

UTICAJ DEMOGRAFSKIH FAKTORA NA PERCEPCIJU KORISNIKA O ONLAJN BANKARSKIM APLIKACIJAMA: ANALIZA EFIKASNOSTI, DOSTUPNOSTI I LAKOĆE KONTAKTA

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Rezime: Rad istražuje uticaj demografskih faktora na percepciju korisnika onlajn bankarskih aplikacija, sa posebnim fokusom na efikasnost, dostupnost i lakoću ostvarivanja kontakta sa bankom. Istraživanje je sprovedeno primenom posebno koncipiranog upitnika koji je realizovan putem platforme Google Forms u elektronskoj formi. Upitnik je distribuiran korisnicima onlajn bankarstva u Srbiji u periodu od avgusta 2024. do februara 2025. godine. U istraživanju je učestvovalo 198 ispitanika, a prikupljeni podaci su obrađeni primenom neparametarskih statističkih testova (Mann-Whitney i Kruskal-Wallis). Rezultati statističkih testova su pokazali da ne postoje značajne razlike u percepciji posmatranih aspekata u odnosu na pol, starosnu dob i nivo obrazovanja ispitanika. Dobijeni rezultati ukazuju da demografske karakteristike ne utiču značajno na zadovoljstvo korisnika, što pruža smernice za univerzalni pristup u koncipiranju i optimizaciji onlajn bankarskih usluga.

Ključne reči: onlajn bankarstvo, kvalitet usluge, percepcija korisnika, efikasnost, kontakt sa korisnicima, korisničko iskustvo

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Uvod

Uspon informacionih i komunikacionih tehnologija transformisao je bankarstvo podstičući prelazak sa tradicionalnih usluga koje su se odvijale uz fizičko prisustvo klijenata na različite onlajn formate (Chaimaa et al., 2021). Kvalitet usluge u kontekstu onlajn bankarstva odnosi se na percepciju korisnika o tome u kojoj meri pružena usluga zadovoljava njihova očekivanja (Mujinga, 2020). Parasuraman i saradnici (2005) definišu kvalitet usluge kao poređenje između stvarne i očekivane usluge. Oni ističu da kvalitet usluge ima ključnu ulogu u održavanju konkurentne prednosti organizacija, ostvarujući značajan pozitivan uticaj na njihove finansijske rezultate. Poboljšanje kvaliteta usluge podstiče lojalnost korisnika i doprinosi povećanju tržišnog učešća. Rezultati prethodnih istraživanja ukazuju da su intuitivni interfejsi, stalna dostupnost i nesmetane transakcije ključni faktori koji doprinose zadovoljstvu i lojalnosti korisnika onlajn usluga (Faisal et al., 2024). Kako se sve više korisnika oslanja na bankarske aplikacije za upravljanje svojim finansijama, došlo je do sve većih zahteva za intuitivnim dizajnom, ažuriranjima u realnom vremenu i personalizovanim iskustvima.

Da bi ostale konkurentne, banke su prinuđene da se orijentišu na usavršavanje korisničkog iskustva prilikom korišćenja usluga onlajn bankarstva kako bi ispunile stalno rastuća očekivanja klijenata. Ključni trendovi za 2025. godinu uključuju pojednostavljenje navigacije i dizajna interfejsa, ponudu personalizovanih obaveštenja u realnom vremenu i uključivanje personalizovanih notifikacija za poboljšanje korisničkog iskustva (Cantero, 2025). Takođe se nagoveštava prelazak sa tradicionalnih bankarskih aplikacija na „super-aplikacije“ koje će transformisati očekivanja korisnika, jer korisnici traže jedinstvenu platformu koja ne samo da im omogućava upravljanje finansijskim transakcijama već i integriše dodatne usluge kao što su plaćanje računa, budžetiranje i razne nefinansijske usluge (Cheqly team, 2025). Evidentno je da će budućnost aplikacija za onlajn bankarstvo biti oblikovana aktuelnom digitalnom transformacijom, sa inovacijama kao što su veštačka inteligencija, blokčejn i računarstvo u oblaku koji pokreću intuitivnija bankarska iskustva koja su usmerena na korisnike. Kako digitalne neobanke postaju sve popularnije, tradicionalne bankarske aplikacije moraju da evoluiraju i da primenjuju napredne tehnologije kao što su veštačka inteligencija i analitika podataka da bi ostale konkurentne i zadovoljile potrebe korisnika koji su navikli da rade sa savremenom tehnologijom (Funcas, 2021; Boustani, 2022; Nowakowski, 2024; Lukić Nikolić, 2024).

U savremenom digitalnom okruženju, onlajn bankarstvo predstavlja ključni kanal komunikacije između banaka i njihovih klijenata. Brzina, dostupnost i jednostavnost korišćenja aplikacija za onlajn bankarstvo postaju sve važniji faktori korisničkog iskustva. Ovaj rad istražuje percepcije korisnika o tri ključna aspekta aplikacija za onlajn bankarstvo: efikasnost, dostupnost i lakoća uspostavljanja kontakta sa bankom. Predmet istraživanja je, dakle, način na koji korisnici doživljavaju funkcionalnost i korisničku podršku u okviru digitalnih bankarskih servisa. Konkretno, rad istražuje da li demografski faktori, uključujući pol, godine i obrazovanje, utiču na to kako korisnici procenjuju ove aspekte u aplikacijama za onlajn bankarstvo. Cilj rada je da se identifikuju statistički značajne razlike u percepcijama korisnika na osnovu njihovih demografskih karakteristika, kako bi se omogućilo preciznije prilagođavanje digitalnih servisa različitim grupama korisnika. Razumevanje ovih percepcija ima za cilj da pomogne bankama u procesu optimizacije svojih aplikacija kako bi zadovoljile potrebe različitih demografskih grupa. Prepoznavanjem i razumevanjem demografskih varijacija u percepcijama korisnika, banke mogu da postignu da se njihove onlajn usluge percipiraju pozitivno kod različitih segmenata klijenata. Ovo, zauzvrat, može da dovede do povećanog zadovoljstva, lojalnosti i zadržavanja klijenata.

Rad je strukturiran na sledeći način. Pored uvoda, dat je pregled literature u kojoj se ističu ključni elementi koji određuju kvalitet aplikacija za onlajn bankarstvo. Nakon toga sledi prikaz metodologije istraživanja, uključujući hipoteze istraživanja, primenjeni upitnik, metode prikupljanja podataka i statističke alate koji su

primenjeni za analizu podataka. Sledeći deo rada posvećen je rezultatima istraživanja i diskusiji dobijenih rezultata. Na kraju, zaključak sumira ključne rezultate istraživanja, njihove implikacije, ograničenja i sugestije za buduća istraživanja na ovu temu.

Pregled literature

Istraživači i praktičari su pokazali veliko interesovanje za onlajn bankarstvo zbog njegove rastuće uloge u finansijskom sektoru. Brojna istraživanja fokusirala su se na različite faktore koji su uticali na prihvatanje i korišćenje usluga onlajn bankarstva. Ključni faktori koji su istraživani fokusirali su se na usvajanje onlajn bankarstva, pri čemu su faktori poput stavova i namera korisnika imali ključnu ulogu u određivanju razloga i načina na koji klijenti odlučuju da koriste aplikacije za onlajn bankarstvo. Pored toga, tehnološke inovacije su posebno izučavane kao dominantni pokretač razvoja onlajn bankarstva, naglašavajući važnost napretka u mobilnim tehnologijama i internet uslugama za unapređenje korisničkog iskustva (Shahid et al., 2022).

Kao disruptivna inovacija, onlajn bankarstvo pruža brojne prednosti i bankama i klijentima, uključujući mogućnost praćenja stanja na računima, prenosa sredstava, plaćanja računa i obavljanja kupovine putem interneta (Chou & Chou, 2000). Onlajn bankarstvo povećava praktičnost i dostupnost usluga omogućavanjem digitalnih transakcija, čime se smanjuje potreba za fizičkim odlaskom u ekspoziture banaka (Amin, 2016). Pored toga, onlajn bankarstvo menja sektor finansijskih usluga podstičući inovacije, podržavajući rast i razvoj, i jačajući konkurentsku prednost banaka (Ayinaddis et al., 2023; Yang et al., 2023).

