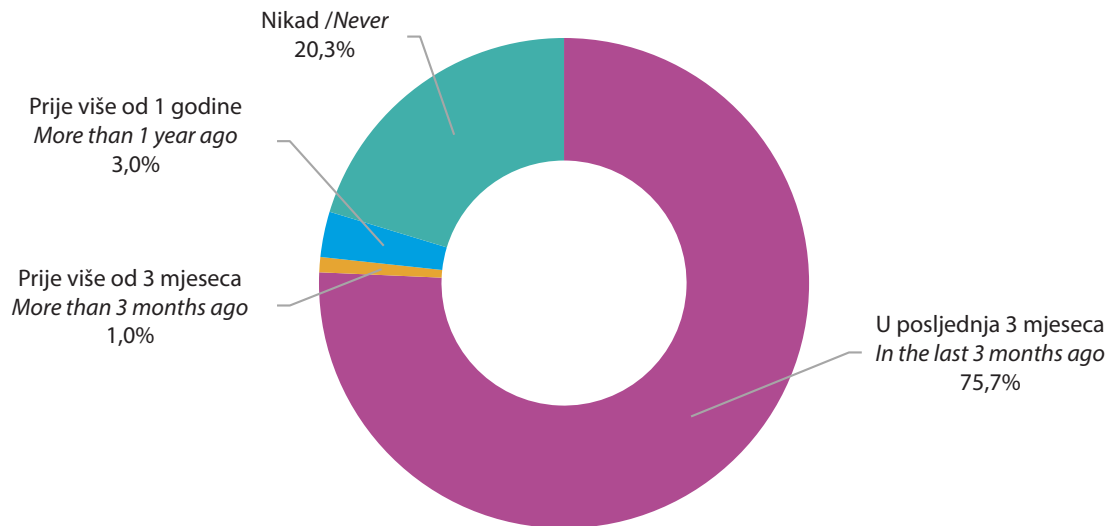
Share of Internet users (in the last three months), by gender:

- Males: 79.2%
- Females: 72.7%

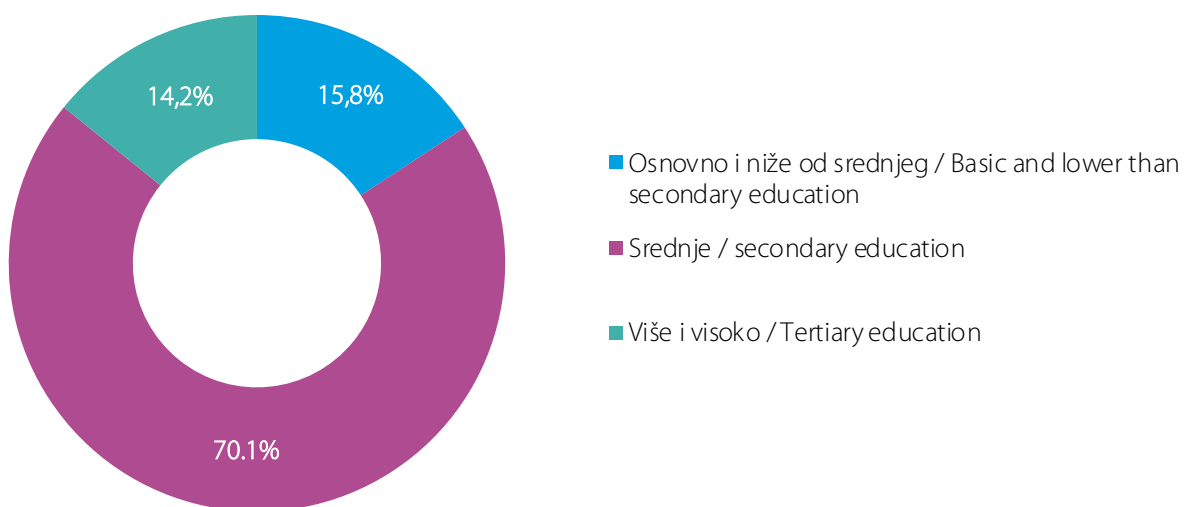
Grafikon 10. Osobe koje su koristile internet u posljednja 3 mjeseca
Graph 10. Persons who used the Internet in the last 3 months



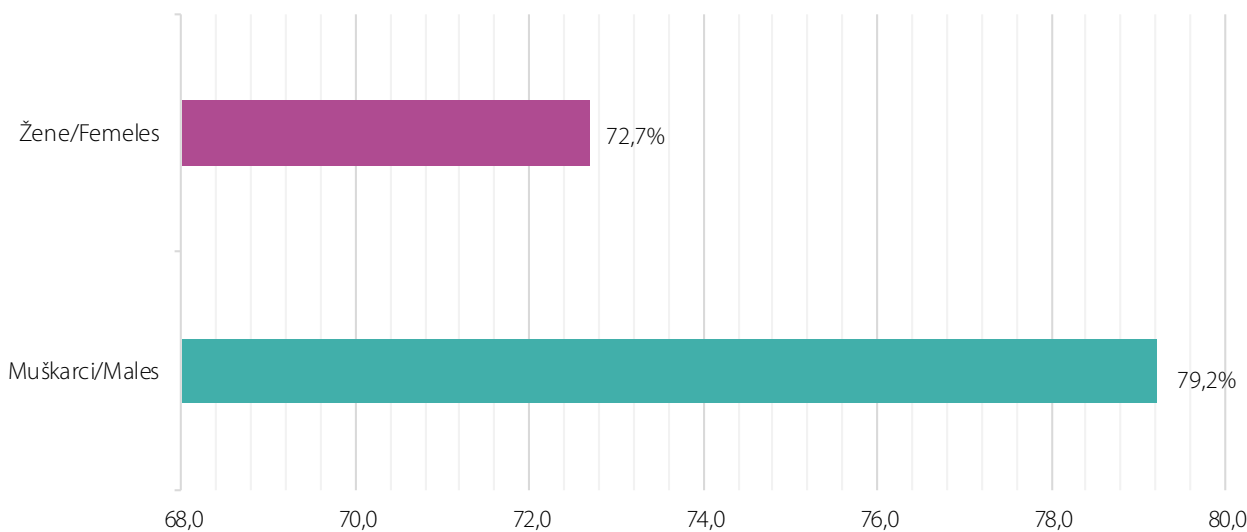
Grafikon 11. Osobe koje su koristile internet, 2021. godina
Graph 11. Persons who used the Internet, 2021



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



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

- 93,6% zaposlenih osoba;
- 80,2% nezaposlenih osoba;
- 100,0% studenata;
- 57,5% penzioneri;
- 55,6% ostali (domaćica, 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 tokom 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.

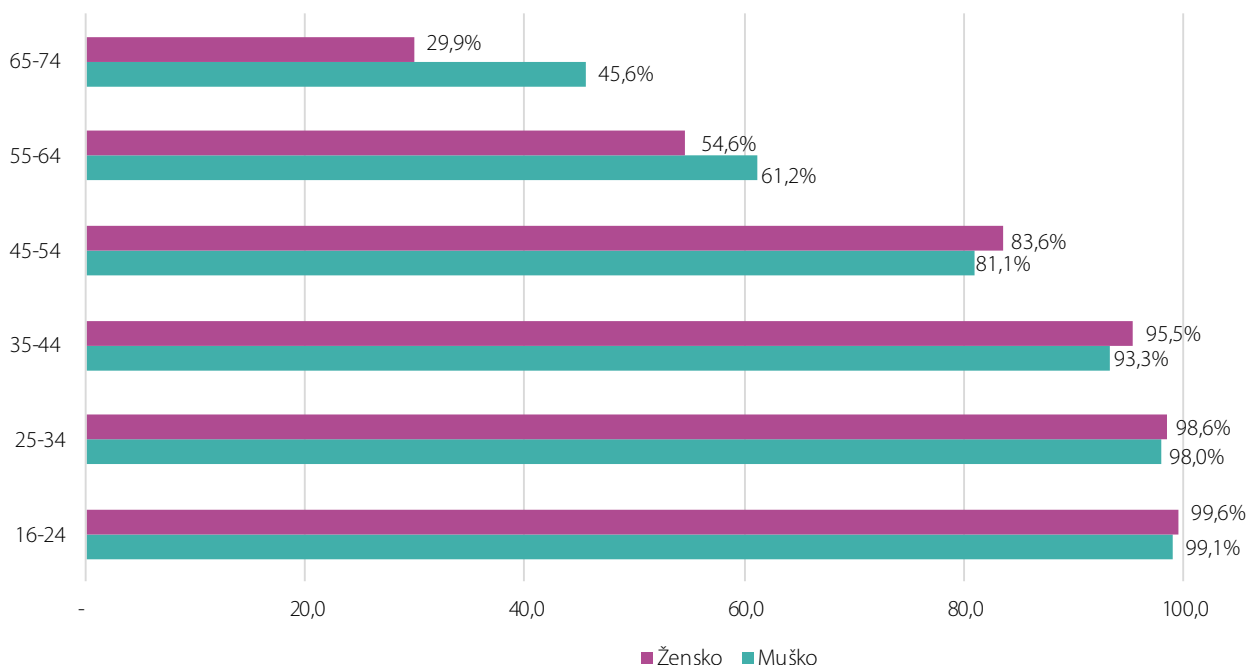
Rezultati istraživanja pokazali su sljedeće:

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.*

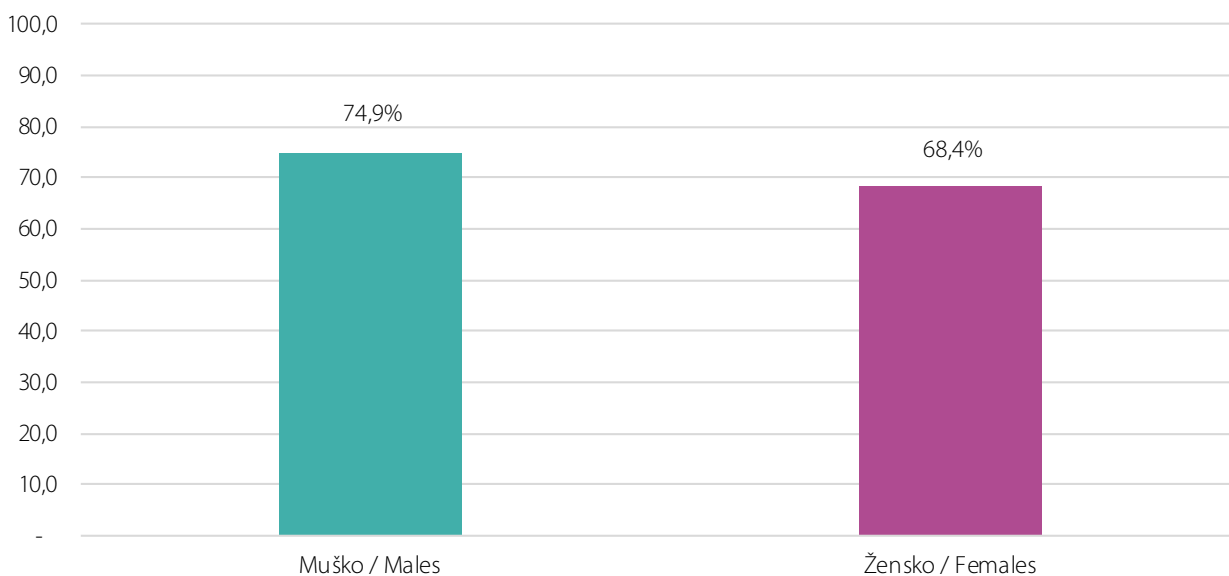
Grafikon 15. Korištenje interneta (svaki dan ili skoro svaki dan), prema spolu i starosti, Bosna i Hercegovina, 2021.¹
Graph 15. Internet usage (every day or almost every day), by gender and age, Bosnia and Herzegovina, 2021¹



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, 2021.²
Graph 16. The share of Internet users (every day or almost every day) by gender, Bosnia and Herzegovina, 2021²



Ispitanici koji su koristili internet tokom 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%), učešće 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%).

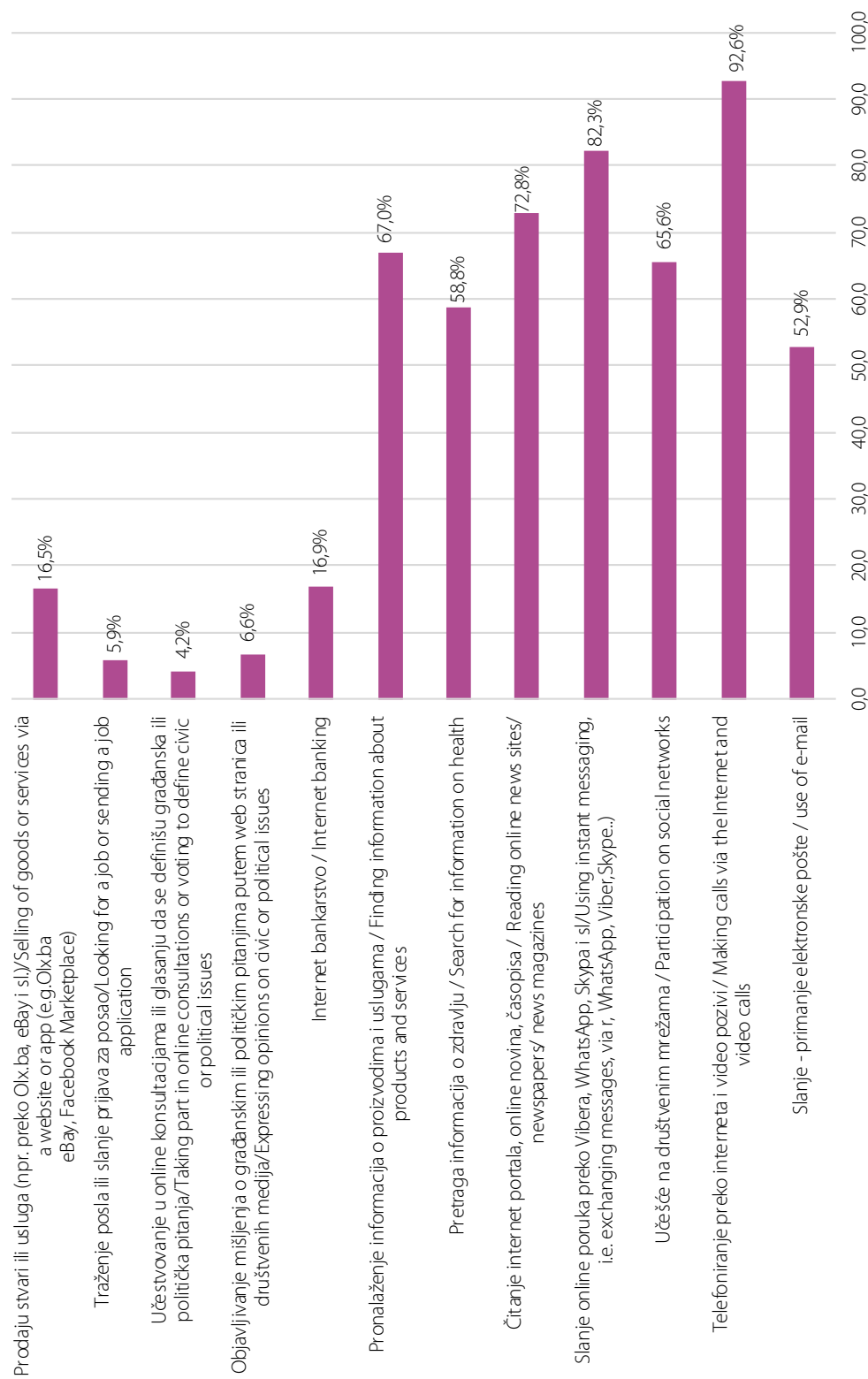
Pretraživanje informacija o zdravlju (npr. rane, bolesti, ishrana, poboljšanje zdravlja i sl.) (58,8%), pronalaženje informacija o proizvodima i uslugama (67,0%), značajan broj ispitanika koristili su internet za slanje / primanje elektronske pošte (e-mail) (52,9%).

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%).

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 procentima, Bosni i Hercegovini, 2021.³
Graph 17. Activities of internet use (for private use) in the last three months, in percentages, Bosnia i Herzegovina 2021³



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 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 učešće 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%.

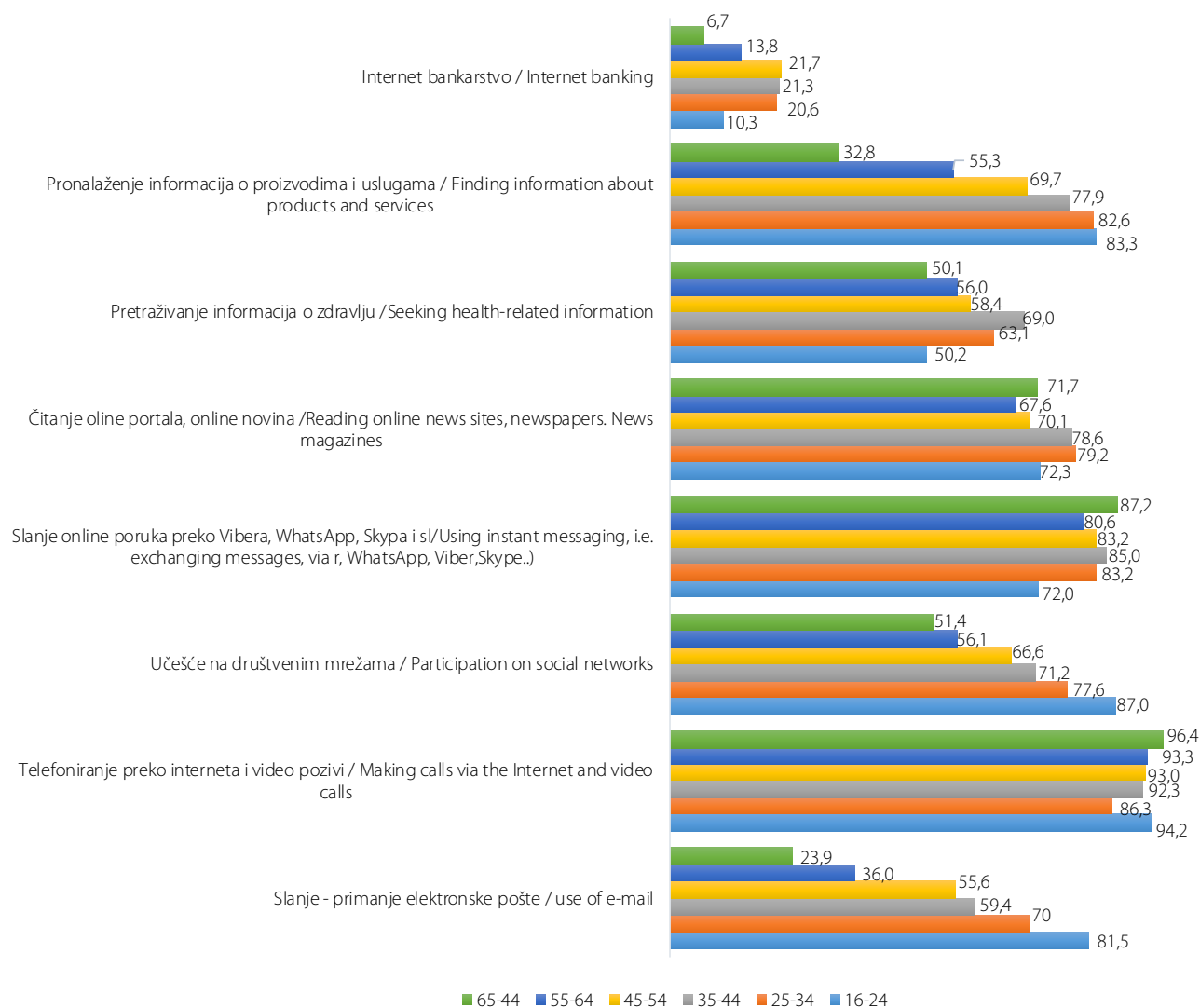
The Internet population of 65 to 74 years is the most common use of the Internet for making calls and internet video calls with 96.4%.

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 procentima, po starosnoj dobi⁴
Chart 18. The most common types of internet use (for private use) in the last three months, in percentages, by age⁴



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 92,0% 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, 2021⁵
Graph 19. The most common types of internet use (for private use) in the last three months, by gender, 2021⁵



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 21,6% ispitanika koji su koristili internet u privatne svrhe, u posljednjih 12 mjeseci, koristili su elektronske 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%.

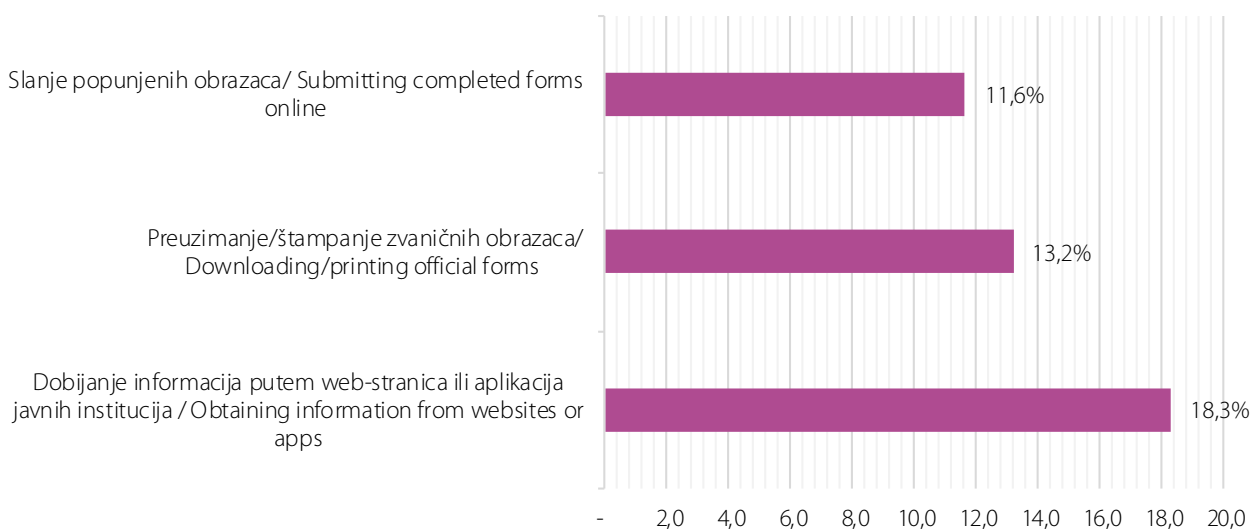
E-government

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).

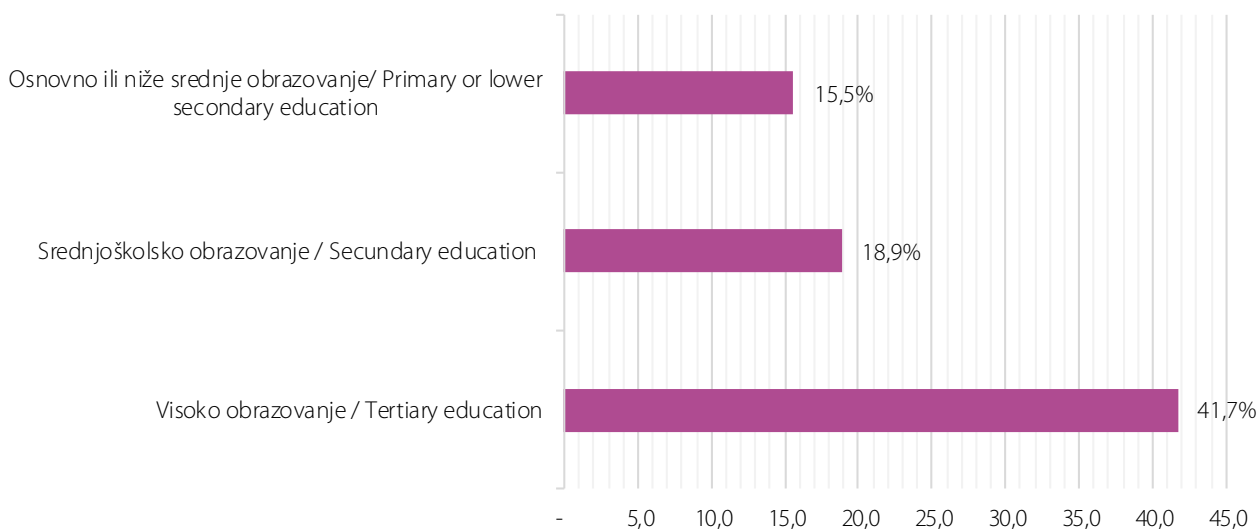
The survey also showed that 18.3% of the internet population used the Internet to obtain information from the public institution's website, and 11.6% of the internet population sent via Internet filled forms to the public administration.

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

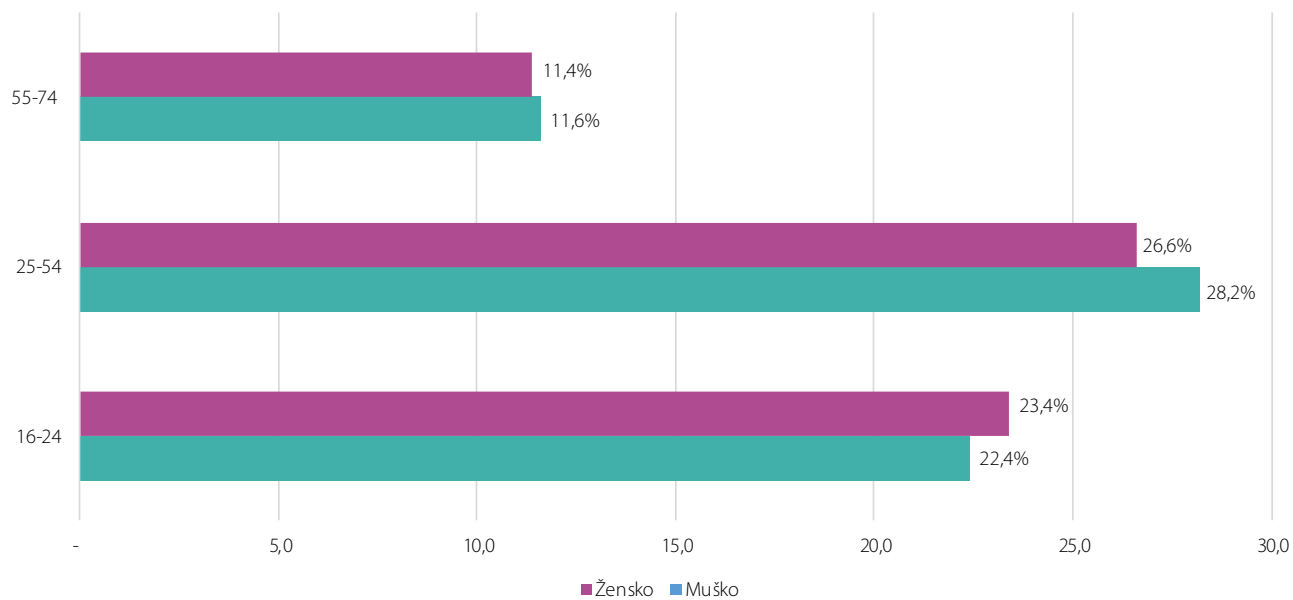
Grafikon 20. Za koju ste od sljedećih usluga javne uprave koristili internet
Graph 20. For which of the following public administration services did you use the Internet?



Grafikon 21. Upotreba interneta radi korištenja usluga javne uprave u posljednjih 12 mjeseci, prema nivou 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. Upotreba 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



Elektronska trgovina⁶

Kada je riječ o vremenskom okviru u kojem su korisnici interneta kupovali/poručivali 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 poručivali 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.

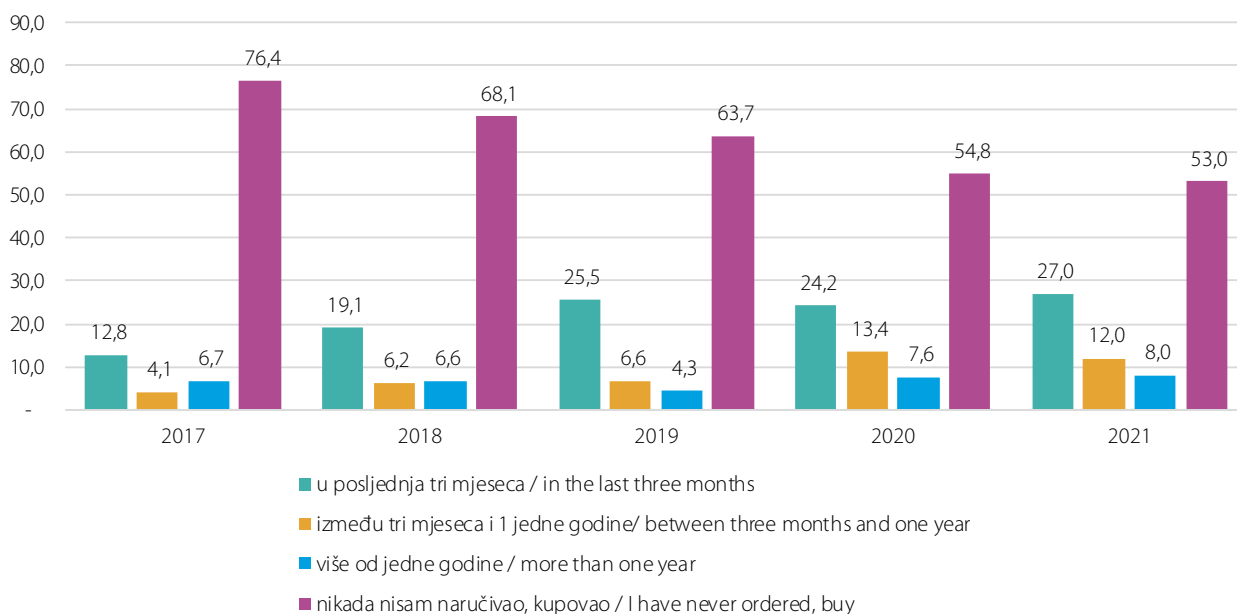
e-commerce⁶

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.