Kvalitet e-usluga privlači poslednjih godina značajnu pažnju i pozicionira se kao ključni kriterijum za procenu kvaliteta onlajn usluga. Istraživanje kvaliteta e-usluga obuhvata različite faktore koji doprinose percepciji klijenata o onlajn uslugama, naglašavajući potrebu da se kompanije fokusiraju na kontinuirano poboljšanje u oblastima kao što su jednostavnost korišćenja, pouzdanost i bezbednost kako bi se povećalo zadovoljstvo i lojalnost klijenata (Lukić Nikolić, 2025). Kvalitet e-usluge odnosi se na ukupnu ocenu klijentovog iskustva sa uslugama koje se isporučuju preko digitalnih platformi, fokusirajući se na aspekte kao što su funkcionalnost, efikasnost i bezbednost. E-usluge prvenstveno omogućavaju digitalni posrednici, nudeći klijentima opcije samoposluživanja koje su dostupne bilo kada i bilo gde (Malc et al., 2023). Pet ključnih komponenti kvaliteta bankarskih usluga koje utiču na zadovoljstvo i lojalnost e-korisnika su: e-korisnička usluga, organizacija sajta, efikasnost aplikacija, prilagođenost korisnicima i bezbednost i privatnost ličnih podataka (Gautam & Sah, 2023).

U kontekstu onlajn bankarstva, Herington i Weaven (2009) razvili su posebne skale za merenje kvaliteta usluga zasnovanih na ličnim potrebama, organizaciji sajta, prilagođenosti korisnicima i efikasnosti. Amin (2016) je takođe istraživao kvalitet usluga onlajn bankarstva koristeći višedimenzionalnu skalu koja uključuje lične potrebe, organizaciju sajta, prilagođenost korisnicima i efikasnost. U skorije vreme, Ui Haq i Awan (2020) fokusirali su se na pouzdanost, privatnost i bezbednost, veb dizajn i korisničku podršku tokom pandemije COVID-19, naglašavajući važnost kvaliteta usluga u sektoru onlajn bankarstva koji se sve brže razvija.

Efikasnost predstavlja ključni aspekt kvaliteta usluga onlajn bankarstva. Obuhvata jednostavnost aplikacije za korisnika, pouzdanost i celokupnu organizaciju informacija i usluga (Tomić et al., 2023). Efikasnost se takođe može posmatrati kao jedan od ključnih faktora koji utiču na odluku o usvajanju usluga onlajn bankarstva, jer nudi praktičnu alternativu tradicionalnom bankarstvu.

Pored toga, privatnost i bezbednosne karakteristike usluga onlajn bankarstva su od presudne važnosti. Ovi atributi obezbeđuju zaštitu ličnih i finansijskih informacija klijenata, ali i olakšavaju bezbedne transakcije u onlajn bankarskom okruženju (Malc et al., 2023). Efikasnost se odnosi na to koliko dobro aplikacija odgovara potrebama korisnika, dok se ispunjenje očekivanja u pogledu efikasnosti odnosi na blagovremenost i tačnost pružanja usluga.

Studija koja je primenila model prihvatanja tehnologije u cilju ispitivanja usvajanja mobilnog bankarstva među 202 studenta univerziteta u Srbiji pokazala je da su „percipirana korisnost“ i „percipirana bezbednost“ najznačajniji prediktori prihvatanja mobilnog bankarstva (Lukić et al., 2019). Još jedno istraživanje, koje je takođe imalo za cilj da identifikuje ključne faktore koji utiču na usvajanje mobilnog bankarstva u Srbiji koristeći isti teorijski model, sprovedeno je putem onlajn ankete na uzorku od 167 ispitanika tokom juna i jula 2020. godine. Rezultati su pokazali da su „informisanost o mobilnom bankarstvu“, „percipirana korisnost“ i „percipirana bezbednost“ statistički značajni faktori koji utiču na nameru korisnika da u budućnosti usvoje mobilno bankarstvo (Antonijević et al., 2021).

Grönroos (2007) naglašava važnost adresiranja ličnih karakteristika korisnika, kao što su njihove demografske karakteristike, način života i preferencije, kako bi se uvele nove funkcije koje su u skladu sa očekivanjima korisnika i poboljšalo njihovo opšte zadovoljstvo. Prethodne studije su istraživale različite faktore koji mogu da utiču na percepciju korisnika o onlajn bankarskim uslugama, posebno u pogledu efikasnosti, dostupnosti i lakoće uspostavljanja kontakta sa bankom. Jedan od istraživanih faktora je pol, a istraživanja sugerišu da korisnici različitog pola mogu drugačije da percipiraju aplikacije za onlajn bankarstvo. Neke studije su otkrile da rodne razlike u percepciji onlajn bankarstva mogu da utiču na to kako korisnici procenjuju attribute usluge kao što su efikasnost i lakoća korišćenja aplikacija (Laukkanen, 2016). Isto tako, utvrđeno je da godine utiču na komfor korisnika i stepen poznavanja tehnologije, što zauzvrat može da utiče na njihovu percepciju usluga onlajn bankarstva. Stariji korisnici, na primer, mogu da imaju različita očekivanja u pogledu efikasnosti i lakoće korišćenja aplikacija za onlajn bankarstvo u poređenju sa mlađim korisnicima koji su više upućeni u tehnologiju (Amin, 2016; Laukkanen, 2016). Stepem obrazovanja je takođe faktor koji može da oblikuje percepciju korisnika o onlajn bankarstvu. Korisnici sa višim nivoom obrazovanja imaju različita očekivanja u pogledu funkcionalnosti i bezbednosti aplikacija za onlajn bankarstvo – veća je verovatnoća da daju prioritet funkcijama kao što su privatnost i dostupnost aplikacije, kao i celokupno korisničko iskustvo (Herington & Weaven, 2009).

Metodologija istraživanja

Hipoteze postavljene u ovom radu su sledeće:

Hipoteza 1: Ne postoji statistički značajna razlika u percepciji efikasnosti, dostupnosti i lakoće uspostavljanja kontakta među muškim i ženskim korisnicima aplikacija za onlajn bankarstvo.

Hipoteza 2: Ne postoji statistički značajna razlika u percepciji efikasnosti, dostupnosti i lakoće uspostavljanja kontakta u okviru aplikacija za onlajn bankarstvo među korisnicima različitih starosnih grupa.

Hipoteza 3: Ne postoji statistički značajna razlika u percepciji efikasnosti, dostupnosti i lakoće uspostavljanja kontakta u okviru aplikacija za onlajn bankarstvo u zavisnosti od nivoa obrazovanja korisnika.

Istraživanje je sprovedeno primenom posebno koncipiranog upitnika koji su popunjavali korisnici usluga onlajn bankarstva u Srbiji. Upitnik se sastojao iz dva dela. Prvi deo upitnika obuhvatio je četiri pitanja koja se odnose na ispitanike: pol, starost, obrazovanje i stepen njihovog zadovoljstva aplikacijom za onlajn bankarstvo. Drugi deo upitnika obuhvatio je tri skale pod nazivom efikasnost, dostupnost i lakoća uspostavljanja kontakta sa bankom. Skale su se sastojale od ukupno 11 tvrdnji koje se odnose na funkcionalnost aplikacija za onlajn bankarstvo. **Skala efikasnosti** (4 tvrdnje) procenjuje jednostavnost korišćenja aplikacije za onlajn bankarstvo i korisničko iskustvo, fokusirajući se na faktore kao što su brz pristup, intuitivan dizajn, organizacija informacija i efikasnost realizacije transakcija. Cilj skale je da proceni koliko lako korisnici mogu da se kreću kroz aplikaciju i izvršavaju željene transakcije. **Skala dostupnosti** (4 tvrdnje) procenjuje pouzdanost i performanse aplikacije za onlajn bankarstvo, fokusirajući se na faktore kao što su nesmetan rad, dosledna pristupačnost i proaktivna komunikacija u vezi sa održavanjem ili ažuriranjima. **Skala lakoća uspostavljanja kontakta** (3 tvrdnje) meri dostupnost i raspoloživost korisničke podrške u okviru aplikacije za onlajn bankarstvo, fokusirajući se na prisustvo servisa za časkanje, lakoću pronalaženja informacija o kontaktima i lociranje najbližih ekspozitura. Ova skala procenjuje koliko efikasno aplikacija pruža pomoć korisnicima i resurse za rešavanje problema ili pružanje dodatne podrške. Tvrdnje u okviru navedenih skala su formirane po uzoru na rad Malc-a i saradnika (2023) i prikazane su u tabelama 4, 5 i 6.