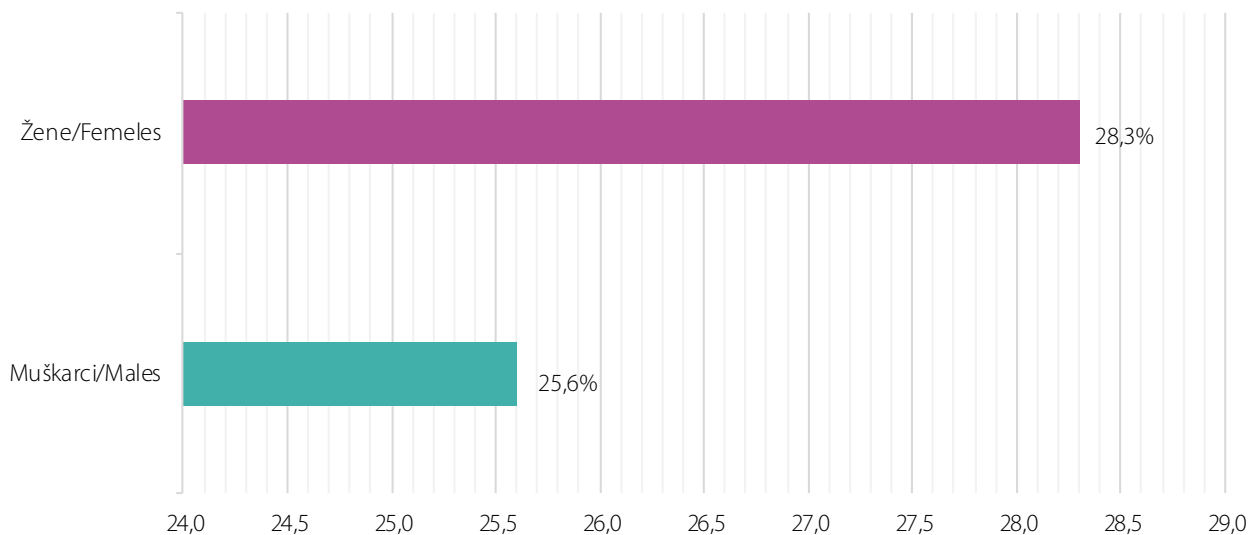
Grafikon 23. Posljednji put (u privatne svrhe) kupili/naručili robu ili usluge putem interneta u procentima
Graph 23. Last time (for private purposes) they bought / ordered goods or services via the Internet in percent



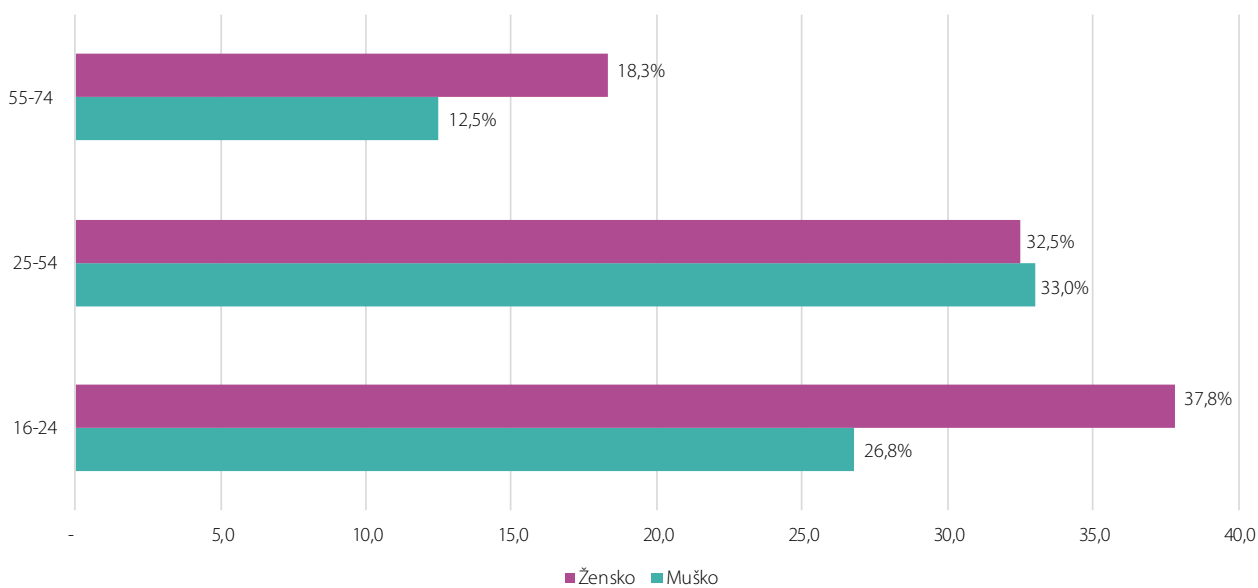
⁶ Podaci se odnose na osobe koje su koristile internet posljednjih 12 mjeseci.

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

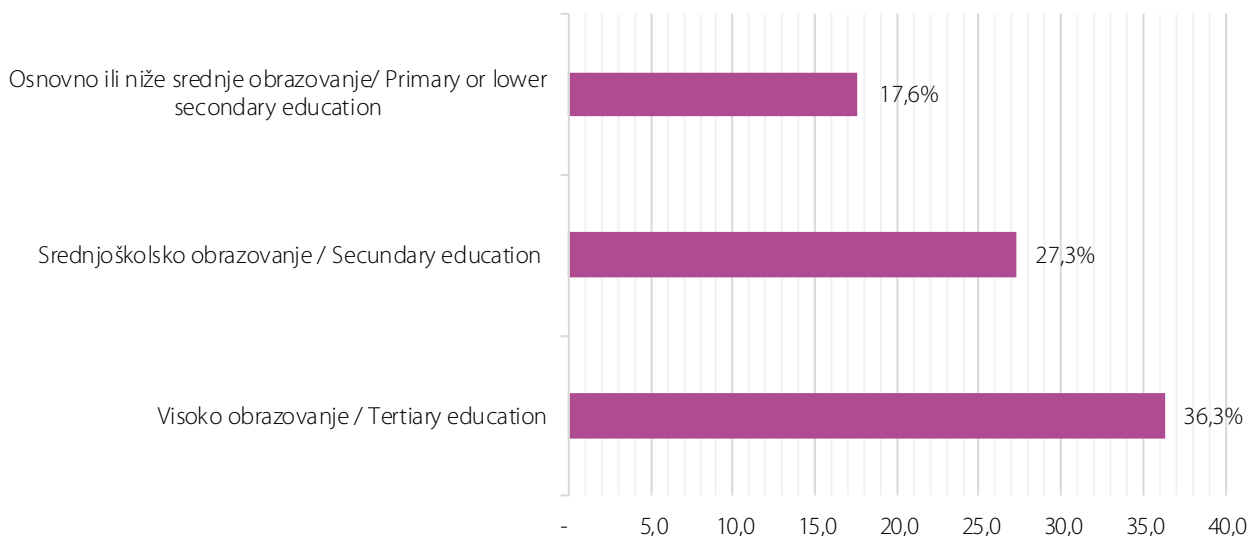


Grafikon 25. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema spolu i starosti, 2021.
Graph 25. Bought /ordered goods or services online in the last three months (for private purposes), by sex and age, 2021



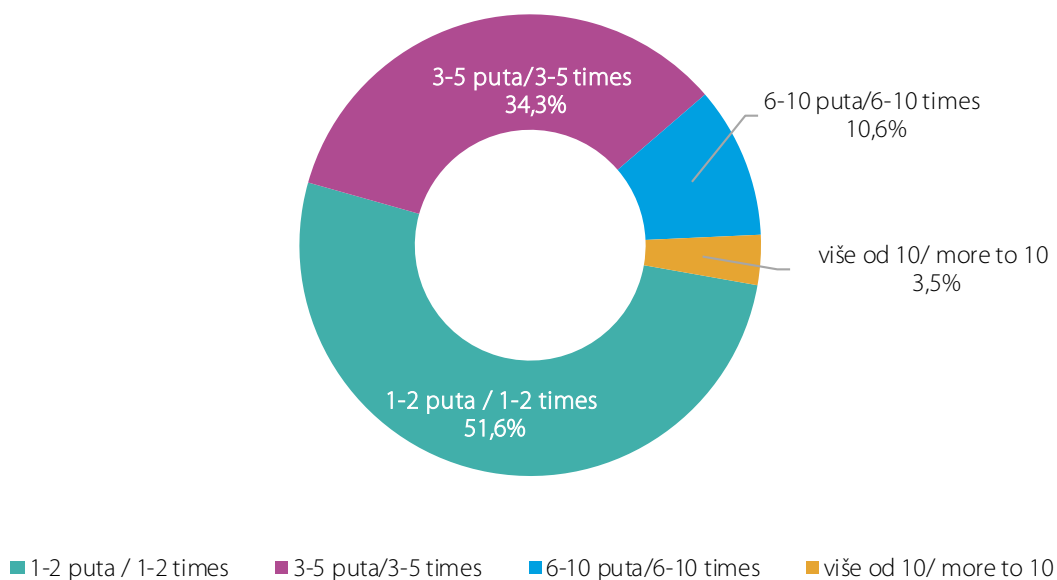
Grafikon 26. Kupili/naručili robu ili usluge putem interneta u posljednja tri mjeseca (u privatne svrhe), prema nivou obrazovanja, 2021.

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

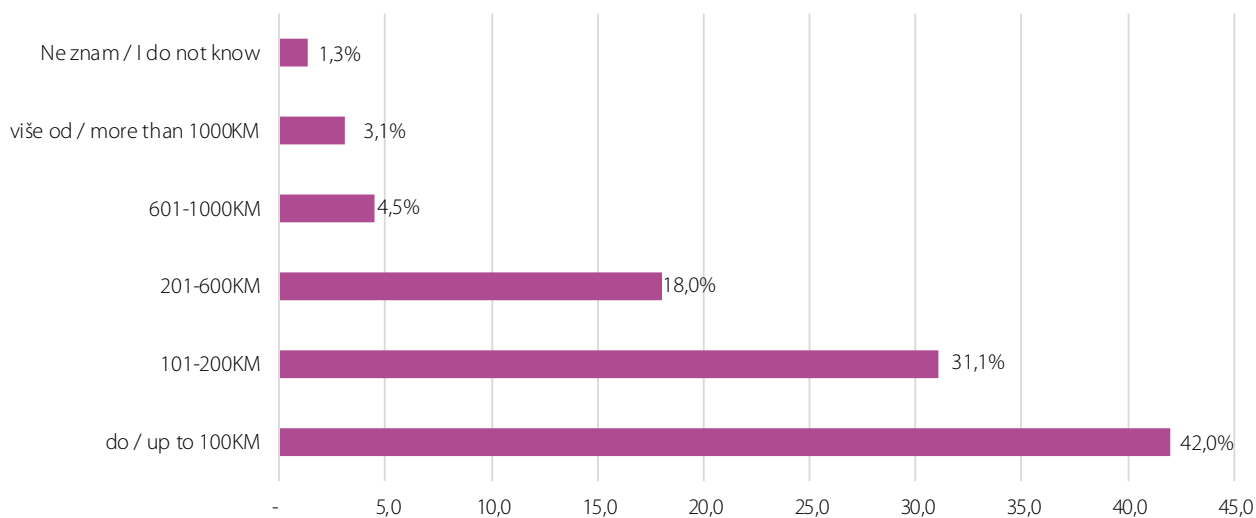


Grafikon 27. Koliko često ste kupovali/naručivali robu ili usluge putem interneta u privatne svrhe u posljednja 3 mjeseca

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)



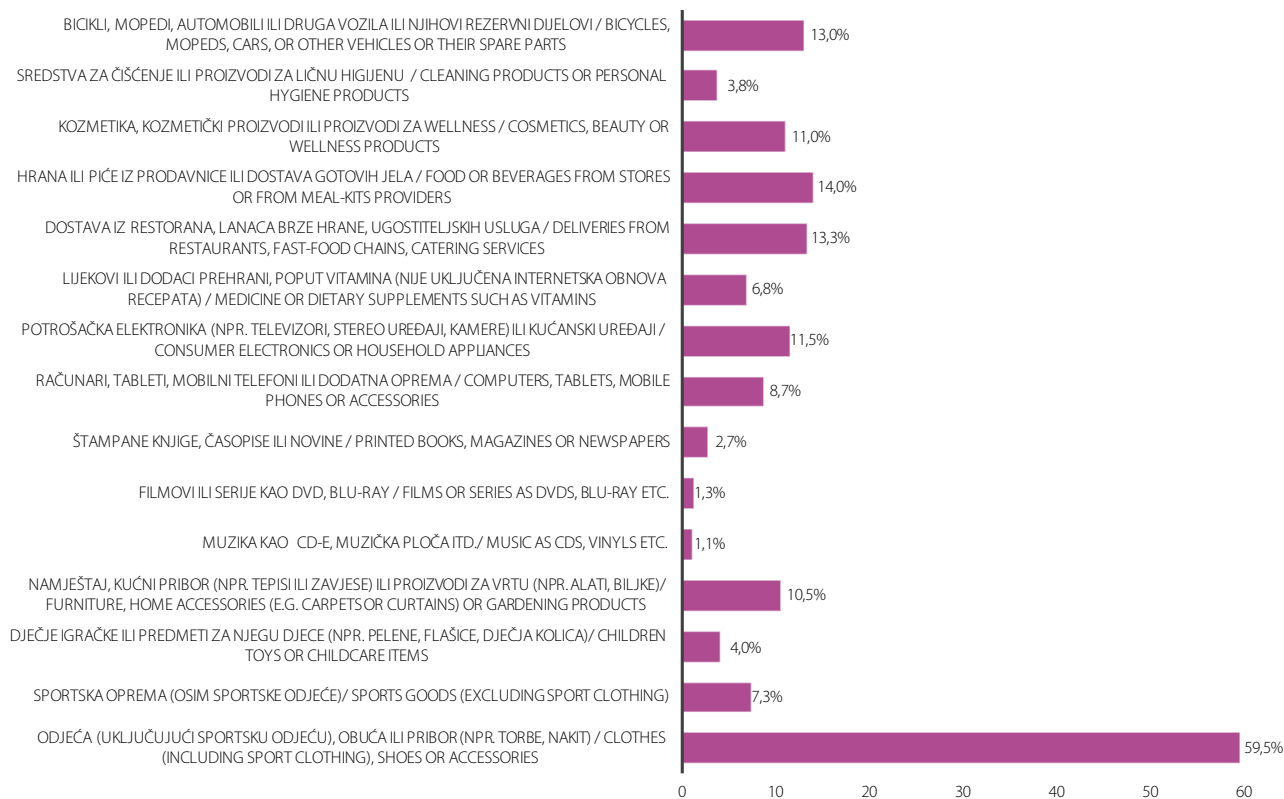
Pojedinci su najčešće naručivali proizvode ili usluge putem interneta u posljednja 3 mjeseca:

- 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. mašina za pranje veša) 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?⁷
Graph 29. What types of goods or services did you buy or order over the Internet for private use in the last 3 months?⁷



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.

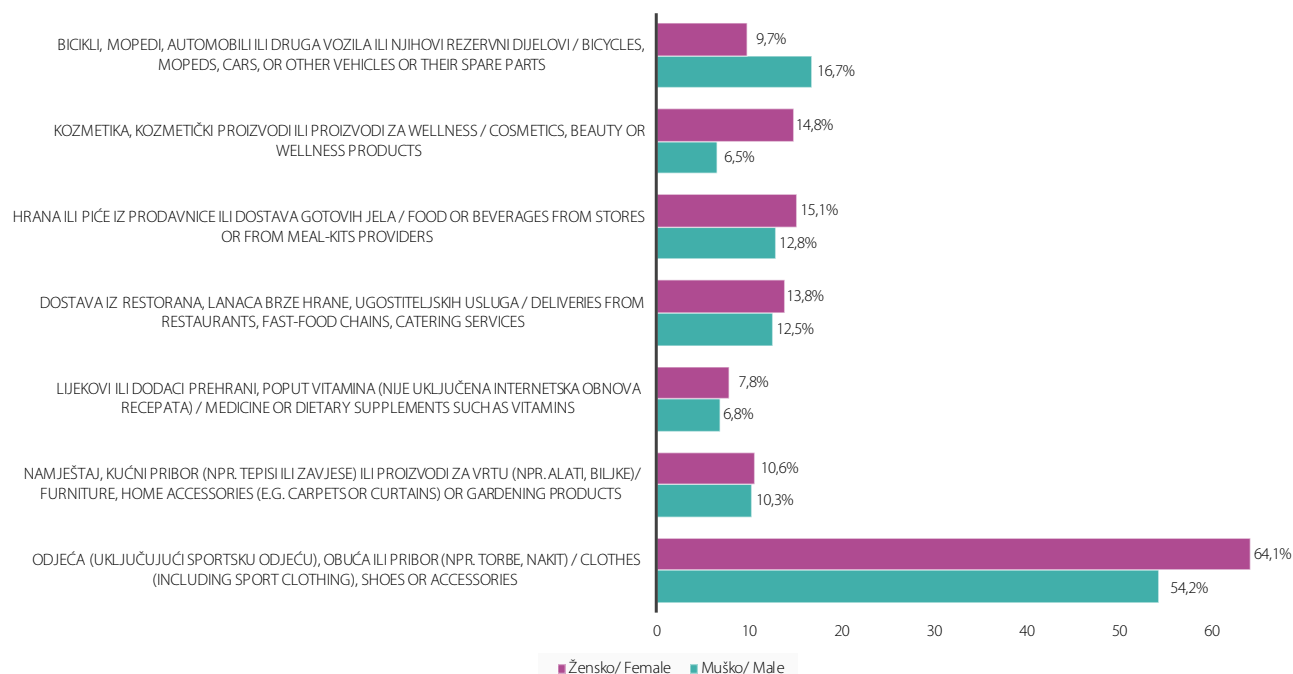
Bicycles, mopeds, cars or other vehicles or their spare parts were ordered online by 16.7% of males and 9.7% of females.

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

⁷ 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?⁸

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 gender⁸



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 "Koji su razlozi što niste kupili/poručili robu ili usluge u privatne svrhe, putem interneta, u posljednja 3 mjeseca?" Ispitanici su odgovorili: Više volim lično da kupujem, volim da pogledam 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 zainteresovan, 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%.

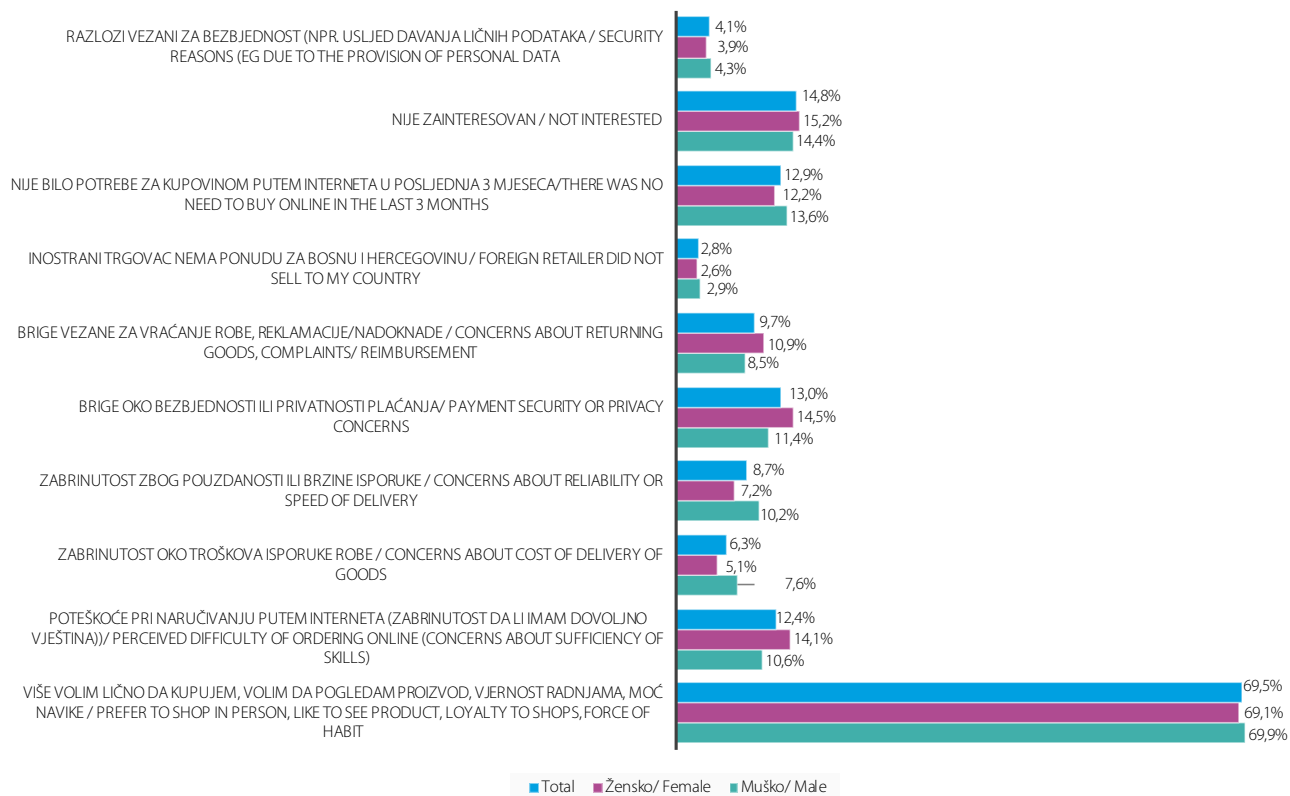
Payment security or privacy concerns, 13.2%;
There was no need to buy online in the last 3 months, 13.1%.

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

⁸ 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?⁹

Graph 31. What were the reasons for not buying anything via a website or app in the last 3 months, by gender⁹



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

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

E-VJEŠTINE¹⁰

Poboljšanje digitalne pismenosti, znanja i uključivosti jedno je od sedam prioritarnih područja Digitalne agende za Evropu, jedne od ključnih inicijativa Evropske komisije u okviru Strategije Evropa 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-SKILLS¹⁰

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.

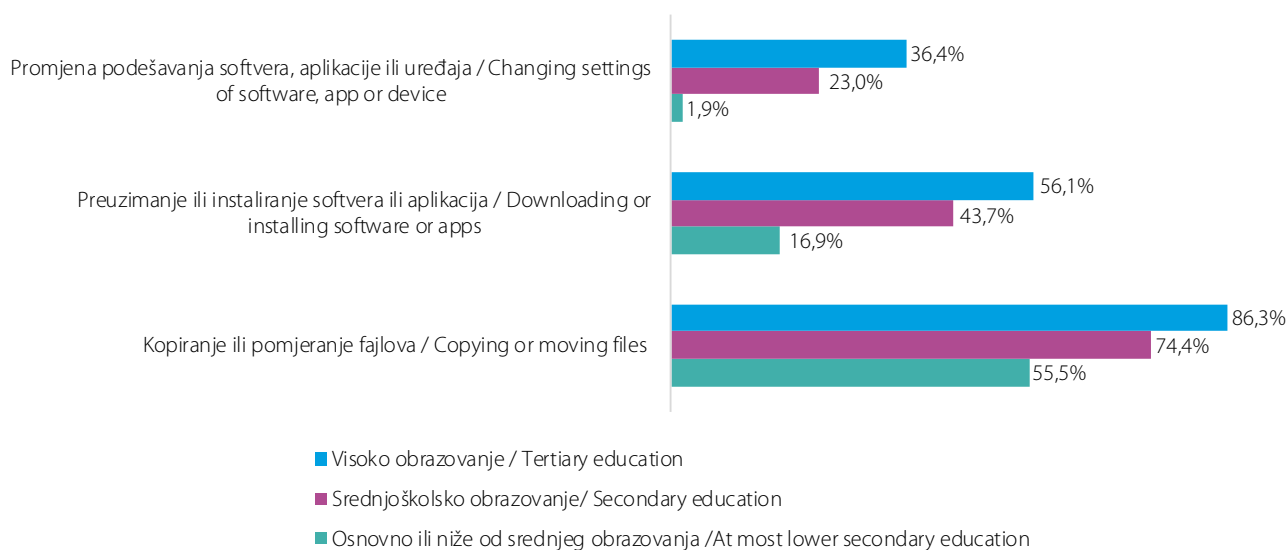
The questions in the e-skills module concern activities done for educational, professional, or private purposes, via any device (e.g. desktop computer, laptop, tablet, mobile or smartphone, smart devices, etc. On the question: "Which of the following activities have you carried out in the last 3 months?"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

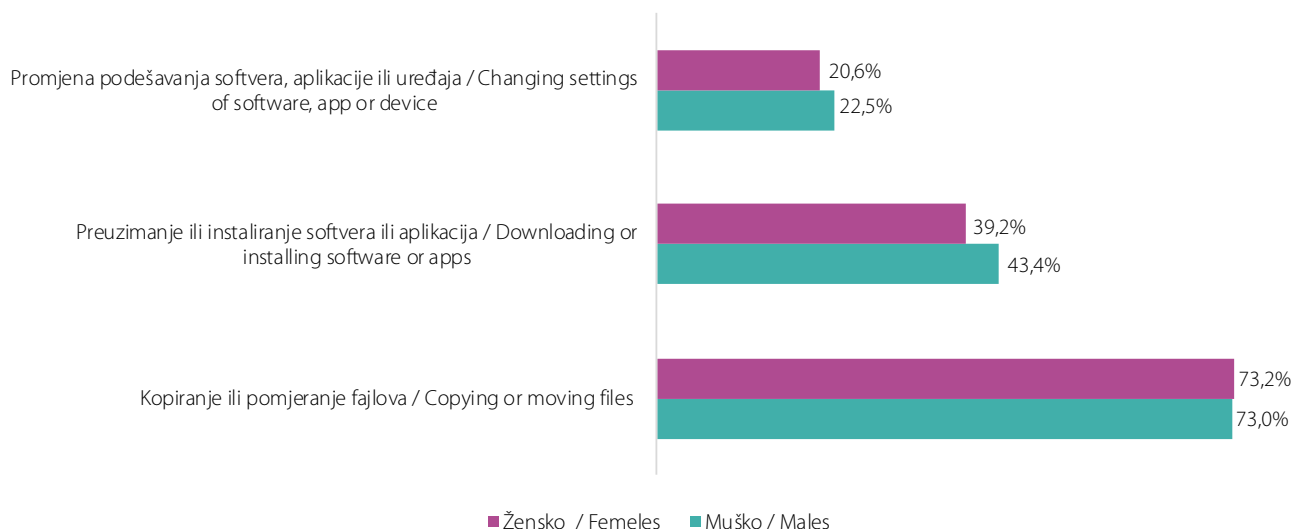
Grafikon 32. Koje od sljedećih aktivnosti ste provodili u posljednja 3 mjeseca, prema nivou obrazovanja, 2021?
Graph 32. Which of the following activities have you carried out in the last 3 months, by education level, 2021?



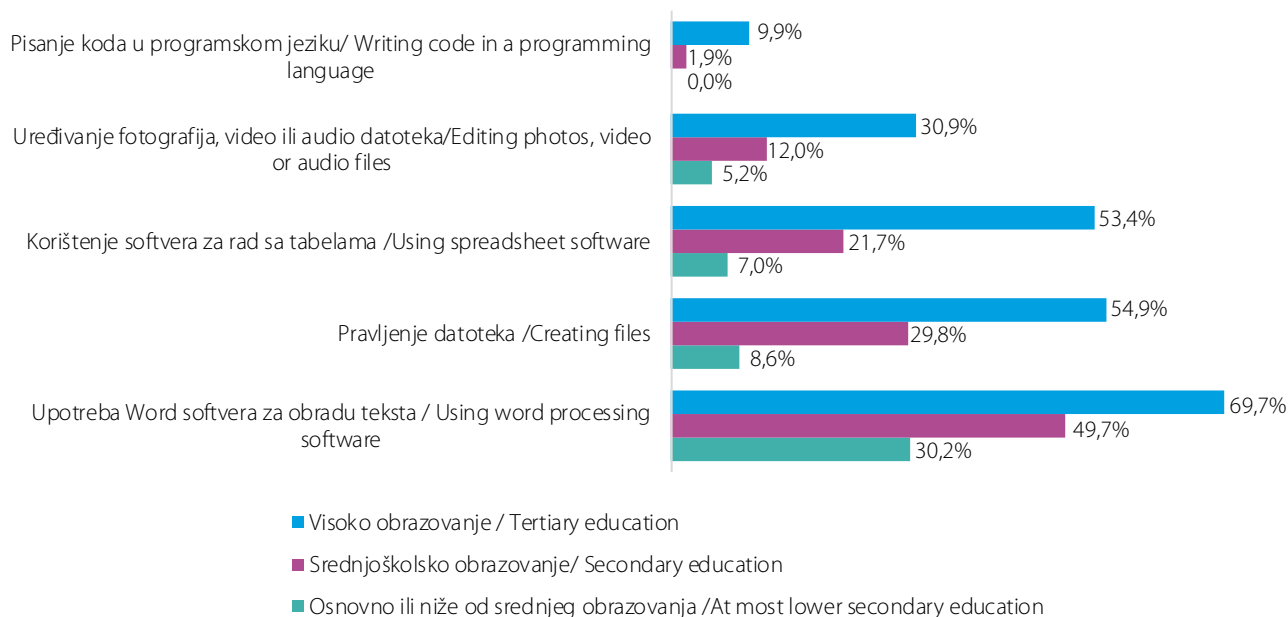
¹⁰ Podaci se odnose na pojedince koji koriste internet u zadnjih 3 mjeseci.