Prosečno vreme popunjavanja upitnika bilo je 10 minuta. Uzorak za ovo istraživanje formiran je primenom metoda pogodnog uzorkovanja, što podrazumeva odabir ispitanika na osnovu njihove dostupnosti i spremnosti da učestvuju u istraživanju. Ciljna populacija u ovom istraživanju bili su aktivni korisnici usluga onlajn bankarstva u Srbiji. Uzorak nije unapred definisan na osnovu statističkih kriterijuma reprezentativnosti, već je formiran tako što je istraživački instrument (upitnik) učinjen dostupnim široj grupi relevantnih korisnika. Link ka upitniku distribuiran je putem više komunikacionih kanala: (1) putem društvenih mreža (Facebook, LinkedIn), (2) postavljanjem u tematske forume i specijalizovane grupe posvećene digitalnom bankarstvu, i (3) direktnim kontaktiranjem potencijalnih ispitanika putem elektronske pošte, uz kratko objašnjenje svrhe istraživanja i poziv za učešće. Na ovaj način su potencijalni ispitanici identifikovani na osnovu interesovanja i/ili prethodnog angažmana u temama vezanim za digitalno bankarstvo, a u slučaju direktne komunikacije – na osnovu poznate činjenice da koriste onlajn bankarske usluge. Na osnovu analitike sa društvenih mreža i evidencije o broju poslanih mejlova, procenjuje se da je upitnik videlo oko 500 potencijalnih ispitanika. U periodu od avgusta 2024. do februara 2025. godine na upitnik je odgovorilo ukupno 198 ispitanika, što predstavlja stopu odgovora od skoro 40% i smatra se zadovoljavajućom stopom u društvenim naukama (De Vaus, 2013). Ispitanici su dobrovoljno učestvovali u istraživanju, uz punu saglasnost za korišćenje njihovih podataka u svrhu naučnog istraživanja.

Prikupljeni odgovori su obrađeni primenom Microsoft® Excel® 2019 i Statistical Software for Social Sciences (SPSS), verzija 26. Kolmogorov-Smirnov test je korišćen za procenu normalnosti distribucije podataka. Pošto su rezultati sa značajnošću Sig.=0,000 pokazali da pretpostavka normalnosti distribucije podataka nije zadovoljena, za statističku analizu primenjene su neparametarske tehnike. Man-Whitney test je korišćen za poređenje razlika između dve grupe, dok je Kruskal-Wallis test korišćen za poređenje razlika između tri ili više grupa sa intervalom poverenja od 95%. Levenov test jednakosti varijansi primenjen je u svim testovima upoređujući razlike među grupama, zadovoljavajući pretpostavku o homogenoj varijansi u svim slučajevima ($p > 0,05$).

U tabeli 1 prikazani su rezultati Kronbahovog Alfa koeficijenta za sve tri korišćene skale. Sve vrednosti su iznad pragom od 0,7, što ukazuje na visoku pouzdanost korišćenih skala.

Tabela 1 - Vrednosti Kronbahovog Alfa koeficijenta za merne skale

Br.	Skale	N	Kronbah Alfa
1.	Efikasnost	4	0,904
2.	Dostupnost	4	0,831
3.	Lakoća uspostavljanja kontakta	3	0,767

Rezultati istraživanja i diskusija

Tabela 2 prikazuje osnovne informacije o ispitanicima. Uzorak se sastoji od većeg učešća ispitanika ženskog pola (63,1%) u odnosu na muškarce (36,9%). Starosna distribucija pokazuje da je najveći broj ispitanika (40,4%) u starosnoj dobi od 35 do 44 godine. Sledeća najveća grupa je kategorija od 45 do 54 godine (24,2%). Mlađe starosne grupe (18-24 godine i 25-34 godine) predstavljaju manji udeo u uzorku (16,2% i 12,1%, respektivno). Obrazovna struktura ispitanika otkriva pretežno visoko obrazovane ispitanike, pri čemu više od polovine (51,0%) ima fakultetske diplome (završene osnovne ili master studije). Dodatno, 17,7% ispitanika je završilo doktorske studije. Manji procenat ispitanika ima završenu srednju školu (16,7%) i višu školu (14,6%).

Tabela 2 - Osnovne informacije o ispitanicima

	N	%
Pol		
Muški	73	36,9
Ženski	125	63,1
Starost		
Od 18 do 24	32	16,2
Od 25 do 34	24	12,1
Od 35 do 44	80	40,4
Od 45 do 54	48	24,2
Preko 54 godine	14	7,1
Obrazovanje		
Srednja škola	33	16,7
Viša škola	29	14,6
Fakultet (osnovne ili master studije)	101	51,0
Fakultet (doktorske studije)	35	17,7

Tabela 3 prikazuje rezultate vezane za zadovoljstvo ispitanika aplikacijama za onlajn bankarstvo, mereno na Likertovoj petostepenoj skali. Prosečna ocena zadovoljstva ispitanika je 4,41. Ovo ukazuje da su, u proseku, ispitanici relativno zadovoljni aplikacijama za onlajn bankarstvo. Standardna devijacija od 0,754 ukazuje na umeren nivo doslednosti u odgovorima. Većina ispitanika (otprilike 89%) odgovorila je da je zadovoljna ili potpuno zadovoljna aplikacijama za onlajn bankarstvo (34,3% zadovoljno i 54,6% potpuno zadovoljno). Nizak procenat ispitanika (2,5%) je nezadovoljan, dok je 8,6% ispitanika zauzelo neutralan stav.

Tabela 3 - Deskriptivna statistika stepena zadovoljstva ispitanika aplikacijama za onlajn bankarstvo

Br.	Tvrđnja	M	SD	Ocene	N	%
1.	Zadovoljan/a sam aplikacijom za onlajn bankarstvo.	4,41	0,754	1	0	0,0
				2	5	2,5
				3	17	8,6
				4	68	34,3
				5	108	54,6

Tabela 4 predstavlja rezultate deskriptivne statistike za **skalu efikasnosti**. Tvrđnja da ispitanici mogu lako i brzo pristupiti aplikaciji za onlajn bankarstvo ima srednju vrednost 4,55, što ukazuje na visok nivo slaganja sa ovom tvrđnjom. Ova visoka srednja vrednost sugerise da, generalno, korisnici smatraju da su aplikacije za onlajn bankarstvo veoma pristupačne i efikasne za korišćenje. Standardna devijacija od 0,840 odražava izvesnu varijabilnost u odgovorima, ali relativno niska vrednost implicira da većina korisnika deli slično pozitivno iskustvo u pogledu pristupačnosti aplikacije. U pogledu distribucije odgovora, značajna većina ispitanika, 72,3% (143 ispitanika), se u potpunosti slaže sa tvrđnjom, dok se 14,6% (29 ispitanika) slaže. Samo 10,6% (21 ispitanik) je izrazilo neutralan stav, a veoma mali procenat, 2,5% (5 ispitanika) ili se ne slaže ili se u potpunosti ne slaže.