¹⁰ 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 nivou 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 preduzimali 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, tabelu, grafikon, animaciju, zvuk, 30,0%;
Korištenje softvera za rad sa tabelama, 23,8%;

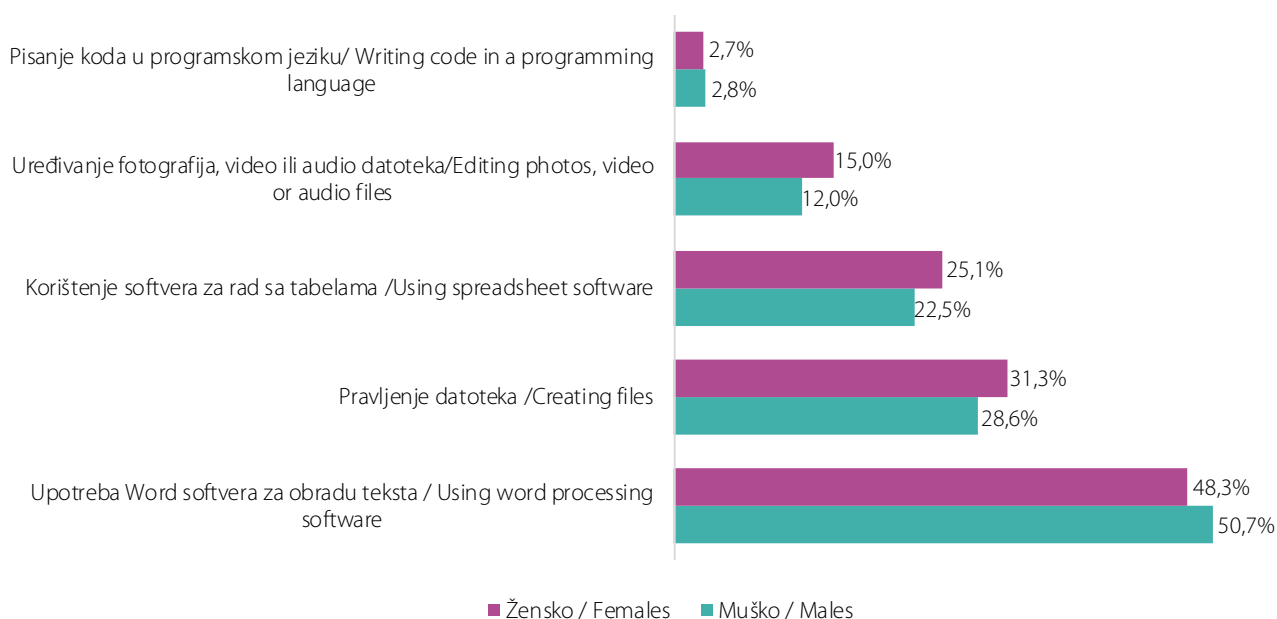
Which of the following software-related activities have you carried out in the last 3 months? To the answers offered, individuals responded:

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 tabelama (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%.

Графикон 35. Које од сљедећих активности сте спроводили у посљедња 3 мјесеца, према полу, 2021?
Graph 35. Which of the following activities have you carried out in the last 3 months, by gender, 2021?



PREDUZEĆA
ENTERPRISES

Uzorak

Istraživanje o upotrebi informaciono-komunikacionih tehnologija u preduzećima provedeno je na reprezentativnom uzorku od 2 745 preduzeća na teritoriji Bosne i Hercegovine. Stopa odgovora je 89,40% (2 454 preduzeća).

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
Snabdijevanje električnom energijom, plinom, parom i vodom; upravljanje 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
Saobraćaj 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
Informisanje i komunikacije <i>Information and communication</i>	84	42	9	130
Poslovanje nekretninama <i>Real estate</i>	26	11	0	37
Stručne, naučne 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 komunikacione opreme / <i>Repair and maintenance of computers and communication equipment</i>	6	1	0	8
Ukupno Total	1 316	856	223	2 276
Od čega IKT sektor/ICT sector (u: 26.1-26.4+ 26.8+46.5+ 58.2+61+62+63.1+95.1)	81	29	6	116

GLAVNI INDIKATORI
Internet u preduzećima

Rezultati istraživanja o upotrebi informaciono-komunikacionih tehnologija u preduzećima (IKT-P) u Bosni i Hercegovine, pokazali su sljedeće:

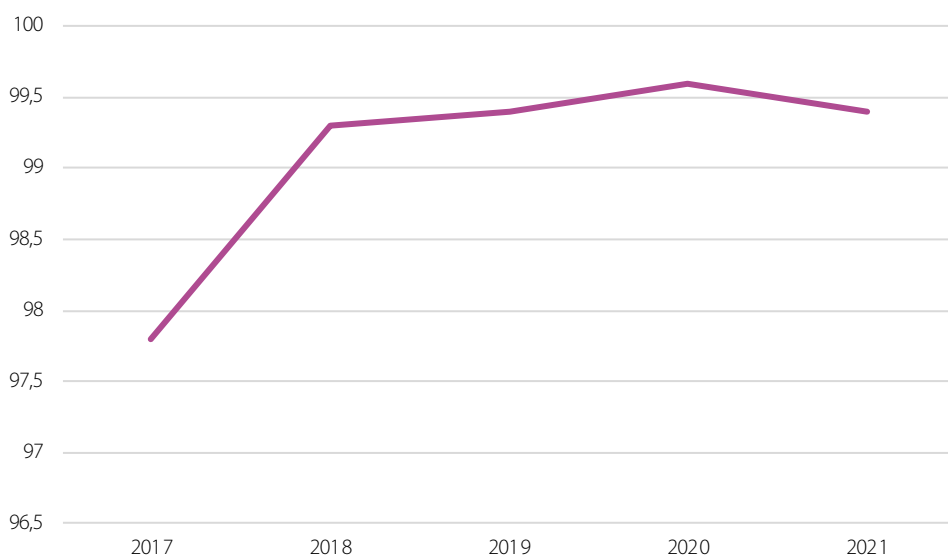
- Da 99,4% preduzeća imaju pristup internetu;
- Od ukupnog broja preduzeća koja imaju pristup internetu, fiksni širokopojasni priključak (npr. ADSL, SDSL, VDSL, kablovske mreže, optičke mreže) posjeduje 98,5% preduzeća.

MAIN INDICATORS
Internet in enterprises

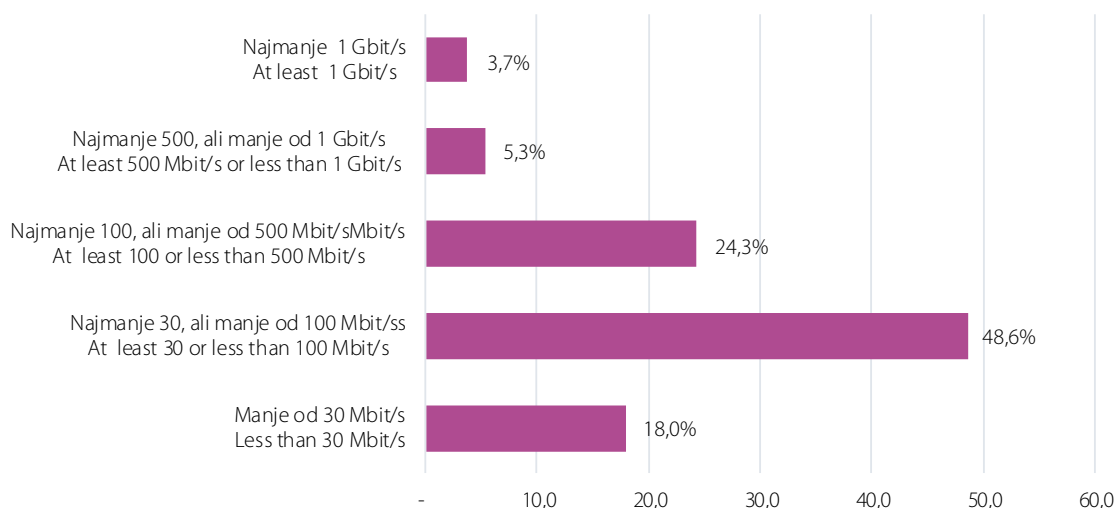
The results of the survey on the use of information and communication technologies in enterprises (ICT-ENT) in Bosnia and Herzegovina have shown the following:

- 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. Preduzeća koja imaju pristup internetu, u procentima
Graph 1. Enterprise have internet access, in percent



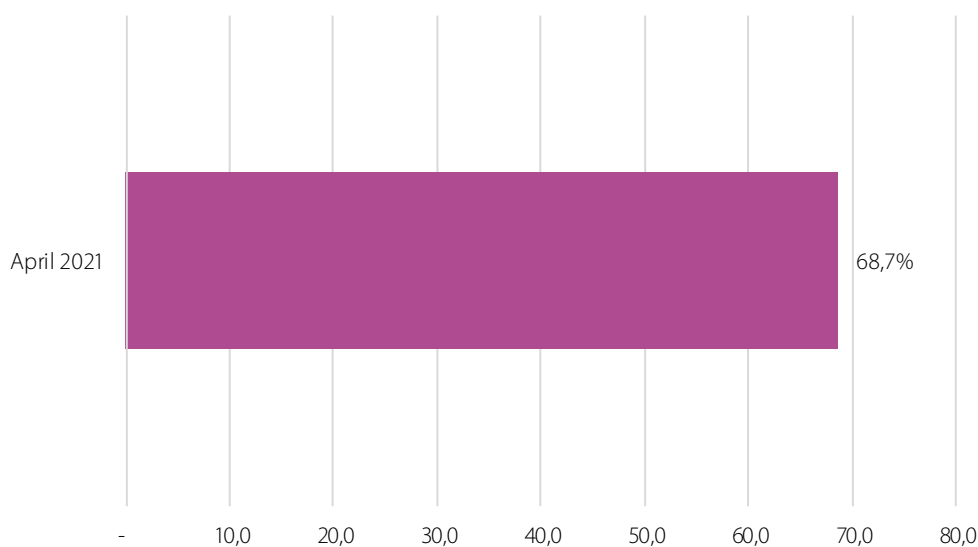
Grafikon 2. Koja je maksimalna brzina internet konekcije u vašem preduzeću (definisana ugovorom sa internet providerom) 2021? /Graph 2. What is the maximum speed of the Internet connection in your enterprises (defined by agreement with the Internet provider) 2021?



Rezultati istraživanja pokazuju da 68,7% preduzeća 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.

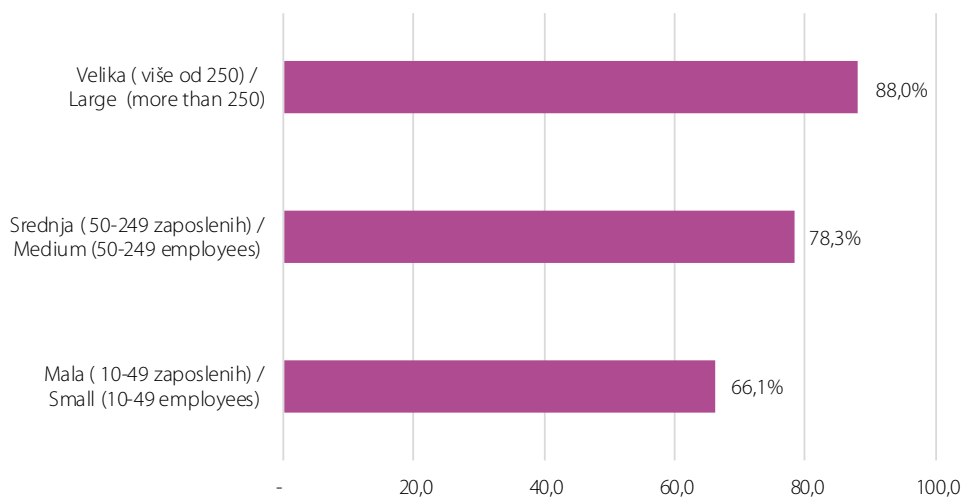
Grafikon 3. Da li vaše preduzeće osigurava prijenosne uređaje koji omogućavaju mobilnu internet vezu, koristeći mobilne telefonske mreže za poslovne potrebe? /Graph 3. Does your enterprise provide portable devices that allow a mobile connection using mobile telephone networks for business purposes?



Analiza preduzeća prema veličini pokazuje nam da mobilnu internet konekciju upotrebom prijenosnih uređaja najviše koriste velika preduzeća (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. Preduzeća 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% preduzeća.

Kada pogledamo strukturu preduzeća prema veličini, dobijamo sljedeće rezultate:

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

Website

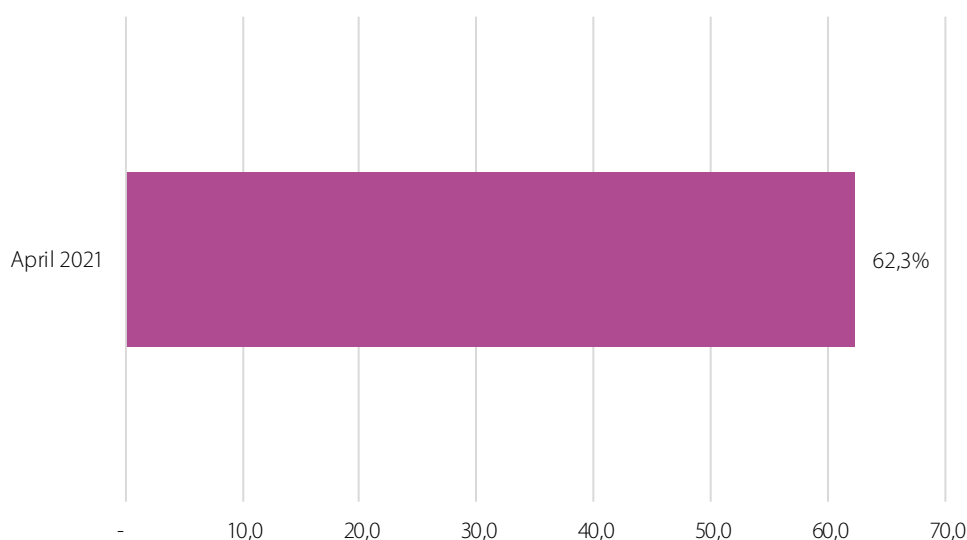
• 62.3% of enterprises had website;

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.