Tvrđnja o lakoći korišćenja aplikacije za onlajn bankarstvo ima srednju vrednost 4,50, što ukazuje da ispitanici uglavnom smatraju da je aplikacija laka za korišćenje. Standardna devijacija od 0,841 otkriva umeren nivo varijabilnosti u odgovorima, ali je i dalje relativno nizak, što implicira da većina ispitanika deli slično pozitivno iskustvo u pogledu lakoće korišćenja. Distribucija odgovora dalje ide u prilog tome, sa 66,7% (132 ispitanika) koji se u potpunosti slažu, a 20,7% (41 ispitanik) se slaže sa tvrđnjom. Nizak procenat ispitanika, 10,6% (21 ispitanik), izrazio je neutralan stav, dok se samo 2,0% (4 ispitanika) nije složilo. Ovi rezultati sugerisu da ispitanici percipiraju aplikacije za onlajn bankarstvo kao jednostavne za korišćenje.

Tvrđnja o organizaciji i intuitivnosti informacija u aplikaciji za onlajn bankarstvo ima srednju vrednost 4,14, što ukazuje da iako se većina ispitanika slaže da su informacije u aplikaciji dobro organizovane i intuitivne, nivo slaganja je nešto niži od prethodne tvrđnje o jednostavnosti korišćenja aplikacije. Standardna devijacija od 0,982 ukazuje na veću varijabilnost u odgovorima u poređenju sa prethodnom tvrđnjom, što ukazuje na to da neki ispitanici ne smatraju organizaciju i raspored tako intuitivnim ili

dobro strukturiranim. Distribucija odgovora pokazuje da se 46,4% (92 ispitanika) u potpunosti slaže, a 29,3% (58 ispitanika) se slaže sa tvrdnjom. Međutim, 17,7% (35 ispitanika) je izrazilo neutralan stav, a mali procenat, 6,6% (13 ispitanika) se ne slaže sa tvrdnjom. Ovo ukazuje da, iako većina ispitanika smatra da su informacije u aplikaciji dobro organizovane, postoje mogućnosti za poboljšanje, posebno za manju grupu ispitanika koji su bili manje zadovoljni organizacijom i intuitivnošću aplikacije.

Tvrdnja o mogućnosti brze realizacije transakcija u aplikaciji za onlajn bankarstvo ima najveću srednju vrednost od 4,60, što ukazuje da se velika većina ispitanika slaže da aplikacija omogućava brze transakcije. Standardna devijacija od 0,798 odražava relativno nizak nivo varijabilnosti u odgovorima, što sugerise da većina ispitanika deli slično, veoma pozitivno iskustvo kada je reč o brzini realizacije transakcija. Što se tiče distribucije odgovora, sa tvrdnjom se u potpunosti slaže 75,3% (149 ispitanika), a 13,1% (26 ispitanika) se slaže. Samo mali deo ispitanika, 9,1% (18 ispitanika) izrazio je neutralan stav, a još manji deo, 2,5% (5 ispitanika), se ne slaže. Ovi rezultati ukazuju na to da je aplikacija za onlajn bankarstvo veoma efikasna jer omogućava korisnicima da brzo i u bilo koje vreme realizuju svoje transakcije.

Tabela 4 - Deskriptivna statistika u pogledu efikasnosti aplikacija za onlajn bankarstvo

Br.	Tvrdnje	M	SD	Ocene	N	%
1.	Brzo i jednostavno mogu da pristupim aplikaciji za onlajn bankarstvo.	4,55	0,840	1	3	1,5
				2	2	1,0
				3	21	10,6
				4	29	14,6
				5	143	72,3
2.	Korišćenje aplikacije za onlajn bankarstvo je jednostavno..	4,50	0,841	1	4	2,0
				2	0	0,0
				3	21	10,6
				4	41	20,7
				5	132	66,7
3.	Informacije u aplikaciji za onlajn bankarstvo su funkcionalno i logički dobro organizovane u pogledu korisničkog iskustva.	4,14	0,982	1	3	1,5
				2	10	5,1
				3	35	17,7
				4	58	29,3
				5	92	46,4
4.	Aplikacija za onlajn bankarstvo mi omogućava da brzo realizujem željene transakcije u bilo koje vreme.	4,60	0,798	1	2	1,0
				2	3	1,5
				3	18	9,1
				4	26	13,1
				5	149	75,3

Tabela 5 predstavlja rezultate deskriptivne statistike za **skalu dostupnosti**. Tvrdnja o lakom pokretanju aplikacije za onlajn bankarstvo ima srednju vrednost 4,35, što sugeriše da se većina korisnika slaže da se aplikacija pokreće bez ikakvih problema. Ovo je pozitivan rezultat, jer ukazuje da se korisnici generalno ne suočavaju sa značajnim preprekama kada pokušavaju da pokrenu aplikaciju. Standardna devijacija od 0,882 odražava umerenu varijabilnost u odgovorima, što sugeriše da iako većina korisnika ima pozitivno iskustvo, postoje ispitanici sa različitim stepenom zadovoljstva. Distribucija odgovora pokazuje da se 57,1% (113 ispitanika) u potpunosti slaže, a 26,3% (52 ispitanika) slaže sa tvrdnjom. Nizak procenat ispitanika, 12,1% (25 ispitanika), ostao je neutralan, a 4,5% (9 ispitanika) se ne slaže, dok se 0,5% (1 ispitanik) u potpunosti ne slaže. Ovaj rezultat ukazuje da većina korisnika nema značajnih problema sa pokretanjem aplikacije, iako nekoliko korisnika prijavljuje povremene poteškoće.

Tvrdnja o nesmetanom radu aplikacije za onlajn bankarstvo ima srednju vrednost 3,89, što ukazuje na pozitivan, ali umereniji nivo slaganja u poređenju sa drugim tvrdnjama. Standardna devijacija od 1,034 ukazuje na veći stepen varijabilnosti u odgovorima, što sugeriše da se korisnička iskustva sa performansama aplikacije u nešto većoj meri razlikuju. Distribucija odgovora pokazuje da se 32,3% (64 ispitanika) u potpunosti slaže i 37,9% (75 ispitanika) slaže, što je pozitivan rezultat. Međutim, 19,7% (39 ispitanika) je izrazilo neutralan stav, 10,1% (20 ispitanika) se ne slaže, dok se 3,0% (6 ispitanika) u potpunosti ne slaže. Ovi rezultati sugerišu da iako aplikacija radi dobro za većinu korisnika, još uvek postoji značajan broj ispitanika koji se suočavaju sa prekidima ili zastojećima, što ukazuje da na ovom polju postoji prostor za poboljšanja.

Tvrdnja o tome da je aplikacija uvek dostupna i funkcionalna ima srednju vrednost 4,30, što odražava snažnu pozitivnu percepciju njene dostupnosti i pouzdanosti. Standardna devijacija od 0,889 ukazuje na umeren nivo doslednosti u korisničkom iskustvu, pri čemu većina ispitanika deli slične stavove o pouzdanosti aplikacije. U pogledu distribucije odgovora, 52,1% (103 ispitanika) se u potpunosti slaže, a 32,3% (64 ispitanika) se slaže, što pokazuje da većina korisnika aplikaciju smatra pristupačnom i funkcionalnom. Samo 10,6% (21 ispitanik) je ostalo neutralno, a 5,0% (10 ispitanika) se ne slaže sa tvrdnjom, dok se 1,0% (2 ispitanika) u potpunosti ne slaže. Ovi rezultati sugerišu da, iako je aplikacija veoma funkcionalna za većinu korisnika, postoji mali broj onih koji su iskusili probleme sa pristupačnošću ili funkcionalnošću.

Tvrdnja o prijemu obaveštenja o zakazanim održavanjima ili ažuriranjima aplikacije ima srednju vrednost 4,19, što ukazuje na relativno visok nivo saglasnosti korisnika da su obavešteni o prekidima aplikacije usled potrebe za održavanjem ili ažuriranjem. Standardna devijacija od 1,133 sugeriše da postoji veća varijabilnost u odgovorima u poređenju sa drugim tvrdnjama u okviru ove skale, verovatno zbog različitih iskustava u sistemu obaveštavanja. Distribucija odgovora pokazuje da se 56,1% (111 ispitanika) u potpunosti slaže, a 21,7% (43 ispitanika) slaže, što sugeriše da je većina korisnika zadovoljna komunikacijom o zakazanim održavanjima ili ažuriranjima. Međutim, 12,1% (24 ispitanika) je bilo neutralno u svojim odgovorima, dok se 10,1% (20 ispitanika) ne slaže, a 4,5% (9 ispitanika) u potpunosti ne slaže. Ovi rezultati pokazuju da iako većina korisnika prima obaveštenja, postoji manja grupa koja ih ili ne prima ili nije zadovoljna komunikacijom, što sugeriše da postoji prostor za poboljšanje ovog segmenta aplikacija za onlajn bankarstvo.

Tabela 5 - Deskriptivna statistika u pogledu dostupnosti aplikacija za onlajn bankarstvo

Br.	Tvrdnje	M	SD	Ocene	N	%
1.	Aplikacija za onlajn bankarstvo se pokreće lako, bez poteškoća.	4,35	0,882	1	1	0,5
				2	8	4,0
				3	25	12,1
				4	52	26,3
				5	113	57,1
2.	Prilikom korišćenja aplikacije za onlajn bankarstvo ne dolazi do prekida i zastoja u radu.	3,89	1,034	1	6	3,0
				2	14	7,1
				3	39	19,7
				4	75	37,9
				5	64	32,3
3.	Aplikacija za onlajn bankarstvo mi je uvek dostupna i funkcionalna.	4,30	0,889	1	2	1,0
				2	8	4,0
				3	21	10,6
				4	64	32,3
				5	103	52,1
4.	Uredno dobijam obaveštenja o najavljenom prekidu rada aplikacije kada su planirani radovi na nadogradnji ili ažuriranju sistema.	4,19	1,133	1	9	4,5
				2	11	5,6
				3	24	12,1
				4	43	21,7
				5	111	56,1

Tabela 6 prikazuje rezultate deskriptivne statistike za **skalu lakoće uspostavljanja kontakta**. Tvrdnja o lako dostupnoj usluzi za onlajn časkanje (onlajn četbot) ima srednju vrednost 3,06, što ukazuje na relativno neutralan ili mešoviti odgovor ispitanika. Standardna devijacija od 1,454 ukazuje na značajnu varijabilnost u odgovorima, ukazujući na širok spektar mišljenja ispitanika. Distribucija odgovora pokazuje da je 27,3% (54 ispitanika) bilo neutralno, 23,8% (47 ispitanika) se u potpunosti složilo, a 14,6% (29 ispitanika) se složilo sa tvrdnjom da aplikacija za onlajn bankarstvo ima lako dostupnu uslugu četa. Međutim, 22,2% (44 ispitanika) se u potpunosti ne slaže, a 12,1% (24 ispitanika) se ne slaže, što ukazuje da značajan deo korisnika u aplikacijama za onlajn bankarstvo nema lako dostupnu uslugu onlajn četa.

Tvrdnja o pronalaženju kontakt informacija za korisničku podršku u aplikaciji za onlajn bankarstvo ima srednju vrednost od 3,57, što odražava donekle pozitivan, ali ne u velikoj meri visok nivo saglasnosti. Standardna devijacija od 1,349 ukazuje na to da postoji značajna varijabilnost u odgovorima, što znači da, dok nekim korisnicima kontakt informacije bivaju lako dostupne, drugi se mogu suočiti sa izazovima u njihovom pronalaženju. U pogledu distribucije odgovora, 34,9% (69 ispitanika) se u potpunosti

složilo, a 19,7% (39 ispitanika) se složilo sa tvrdnjom, što je pozitivan ishod. Međutim, 23,2% (46 ispitanika) je ostalo neutralno, a 22,2% (44 ispitanika) se ne slaže ili se u potpunosti ne slaže. Ovi rezultati sugerišu da iako većina ispitanika relativno lako može da pronađe kontakt informacije za korisničku podršku, značajan deo se i dalje suočava sa poteškoćama ili je nezadovoljan vidljivošću i dostupnošću kontakt podataka.

Tvrdnja o lakoći pronalazjenja najbližih ekspozitura u aplikaciji za onlajn bankarstvo ima srednju vrednost 3,59, što je nešto pozitivnije od prethodne dve tvrdnje, ali ipak ukazuje da bi se ova funkcija mogla dodatno optimizovati. Standardna devijacija od 1,306 odražava umerenu varijabilnost u odgovorima, što znači da iako je mnogim korisnicima lako da lociraju ekspoziture, još uvek postoji prilično neslaganja ili neutralnosti u vezi sa ovom funkcijom. Distribucija odgovora pokazuje da se 33,8% (67 ispitanika) u potpunosti slaže, a 20,7% (41 ispitanik) slaže sa tvrdnjom, što ukazuje na pozitivno iskustvo za značajan deo korisnika. Međutim, 25,8% (51 ispitanik) je bilo neutralno, dok se 19,7% (39 ispitanika) ne slaže ili se u potpunosti ne slaže. Ovi rezultati sugerišu da iako mnogi korisnici mogu lako da pronađu najbliže ekspoziture, značajan deo korisnika može imati poteškoća da pristupi ovoj funkciji ili nije zadovoljan načinom na koji su informacije predstavljene.

Tabela 6 - Deskriptivna statistika u pogledu lakoće uspostavljanja kontakta u aplikacijama za onlajn bankarstvo

Br.	Tvrdnje	M	SD	Ocene	N	%
1.	Aplikacija za onlajn bankarstvo ima lako dostupnu uslugu četa (onlajn četbota).	3,06	1,454	1	44	22,2
				2	24	12,1
				3	54	27,3
				4	29	14,6
				5	47	23,8
2.	Na aplikaciji za onlajn bankarstvo se lako može pronaći broj telefona ili imejl kontakt službe za rešavanje problema.	3,57	1,349	1	21	10,6
				2	23	11,6
				3	46	23,2
				4	39	19,7
				5	69	34,9
3.	Na aplikaciji za onlajn bankarstvo se lako mogu pronaći najbliže ekspoziture.	3,59	1,306	1	19	9,6
				2	20	10,1
				3	51	25,8
				4	41	20,7
				5	67	33,8

Rezultati statističkih testova i diskusija

Neparametarski statistički testovi su primenjeni za istraživanje potencijalnih statistički značajnih razlika u odgovorima ispitanika u pogledu efikasnosti, dostupnosti i lakoće uspostavljanja kontakta. Korisćeni su Mann-Whitney i Kruskal-Wallis testovi s obzirom na to da podaci nisu pokazali normalnu raspodelu.

U tabeli 7 prikazani su rezultati Mann-Whitney testa u pogledu polne strukture ispitanika.

Tabela 7 - Rezultati Mann-Whitney testa (polna struktura ispitanika)

Skala	Odgovor	N	M	Md	Mann-Whitney	Z	Asymp. Sig.
Efikasnost	Muško	73	4,36	4,75	4014,500	-1,467	0,142
	Žensko	125	4,50	4,75			
Dostupnost	Muško	73	4,08	4,25	3896,500	-1,735	0,083
	Žensko	125	4,25	4,50			
Lakoća uspostavljanja kontakta	Muško	73	3,38	3,33	4486,500	-0,197	0,844
	Žensko	125	3,42	3,67			

Za **skalu efikasnosti**, rezultati Mann-Whitney testa pokazuju srednju vrednost 4,36 za muškarce i 4,50 za žene, sa medijanom 4,75 za obe grupe. Mann-Whitney Z vrednost je -1,467, a asimptotska značajnost (p-vrednost) je 0,142. Dobijena p-vrednost je veća od uobičajeno korišćenog praga od 0,05, što sugerise da ne postoji statistički značajna razlika između ispitanika muškog i ženskog pola u smislu njihove percepcije efikasnosti korišćenja aplikacije za onlajn bankarstvo. Dok ispitanici ženskog pola imaju nešto više srednje vrednosti, razlike nisu statistički značajne, što ukazuje da i muški i ženski korisnici generalno dele slična iskustva u pogledu efikasnosti aplikacija za onlajn bankarstvo.