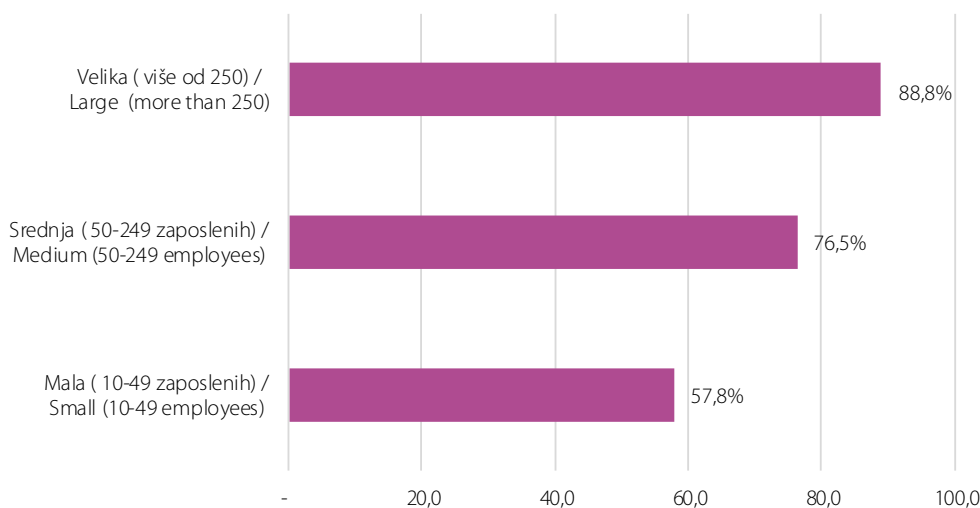
Grafikon 5. Procenat preduzeća koja imaju web stranicu

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

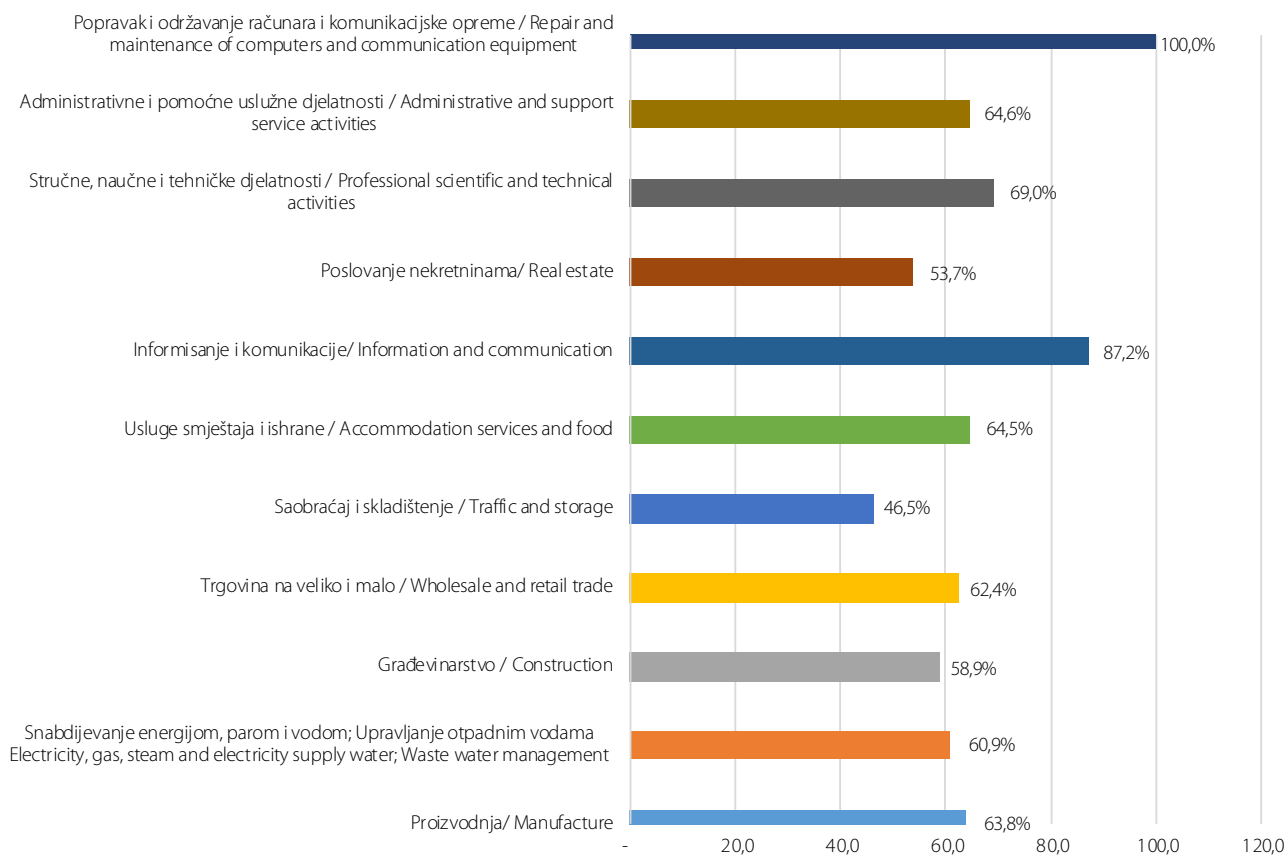


Grafikon 6. Procenat preduzeća koja imaju web stranicu, prema veličini preduzeća

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



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



Preduzeća posredstvom web stranice najčešće pružaju:

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

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

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

Kada pogledamo strukturu preduzeća prema veličini, dobijamo sljedeće rezultate:

- 69,3% velikih preduzeća koristi neke od društvenih mreža;
- 59,2% srednjih preduzeća koristi neke od društvenih mreža;
- 56,0% malih preduzeća 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%);*

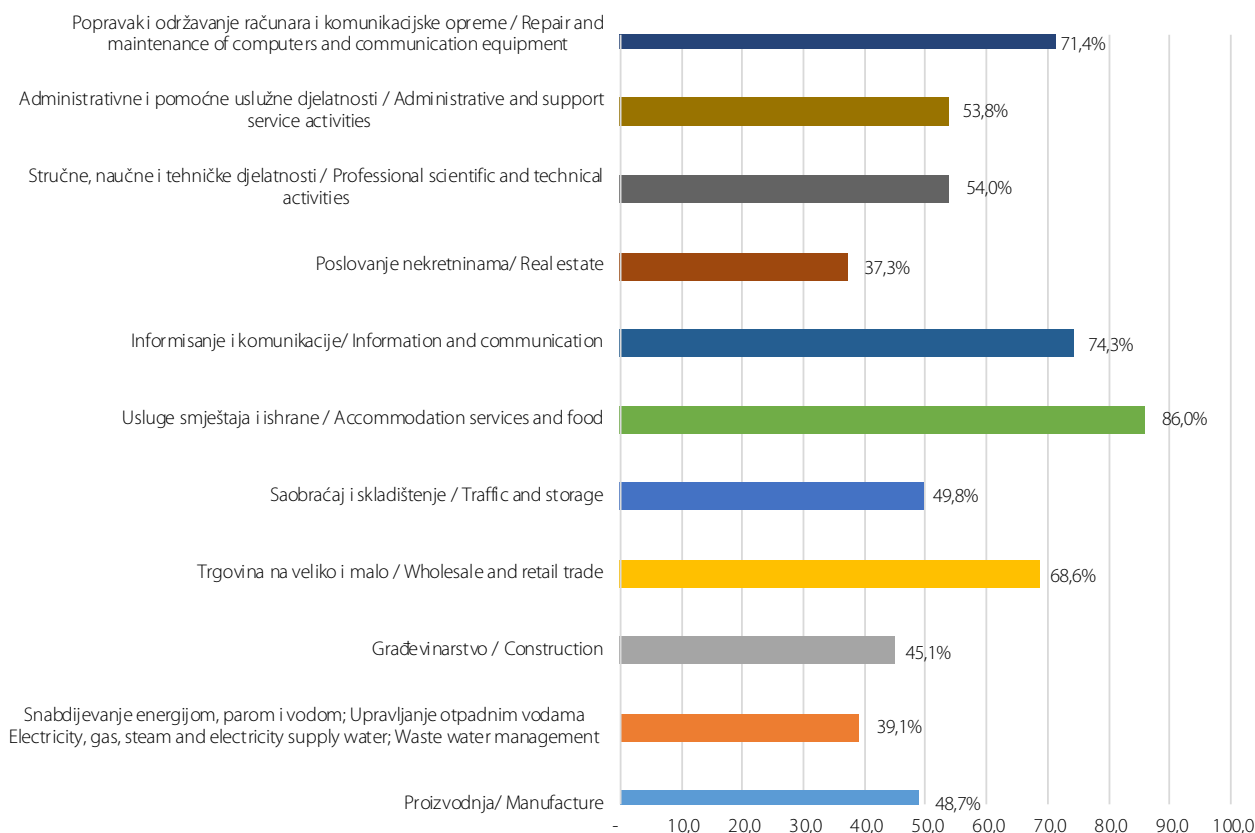
The survey showed that 56.7% enterprise use some of the social networks.

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,%).

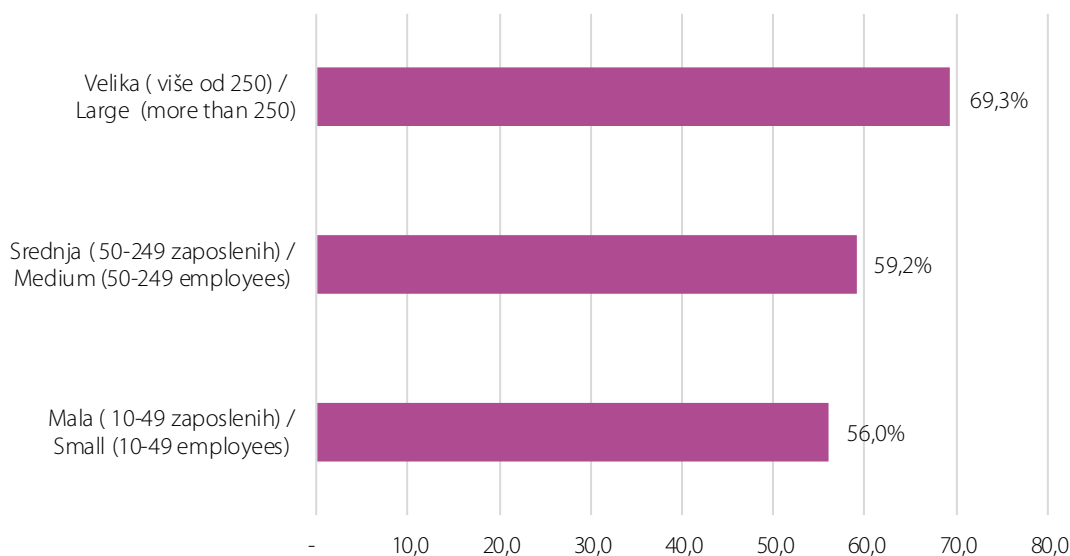
When we look at the structure of enterprises by size, we get the following results:

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



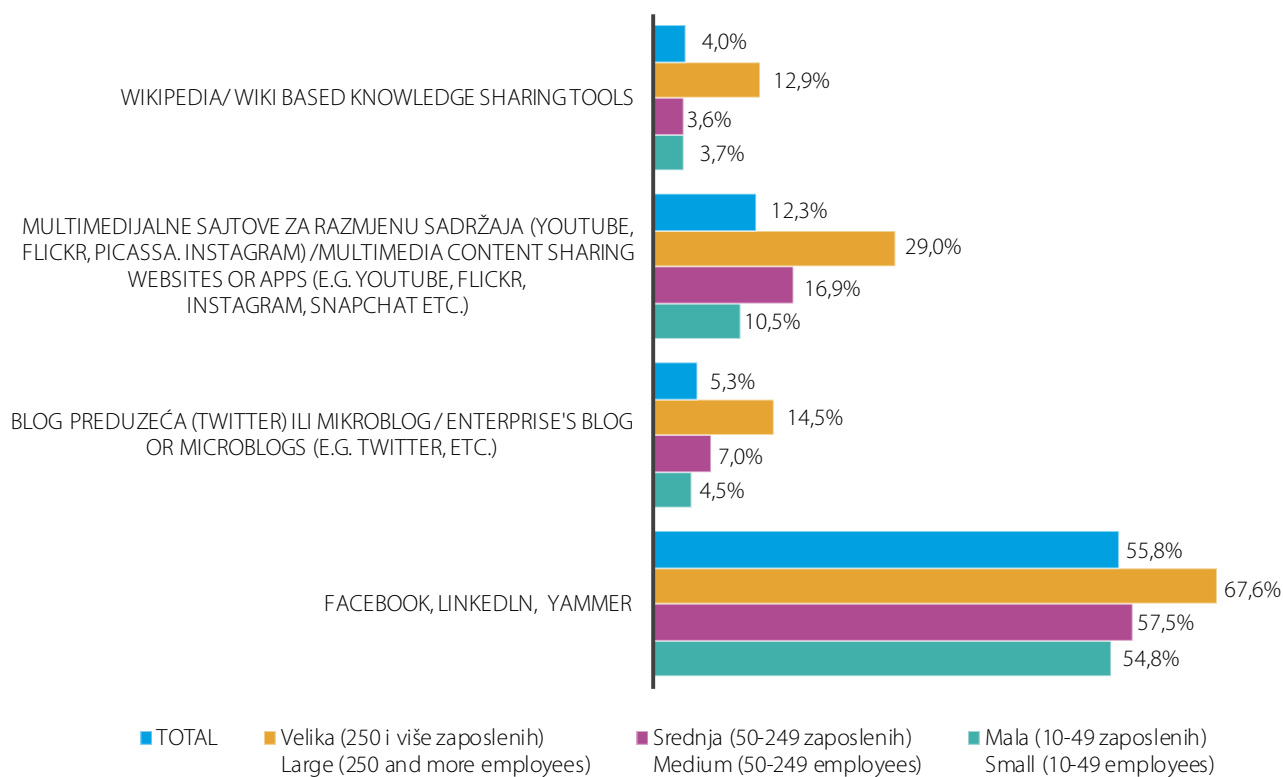
Grafikon 9. Procenat preduzeća koja koristi neke od društvenih mreža, prema veličini preduzeća
Graph 9. Percentage of companies that use some of the social networks, according to enterprises size



Istraživanje je pokazalo da preduzeća 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. Procenat preduzeća koja koristi društvene mreže, prema veličini preduzeća 2021.
Graph 10. The percentage of companies that pay the cloud services, by enterprise size 2021



Elektronska trgovina

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

Kada pogledamo strukturu preduzeća prema veličini, dobijamo sljedeće rezultate:

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

E-Commerce

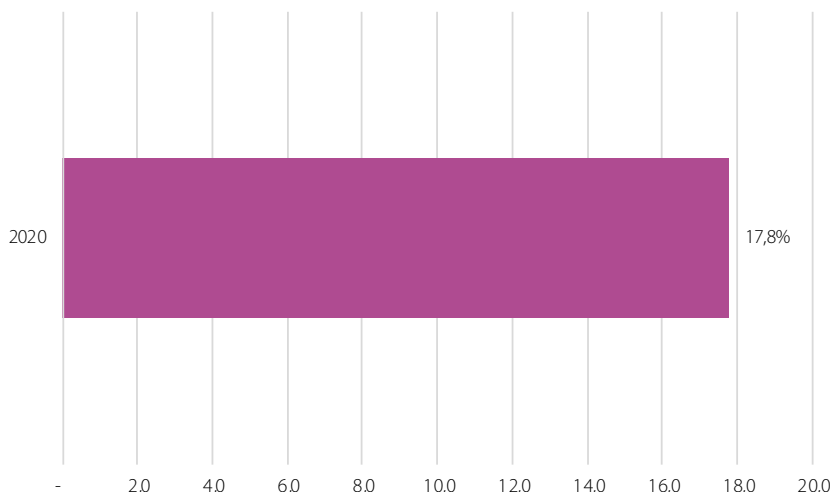
In 2020. year, 17.8% of enterprises in Bosnia and Herzegovina have web sales of goods or services.

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.

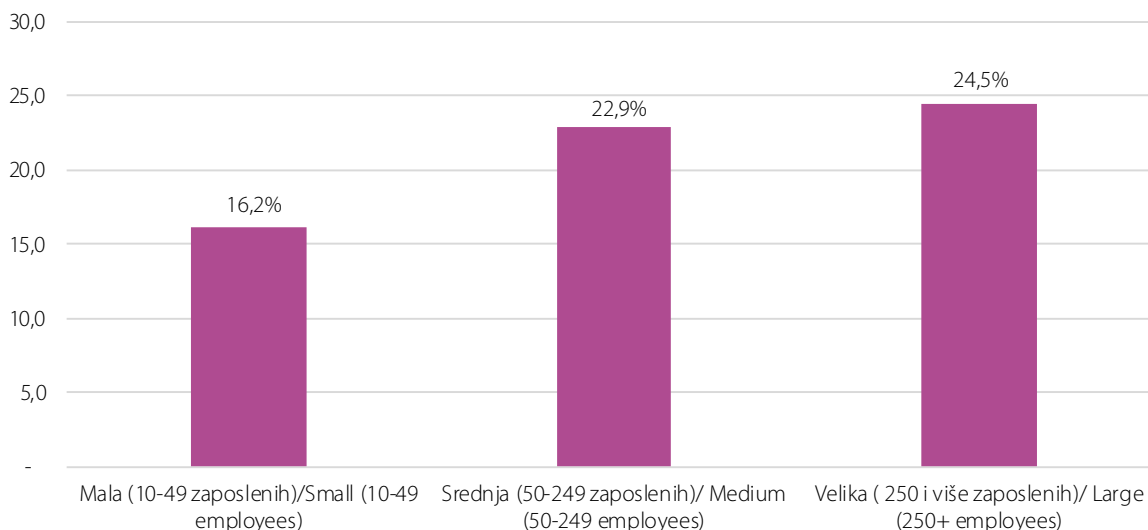
Grafikon 11. Procenat preduzeća koja su imali web prodaju roba ili usluga tokom 2020.