Za **skalu dostupnosti**, Mann-Whitney test pokazuje da muškarci imaju srednju vrednost 4,08, dok žene imaju srednju vrednost 4,25. Vrednost medijane za muškarce je 4,25, a za žene 4,50. Mann-Whitney Z vrednost je -1,735, a asimptotska značajnost (p-vrednost) je 0,083. Dobijena p-vrednost je i dalje iznad praga od 0,05, što sugerise da ne postoji statistički značajna razlika između muških i ženskih ispitanika u pogledu dostupnosti aplikacije za onlajn bankarstvo.

Za **skalu lakoća uspostavljanja kontakta**, muškarci imaju srednju vrednost 3,38, dok žene imaju srednju vrednost 3,42, sa medijanom 3,33 za muškarce i 3,67 za žene. Mann-Whitney Z vrednost je -0,197, a asimptotska značajnost (p-vrednost) je 0,844. Dobijena p-vrednost je mnogo viša od praga od 0,05, što ukazuje da ne postoje statistički značajne razlike između ispitanika muškog i ženskog pola u pogledu njihovog iskustva sa kontakt informacijama u aplikaciji za onlajn bankarstvo. Uprkos maloj razlici u srednjim vrednostima, razlika nije statistički značajna, što implicira da oba pola imaju sličan nivo zadovoljstva ili iskustva kada je u pitanju kontaktiranje korisničke podrške ili pronalaženje kontakt informacija u aplikaciji.

Na osnovu ovih rezultata, potvrđena je **hipoteza 1** da ne postoji statistički značajna razlika između korisnika različitog pola u percepciji efikasnosti, dostupnosti i lakoće uspostavljanja kontakta u okviru aplikacije za onlajn bankarstvo.

U tabeli 8 prikazani su rezultati Kruskal-Wallis testa u pogledu starosne strukture ispitanika.

Tabela 8 - Rezultati Kruskal-Wallis testa (starosna struktura ispitanika)

Skala	Odgovor	N	M	Md	Kruskal-Wallis	df	Asymp. Sig.
Efikasnost	Od 18 do 24	32	4,67	5,00	7,919	4	0,095
	Od 25 do 34	24	4,31	4,75			
	Od 35 do 44	80	4,52	4,75			
	Od 45 do 54	48	4,37	4,75			
	Preko 54 godine	14	4,04	4,50			
Dostupnost	Od 18 do 24	32	4,39	4,63	3,654	4	0,455
	Od 25 do 34	24	4,05	4,25			
	Od 35 do 44	80	4,21	4,25			
	Od 45 do 54	48	4,11	4,50			
	Preko 54 godine	14	4,04	4,50			
Lakoća uspostavljanja kontakta	Od 18 do 24	32	3,75	3,83	5,567	4	0,234
	Od 25 do 34	24	3,54	3,33			
	Od 35 do 44	80	3,32	3,33			
	Od 45 do 54	48	3,38	3,33			
	Preko 54 godine	14	2,95	3,33			

Za **skalu efikasnosti**, statistika Kruskal-Wallis testa je 7,919, a asimptotska značajnost (p-vrednost) je 0,095. Pošto je dobijena p-vrednost veća od praga od 0,05, ne postoji statistički značajna razlika u uočenoj efikasnosti aplikacije za onlajn bankarstvo u različitim starosnim grupama. Iako su ispitanici od 18 do 24 godine zabeležili najveću srednju vrednost (4,67), ova razlika ne dostiže statistički značaj, što sugerise da sve starosne grupe slično doživljavaju efikasnost aplikacije.

Za **skalu dostupnosti**, statistika Kruskal-Wallis testa je 3,654, a asimptotska značajnost (p-vrednost) je 0,455, što je znatno iznad praga značajnosti od 0,05. Dakle, ne postoji statistički značajna razlika između starosnih grupa u pogledu dostupnosti aplikacije za onlajn bankarstvo. Iako postoje određene varijacije u srednjim vrednostima, sa najvišom srednjom vrednošću (4,39) kod ispitanika starosti od 18 do 24 godine, ove razlike nisu statistički značajne, što sugerise da sve starosne grupe slično doživljavaju dostupnost aplikacije.

Za **skalu lakoća uspostavljanja kontakta**, statistika Kruskal-Wallis testa je 5,567, a asimptotska značajnost (p-vrednost) je 0,234, što je takođe veće od praga od 0,05. Ovaj rezultat ukazuje da ne postoji statistički značajna razlika između starosnih grupa u pogledu karakteristika koje se odnose na kontakt prilikom korišćenja aplikacije za onlajn bankarstvo. Iako je primetan pad srednjih vrednosti za starije starosne grupe, pri čemu oni stariji od 54 godine beleže najnižu srednju vrednost (2,95), ove razlike nisu statistički značajne, što sugerise da starosna dob nema značajan uticaj na korisničko iskustvo u pogledu lakoće uspostavljanja kontakta.

Na osnovu ovih rezultata, potvrđena je **hipoteza 2**, da ne postoji statistički značajna razlika u uočenoj efikasnosti, dostupnosti i lakoći uspostavljanja kontakta u okviru aplikacije za onlajn bankarstvo među različitim starosnim grupama.

U tabeli 9 prikazani su rezultati Kruskal-Wallis testa u pogledu nivoa obrazovanja ispitanika.

Tabela 9 - Rezultati Kruskal-Wallis testa (obrazovni nivo ispitanika)

Skala	Odgovor	N	M	Md	Kruskal-Wallis	df	Asymp. Sig.
Efikasnost	Srednja škola	33	4,16	4,50	7,358	3	0,061
	Viša škola	29	4,63	5,00			
	Fakultet (osnovne i master studije)	101	4,47	4,75			
	Fakultet (doktorske studije)	35	4,51	4,75			
Dostupnost	Srednja škola	33	3,97	4,25	1,738	3	0,629
	Viša škola	29	4,16	4,50			
	Fakultet (osnovne i master studije)	101	4,26	4,50			
	Fakultet (doktorske studije)	35	4,19	4,25			
Lakoća uspostavljanja kontakta	Srednja škola	33	3,25	3,67	4,911	3	0,178
	Viša škola	29	3,82	4,00			
	Fakultet (osnovne i master studije)	101	3,39	3,33			
	Fakultet (doktorske studije)	35	3,25	3,00			

Za **skalu efikasnosti**, statistika Kruskal-Wallis testa je 7,358, sa p-vrednošću od 0,061. Dobijena p-vrednost je nešto iznad praga značajnosti od 0,05, što sugerise da ne postoji statistički značajna razlika u percipiranoj efikasnosti aplikacije među ispitanicima različitog nivoa obrazovanja. Iako je srednja vrednost za ispitanike sa višom školom (4,63) viša nego za druge grupe, razlika nije statistički značajna. To implicira da su percepcije efikasnosti korišćenja aplikacije za onlajn bankarstvo uglavnom slične među ispitanicima, bez obzira na njihov obrazovni nivo.

Za **skalu dostupnosti**, statistika Kruskal-Wallis testa je 1,738, sa p-vrednošću od 0,629, što je znatno iznad praga od 0,05. Ovaj rezultat ukazuje da ne postoji statistički značajna razlika u percipiranoj dostupnosti aplikacije za onlajn bankarstvo među ispitanicima različitih obrazovnih nivoa. Uprkos manjim varijacijama u srednjim vrednostima, pri čemu su ispitanici sa univerzitetskim obrazovanjem (i na osnovnim i master i na doktorskim studijama) zabeležili nešto više rezultate od onih sa srednjom školom, ali ove razlike nisu statistički značajne. Stoga se dostupnost kontakt podataka generalno doživljava

slično u različitim obrazovnim grupama.

Statistika Kruskal-Wallis testa za skalu **lakoća uspostavljanja kontakta** je 4,911, sa p-vrednošću od 0,178, što je opet iznad praga značajnosti od 0,05. Ovaj rezultat ukazuje da ne postoji statistički značajna razlika između nivoa obrazovanja u vezi sa karakteristikama aplikacije za onlajn bankarstvo koje se odnose na lakoću uspostavljanja kontakta. Dok ispitanici sa fakultetskim obrazovanjem beleže najvišu srednju vrednost (3,82), razlike nisu statistički značajne, što ukazuje na to da korisnici različitog obrazovnog nivoa generalno slično percipiraju karakteristike aplikacije koje se odnose na kontakt.

Na osnovu ovih rezultata, potvrđena je **hipoteza 3** da ne postoji statistički značajna razlika u uočenoj efikasnosti, dostupnosti i lakoći uspostavljanja kontakta u okviru aplikacije za onlajn bankarstvo u odnosu na nivo obrazovanja ispitanika.

Zaključak

U radu je sprovedeno istraživanje zasnovano na podacima prikupljenim putem posebno koncipiranog onlajn upitnika, kojim je obuhvaćeno 198 korisnika onlajn bankarstva u Srbiji, sa ciljem da se ispita uticaj demografskih faktora na percepciju efikasnosti, dostupnosti i lakoće uspostavljanja kontakta sa bankom. Rezultati statističkih testova koji su primenjeni u ovom istraživanju pokazali su da demografski faktori, uključujući pol, starost i nivo obrazovanja, nemaju statistički značajan uticaj na zadovoljstvo korisnika aplikacijama za onlajn bankarstvo. Na svim testiranim skalama - efikasnost, dostupnost i lakoća uspostavljanja kontakta - ispitanici iz različitih demografskih grupa iskazali su slična mišljenja i percepcije u pogledu aplikacija za onlajn bankarstvo. Bilo da su korisnici bili muškog ili ženskog pola, iz različitih starosnih grupa ili sa različitim nivoima obrazovanja, funkcionalnost aplikacije i korisničko iskustvo su bili približno slično ocenjeni. Ispitanici su generalno izrazili visok nivo zadovoljstva sa aplikacijama za onlajn bankarstvo, pri čemu je većina korisnika ocenila svoje iskustvo pozitivno, što je potvrđeno prosečnom ocenom od 4,41 i visokim procentom korisnika koji su zadovoljni i u potpunosti zadovoljni.

Dobijeni rezultati su značajni jer ukazuju na to da su aplikacije za onlajn bankarstvo dostigle nivo upotrebljivosti i dostupnosti koji zadovoljava različite grupe korisnika. Dizajn i funkcionalnost ovih aplikacija su ocenjeni kao efikasni u pružanju usluga različitim korisnicima, nudeći doslednu i efikasnu uslugu bez obzira na demografske karakteristike korisnika. Ova uniformnost u zadovoljstvu korisnika ukazuje na to da su aplikacije za onlajn bankarstvo intuitivne, jednostavne za korišćenje i koncipirane tako da zadovolje potrebe različitih korisnika.

Štaviše, dobijeni rezultati naglašavaju rastući značaj dizajna koji treba u potpunosti da bude usmeren na korisnika prilikom razvoja aplikacija za onlajn bankarstvo. Pristup usmeren na korisnika, koji u fokusu ima dostupnost, jednostavnost korišćenja i pouzdanost, ključan je za obezbeđivanje pozitivnog iskustva za sve korisnike. U sve digitalnijem svetu, gde se od bankarskih usluga očekuje da budu dostupne 24/7, sposobnost aplikacije da zadovolji različite korisničke potrebe postaje ključni faktor u održavanju angažovanosti i zadovoljstva klijenata. Mogućnost aplikacije da pruži pouzdano i jednostavno iskustvo ukazuje da je prilikom dizajniranja aplikacije stavljen fokus na zadovoljstvo korisnika. Na kraju, rezultati sugerišu da uspeh aplikacija za onlajn bankarstvo ne podrazumeva potrebu da se zadovolje specifične demografske grupe, već da se pruži univerzalno primenljiv i jednostavan interfejs. Ovo pojačava potrebu da finansijske institucije i programeri aplikacija nastave da se fokusiraju na kreiranje aplikacija koje su efikasne i pouzdane, osiguravajući

da svi korisnici, bez obzira na njihove karakteristike, mogu da ih koriste sa poverenjem i lakoćom.

Ovo istraživanje ima nekoliko ograničenja koja treba uzeti u obzir. Prvo, iako veličina uzorka od 198 ispitanika pruža razumnu osnovu za analizu, uzorak je obuhvatio samo korisnike usluga onlajn bankarstva u Srbiji. Kao takvi, rezultati nisu direktno primenljivi na druge regione ili zemlje sa različitim bankarskim praksama, kulturnim kontekstima ili tehnološkom infrastrukturom. Drugi ograničavajući faktor je što su podaci prikupljeni putem upitnika koji generalno podrazumevaju da ispitanici samostalno upisuju svoje odgovore što može da dovede do pristrasnosti i odgovora za koje ispitanici veruju da su društveno prihvatljiviji ili očekivani. Treće, iako istraživanje ispituje uticaj pola, starosti i obrazovanja na percepciju korisnika, drugi važni demografski faktori (kao što su prihod, profesija ili geografska lokacija unutar Srbije) nisu uzeti u obzir. Ovi faktori bi mogli da utiču na iskustva korisnika kada je reč o onlajn bankarskim aplikacijama, a njihovo izostavljanje ograničava mogućnost generalizacije dobijenih rezultata.

S obzirom na gore navedena ograničenja, preporuka je da buduća istraživanja na ovu temu obuhvate više zemalja. Veći i raznovrsniji uzorak koji bi uključio korisnike iz različitih regiona ili zemalja pomogao bi u analiziranju da li su rezultati isti ili ne u različitim kulturnim kontekstima, bankarskim sistemima i tehnološkim infrastrukturnim okvirima. Takođe, buduća istraživanja mogla bi da primene i alternativne metode prikupljanja podataka kako bi se minimizirale pristrasnosti do kojih mogu da dovedu upitnici. Na kraju, buduća istraživanja bi mogla da obuhvate širi skup demografskih faktora koji bi mogli da utiču na percepciju korisnika o aplikacijama za onlajn bankarstvo. Faktori kao što su prihod, zanimanje i geografska lokacija unutar određene zemlje (ili između više regiona) mogli bi da daju korisne zaključke o tome kako različiti segmenti populacije reaguju na aplikacije za onlajn bankarstvo. Razmatranjem ovih dodatnih varijabli, buduća istraživanja mogu da doprinesu dubljem razumevanju različitih faktora koji oblikuju korisničko iskustvo i zadovoljstvo sa onlajn bankarstvom.

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THE IMPACT OF DEMOGRAPHIC FACTORS ON USER PERCEPTIONS OF ONLINE BANKING APPLICATIONS: A STUDY OF EFFICIENCY, AVAILABILITY, AND EASE OF CONTACT

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Abstract: *This paper examines how demographic factors influence user perceptions of online banking applications, focusing on key aspects such as efficiency, availability, and ease of contact within banking applications. The research was conducted using a specially designed questionnaire that was implemented via the Google Forms platform in electronic form. The questionnaire was distributed to users of online banking in Serbia in the period from August 2024 to February 2025. A total of 198 respondents participated in research, with the data analyzed through non-parametric statistical methods, including the Mann-Whitney and Kruskal-Wallis tests. The results indicate no significant differences in users' perceptions of efficiency, availability, or ease of contact in online banking applications based on gender, age, and education. These findings provide valuable insights into the design and optimization of online banking services, highlighting that demographic factors do not significantly affect user satisfaction in these areas.*

Keywords: online banking, service quality, user perception, efficiency, customer contact, customer experience

JEL classification: D12, O33, G21

Introduction

The rise of information and communication technology has transformed banking, shifting from traditional, in-person services to various online formats (Chaimaa et al., 2021). Service quality in the context of online banking refers to the customer's perception of how well the service delivered meets their expectations (Mujinga, 2020). Parasuraman et al. (2005) defined service quality as the comparison between the actual service and the expected service. They argue that service quality plays a critical role in maintaining a competitive advantage for organizations, positively impacting their financial performance. As service quality improves, it fosters customer loyalty and contributes to increased market share. The results of previously conducted research indicate that intuitive interfaces, round-the-clock accessibility, and smooth transaction processes are key factors contributing to customer satisfaction and loyalty (Faisal et al., 2024). As more users rely on banking applications to manage their finances, the demand for intuitive design, real-time updates, and personalized experiences has grown significantly.