Graph 11. Percentage of enterprises that had web sales of goods or services during 2020



Grafikon 12. Procenat preduzeća koja su imala web prodaju u 2020 godini, prema veličini preduzeća

Graph 12. Percentage of enterprises that had web sales in the 2020 year, by size enterprises



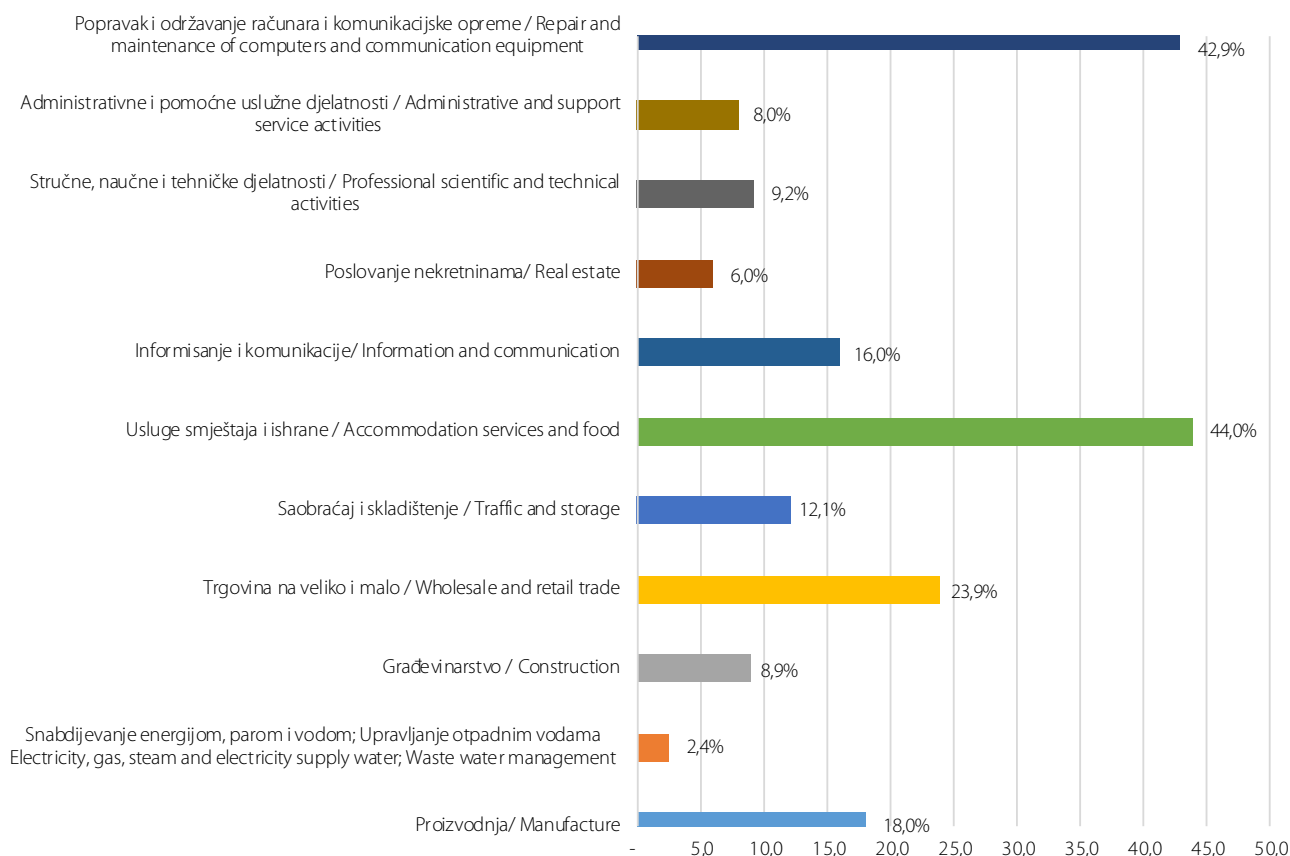
Istraživanje je pokazalo da na pitanje „Da li je vaše preduzeće tokom 2020. godine imalo web prodaju robe ili usluga putem?“:

- vlastite web stranice preduzeća ili aplikacije, 9,0%;
- web stranice e-commerce tržišta ili “aplikacija” koju koristi više preduzeća 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. Procenat preduzeća koja su imala web prodaju, prema djelatnosti preduzeća
Graph 13. Percentage of enterprises that had web sales, by enterprise activity



Ako lociramo kupce prema geografskim lokacijama, preduzeća 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 sijeta (17,8%).

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

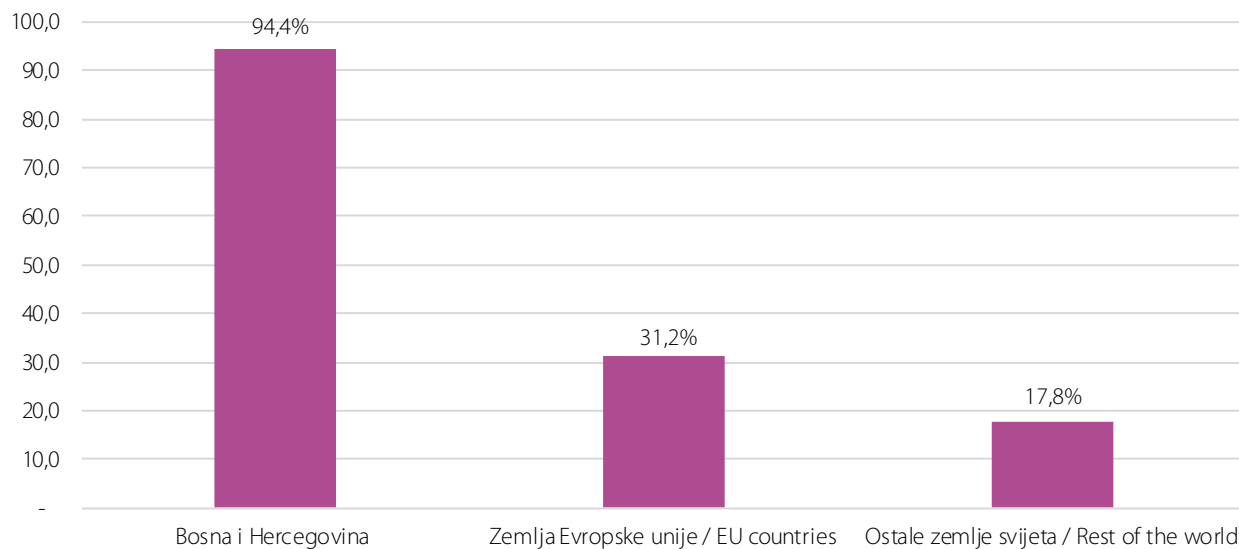
If we locate customers by geographical locations, the companies that had web sales in 2020 achieved the most web sales with customers in:

- 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. Preduzeća ostvarila web prodaju roba i usluga tokom 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% preduzeća.

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

Servisi imaju sljedeće karakteristike:

- nalaze se na serverima pružalaca usluga (providera);
- mogu da se upotrebljavaju na zahtjev korisnika;
- plaćaju se na osnovu načina upotrebe, kapaciteta prostora.

Using Cloud Computing Services

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

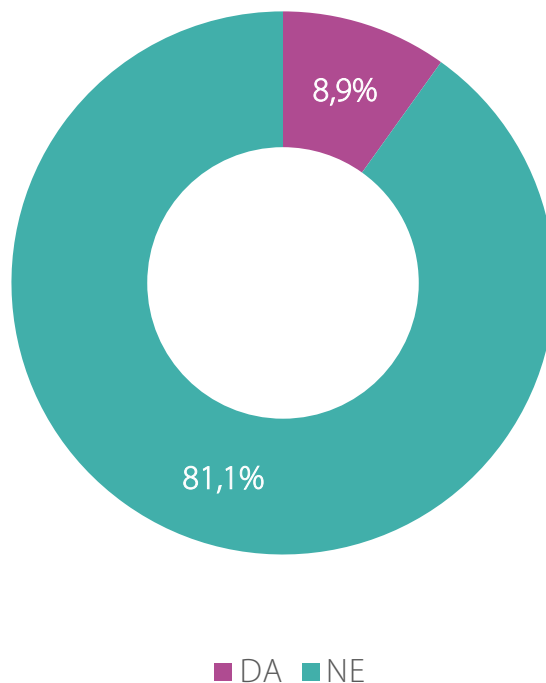
Cloud services include ICT services that are accessed via the Internet for use software, storage space, etc.

The services have the following characteristics:

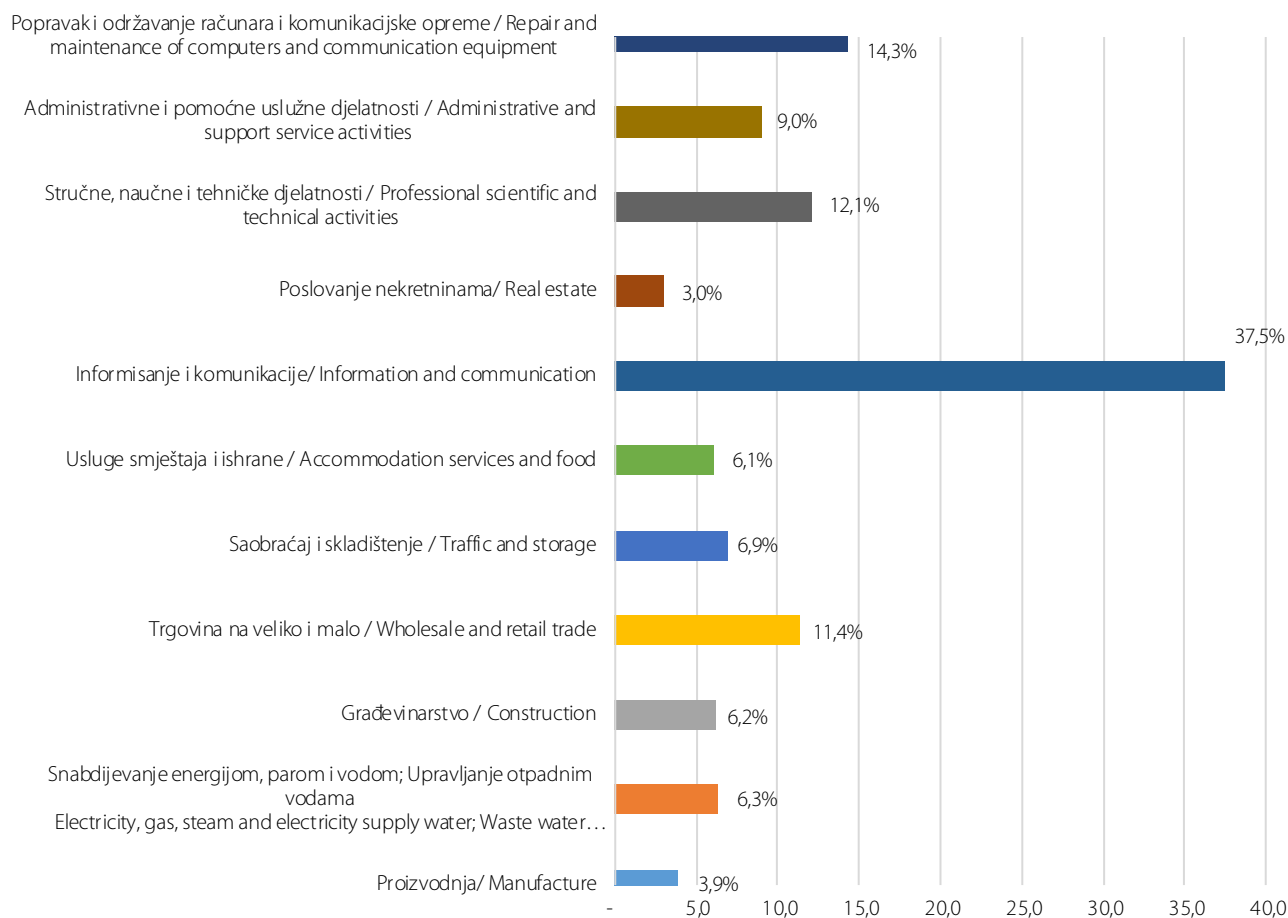
- they are located on the servers of service providers;
- they can be used at the request of the user;
- they are paid on the basis of usage, space capacity.

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

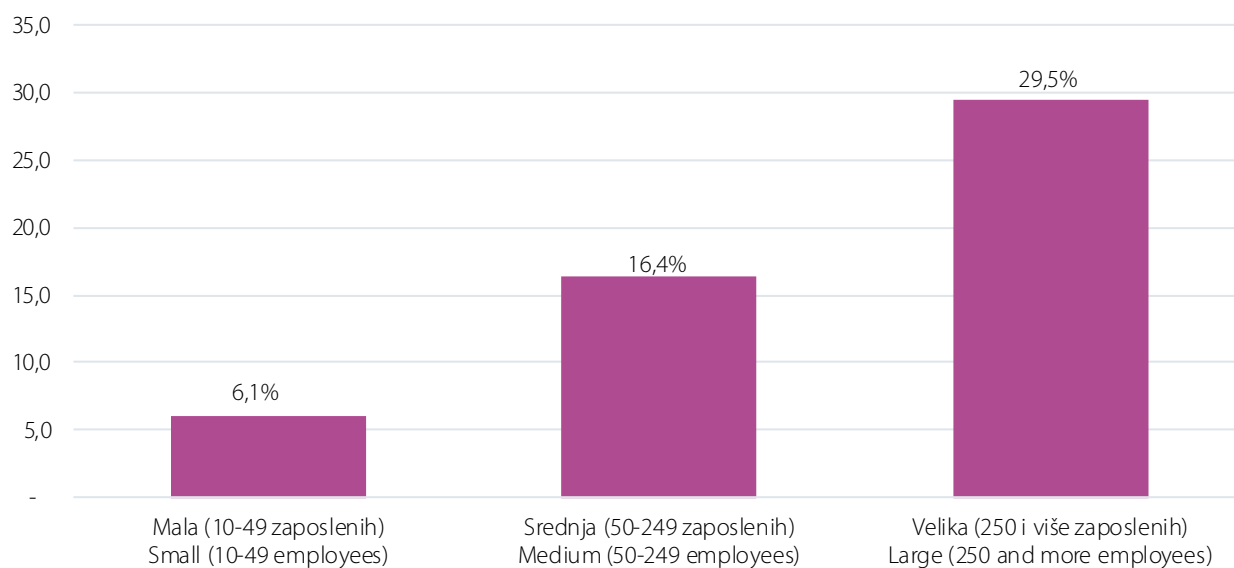
APRIL 2021.



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



Grafikon 17. Procenat preduzeća koja plaćaju cloud usluge, prema veličini preduzeća 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 sisteme, koji se često nazivaju „pametnim“ uređajima ili sistemima. Oni prikupljaju i razmjenjuju podatke i mogu se nadgledati ili daljinski kontrolisati putem interneta.

Primjeri su:

„pametni“ metri, termostati, svjetiljke (svjetla), alarmni sistemi, 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, virtuelnih privatnih mreža (VPN) itd.

Istraživanje je pokazalo da međusobno povezane uređaje ili sisteme koji se mogu nadgledati ili daljinski kontrolisati putem interneta, koristi 17,2% preduzeća 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.

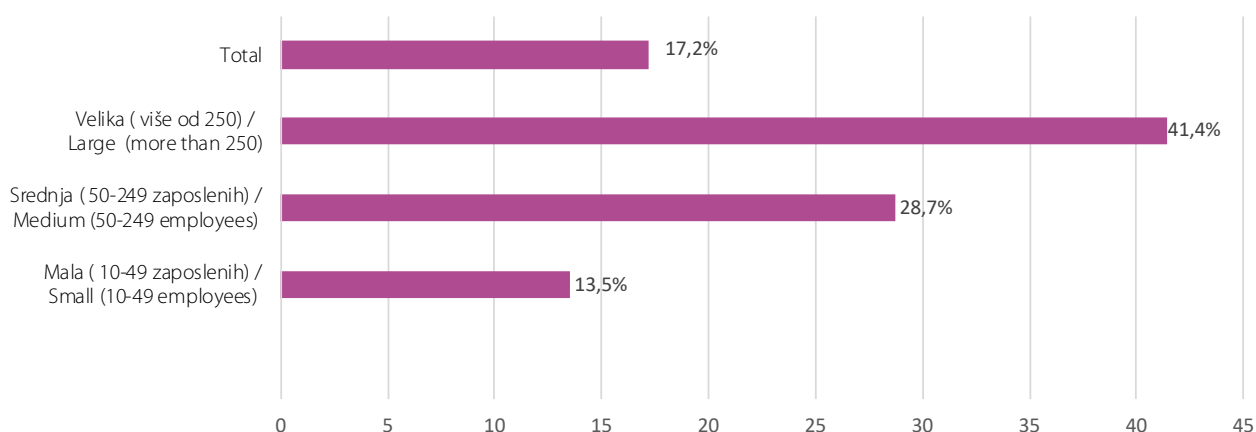
Examples are:

“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. Procenat preduzeća koja koristi „pametne“ uređaje ili sisteme, prema veličini preduzeća
Graph 18. Percentage of companies that “smart” devices or systems, according to enterprises size



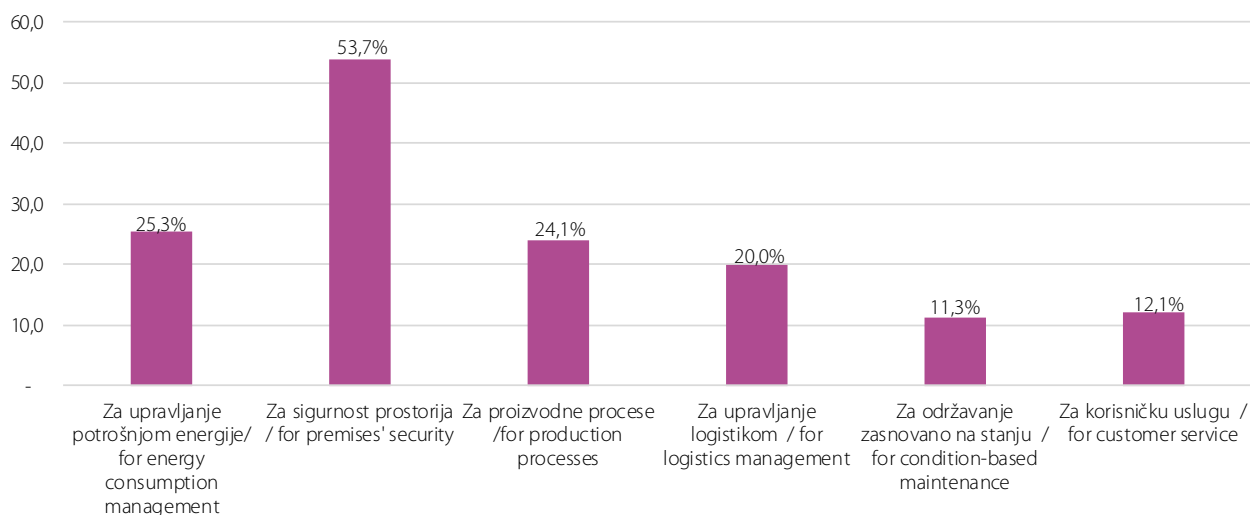
Preduzeća koja koriste međusobno povezane uređaje ili sisteme koji se mogu nadgledati ili daljinski kontrolisati putem interneta su odgovorili da sljedeće uređaje i sisteme koriste:¹²

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

- 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. Procenat preduzeća koja koriste „pametne“ uređaje ili sisteme , prema tipu uređaja, 2021¹³
Graph 19. Percentage of enterprises using “smart” devices or systems, by type of device, 2021¹³



¹² Podaci se odnose na preduzeća koja koriste međusobno povezane uređaje ili sisteme koji se mogu nadgledati ili daljinski kontrolisati putem interneta

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

¹³ Isto

¹³ The same

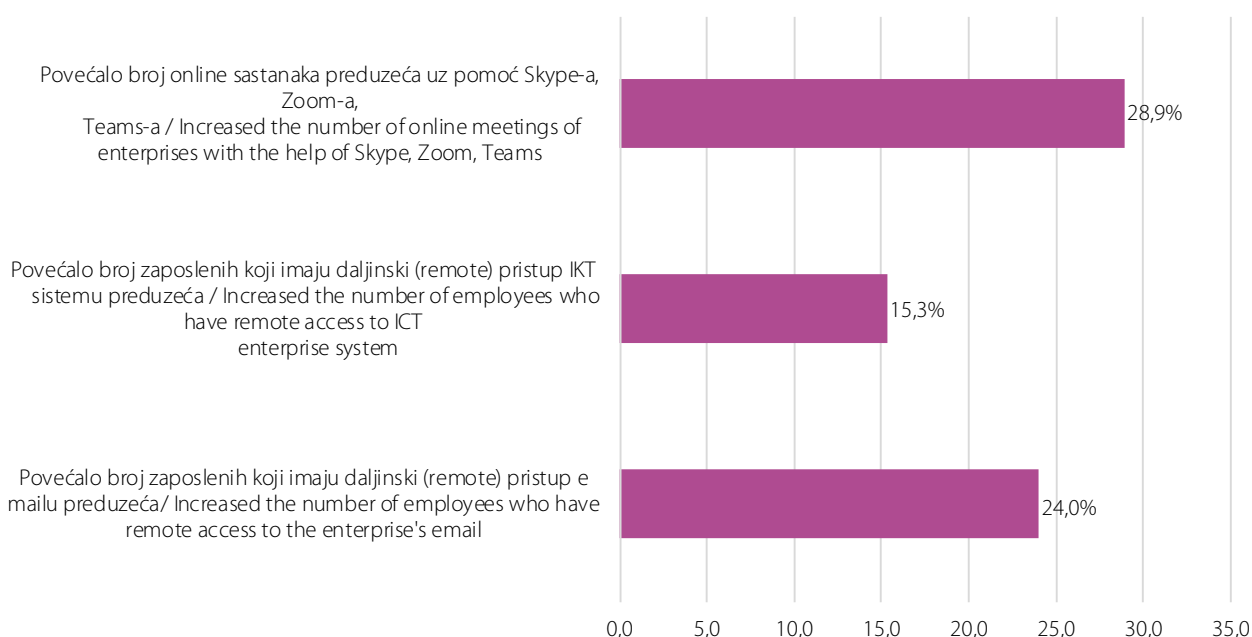
UTICAJ COVIDA-19

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

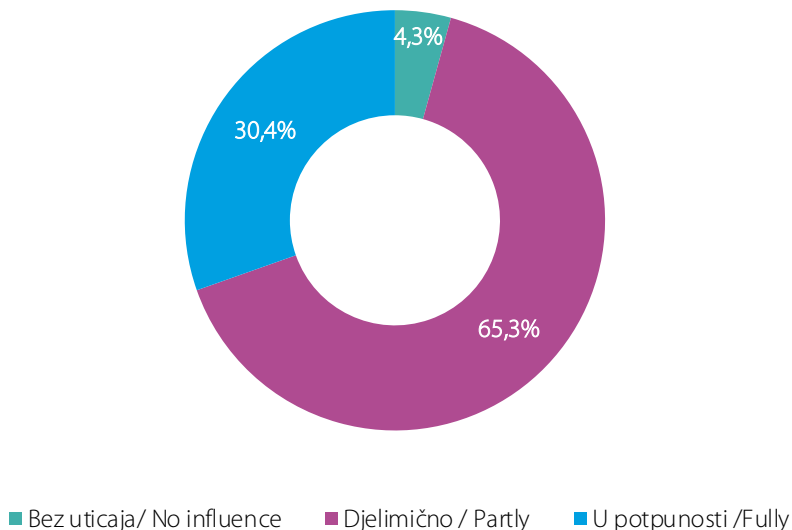
IMPACT OF COVID-19

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 preduzeće tokom 2020, uslijed pandemije Covida-19
Graph 20. During 2020, did your enterprise, due to the Covid-19 pandemic:

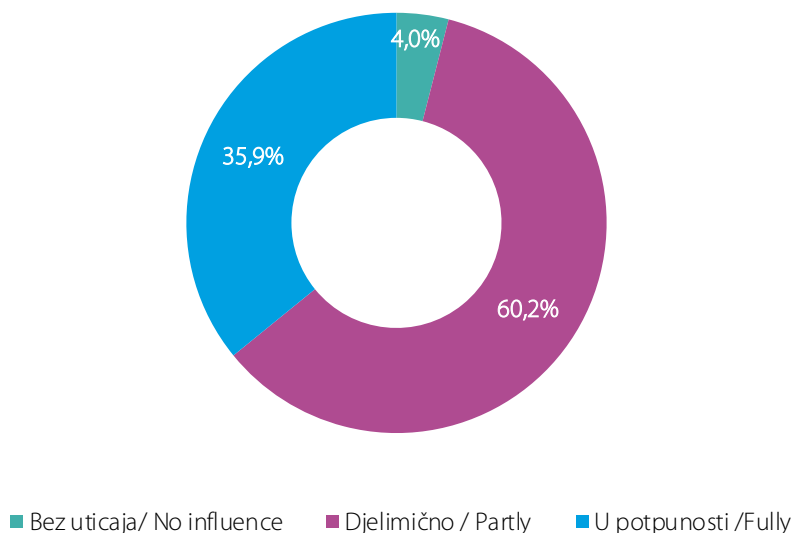


Grafikon 21. U kojoj mjeri je povećanje broja zaposlenih u daljinskom pristupu e-mail sistema preduzeća, posljedica pandemije Covid-19
Graph 21. To what degree were these changes due to the Covid-19 pandemic, in the remote access to the e-mail system of the enterprise



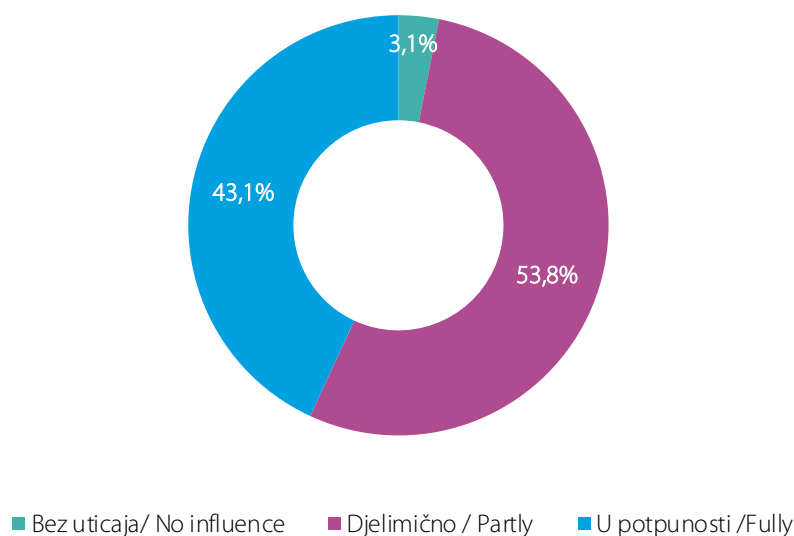
Grafikon 22. U kojoj mjeri je povećanje broja zaposlenih sa daljinskim (remote) pristupom IKT sistemu preduzeća, posljedica pandemije Covid-19

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 preduzeća 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



Tokom 2020. godine 10,3% preduzeća u Bosni i Hercegovini pod uticajem Covid-a19 započelo ili povećalo angažovanje 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 (informacione i komunikacione tehnologije) su softveri i hardveri upotrijebljeni za komuniciranje podacima (npr. računar, telefaks, internet, fiksni i mobilni telefon).

Broadband su širokopolasne tehnologije ili veze koje omogućavaju brz prijenos podataka. Komunikacioni sistem 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) Širokopolasna digitalna transmisiona 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 elektronski kontakt preko interneta sa tijelima vlasti i javnim uslugama. Ne uključuju ručno kucane e-mailove. Saradnja i odnosi sa tijelima vlasti i javnim uslugama uključuje web stranice koje sadrže građanske obaveze (npr. porezne prijave, obaveze o kretanju), prava (npr. socijalne beneficije), službeni dokumenti (lične karte, rodni list), javne obrazovne usluge (javne biblioteke, 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 elektronskim 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 organizacionom 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 preduzeća ili se može koristiti kao usluge računarstva u oblaku. Obično ERP integriše planiranje, nabavku, prodaju, marketing, odnos sa klijentima, finansije i ljudske resurse. Smatra se da preduzeća 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 elektronske trgovine.

E-mail Elektronski prijenos poruke, uključujući tekst i priloge, s jednog na drugi računar koji su locirani unutar ili izvan organizacije. To uključuje elektronsku 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, mašinsko učenje, itd. radi analize podataka prikupljenih iz izvora u vašem vlastitom preduzeću ili drugih izvora.

3D štampanje, se naziva proizvodnja aditivnog sloja, odnosi se na upotrebu posebnih štampača bilo u samom preduzeću, bilo na upotrebu usluga 3D štampe koje pružaju druga preduzeća 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 kontrolisani, reprogramirajući, višenamjenski manipulator koji se može programirati u tri ili više pravaca, a koji mogu biti ili fiksirani u mjestu ili mobilni za upotrebu. 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 stepen 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 sisteme koji koriste tehnologije kao što su: rukovanje tekстом, računarski vid, prepoznavanje govora, stvaranje prirodnog jezika, mašinsko učenje, duboko učenje za prikupljanje i / ili korištenje podataka za predviđanje, preporučivanje ili odlučivanje, sa različitim nivoima 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.*