To stay competitive, banks need to focus on refining their mobile banking user experience to meet these evolving expectations. Key trends for 2025 include simplifying navigation and interface design, offering personalized real-time notifications, and incorporating personalized insights to enhance user engagement (Cantero, 2025). There are also signs of the transition from traditional banking applications to "super-applications" which will transform user expectations, as users now seek a unified platform that not only handles financial transactions but also integrates additional services such as bill payments, budgeting, and various non-financial services (Cheqly team, 2025). It is evident that the future of online banking applications is being shaped by the ongoing digital transformation, with innovations such as artificial intelligence, blockchain, and cloud computing driving more intuitive and user-centric banking experiences. As digital-only neo-banks gain popularity, traditional banking applications must evolve by incorporating advanced technologies like artificial intelligence and data analytics to stay competitive and meet the needs of tech-savvy users (Funcas, 2021; Boustani, 2022; Nowakowski, 2024; Lukić Nikolić, 2024).

In today's digital landscape, online banking serves as a crucial communication channel between banks and their clients. The speed, accessibility, and user-friendliness of online banking applications are increasingly significant in shaping overall user experience. This paper examines users' perceptions regarding three key aspects of online banking applications: efficiency, availability, and ease of contact with banks. The focus of the research is on how users perceive the functionality and customer support aspects of digital banking services. Specifically, it investigates whether demographic factors, including gender, age, and educational background, affect how users evaluate these aspects within online banking applications. The aim of this study is to identify statistically significant differences in users' perceptions based on their demographic characteristics, with the goal of enabling a more tailored adaptation of digital services to various user groups. Understanding these perceptions helps banks optimize their platforms to cater to the needs of various demographic groups. By recognizing and addressing demographic variations in user perceptions, banks can ensure that their online services are perceived positively across diverse clients' segments. This, in turn, can lead to increased client satisfaction, loyalty, and retention.

The paper is structured as follows. In addition to the introduction, a review of literature is provided, highlighting the key elements that determine the quality of online banking applications. This is followed by a presentation of the methodology used in the research, including the research hypotheses, the applied questionnaire, data collection methods, and the statistical tools used for data analysis. The

next section of the paper is dedicated to the research findings and a discussion of the results obtained. Finally, the conclusion presents the key results of the study, its implications, limitations, and suggestions for future research on this topic.

Literature Review

Researchers and practitioners have shown significant interest in online banking due to its growing relevance in the financial sector. Studies have focused on various factors that influence the acceptance and usage of online banking. Key variables include online banking adoption, where factors like user attitudes and intentions play a critical role in determining how and why clients choose to engage with online banking platforms. Additionally, technological innovation has been explored as a driving force in online banking's evolution, highlighting the role of advancements in mobile technology and internet services in enhancing customer experience (Shahid et al., 2022).

As a disruptive innovation, online banking brings numerous benefits to both banks and customers, including the ability to track account balances, transfer money, pay bills, and shop online (Chou & Chou, 2000). By enabling digital transactions, online banking enhances convenience and accessibility while reducing the need for physical branch visits (Amin, 2016). Additionally, online banking is reshaping the financial services industry by driving innovation, supporting growth and development, and strengthening the competitive edge of banks (Ayinaddis et al., 2023; Yang et al., 2023).

E-service quality has gained significant attention in recent years as an essential concept for evaluating online services. Overall, e-service quality research highlights the diverse factors that contribute to a client's perception of online services, underscoring the need for businesses to focus on continuous improvement in areas such as ease of use, reliability, and security to enhance customer satisfaction and loyalty (Lukić Nikolić, 2025). It refers to the overall evaluation of user experience with services delivered through digital platforms, focusing on aspects such as functionality, service, and security. E-services are primarily facilitated by digital intermediaries, offering clients self-service options that are accessible anytime and anywhere (Malc et al., 2023). The five key components of banking service quality that influence e-customer satisfaction and e-customer loyalty are e-customer service, site organization, application efficiency, user-friendliness, and the security and privacy of personal data (Gautam & Sah, 2023).

In the context of online banking, Herington and Weaven (2009) developed a set of service quality measurement scales based on personal needs, site organization, user-friendliness, and efficiency. Amin (2016) also explored online banking service quality using a multidimensional scale that includes personal needs, site organization, user-friendliness, and efficiency. More recently, Ui Haq and Awan (2020) focused on reliability, privacy and security, web design, and customer support during the COVID-19 pandemic, underlining the importance of service quality in the rapidly evolving e-banking sector.

Efficiency is a crucial aspect of e-banking service quality. It encompasses the user-friendliness, reliability, and overall organization of the information and services (Tomić et al., 2023). Efficiency can also be seen as a key factor influencing the decision to adopt e-banking services, as it offers a convenient alternative to traditional in-person banking. Additionally, the privacy and security features of e-banking services are of utmost importance. These attributes ensure the protection of clients' personal and financial information, as well as facilitate secure transactions in the online banking

environment (Malct al., 2023). Efficiency refers to how well the application responds to customer needs, while fulfillment deals with the timeliness and accuracy of service delivery. System availability focuses on minimizing downtime, and privacy emphasizes the protection of clients' information (Mujinga, 2020).

A study utilizing the technology acceptance model to explore mobile banking adoption among 202 university students in Serbia discovered that the key factors influencing adoption are "perceived usefulness" and "perceived security" (Lukić et al., 2019). In a similar vein, another research aimed to identify the primary determinants of mobile banking adoption in Serbia, also using the technology acceptance model. Conducted via an online survey with 167 participants in June-July 2020, the findings indicated that "mobile banking information," "perceived usefulness," and "perceived security" were significant factors affecting users' future intentions to adopt mobile banking (Antonijević et al., 2021).

Grönroos (2007) underscores the importance of addressing users' personal needs, such as their demographics, lifestyle, and preferences, in order to introduce new features that align with user expectations and enhance overall satisfaction. Previous studies have explored various factors that may influence users' perceptions of online banking services, particularly in terms of efficiency, availability, and ease of contact. One such factor is gender, with research suggesting that male and female users may perceive and interact with online banking applications differently. Some studies have found that gender differences in online banking perceptions may impact how users evaluate service attributes such as efficiency and ease of use (Laukkanen, 2016). Age has been shown to influence users' comfort and familiarity with technology, which may, in turn, affect their perceptions of online banking services. Older users, for example, may have different expectations regarding the efficiency and ease of use of online banking applications compared to younger, more tech-savvy users (Amin, 2016; Laukkanen, 2016). Educational background is also a factor that may shape users' perceptions of online banking. Users with higher levels of education might have different expectations regarding the functionality and security of online banking applications. They may be more likely to prioritize features like privacy and system availability, as well as the overall user experience (Herington & Weaven, 2009).

Research Methods

The hypotheses posed in this paper are:

Hypothesis 1: There is no statistically significant difference between male and female users in their perceptions of the efficiency, availability, and ease of contact within the online banking application.

Hypothesis 2: There is no statistically significant difference in the perceived efficiency, availability, and ease of contact within the online banking application across different age groups.

Hypothesis 3: There is no statistically significant difference in the perceived efficiency, availability, and ease of contact within the online banking application across different educational levels.

The research was conducted using a specially designed questionnaire filled out by users of online banking services in Serbia. The questionnaire consisted of two parts. The first part of the questionnaire included four questions related to the respondents: gender, age, education and their level of satisfaction with the online banking application. The second part of the questionnaire related to three scales named Efficiency, Availability and Ease of Contact. Scales consisted of 11 statements related to functionalities of online banking applications. The **Efficiency** scale (4 statements) assesses the ease of use and user experience of an online banking application, focusing on factors such as quick access, intuitive design, organization of information, and efficient transaction completion.

It aims to evaluate how seamlessly users can navigate and perform tasks within the application. The **Availability** scale (4 statements) evaluates the reliability and performance of the online banking application, focusing on factors such as smooth operation, consistent accessibility, and proactive communication regarding maintenance or updates. The **Ease of Contact** scale (3 statements) measures the accessibility and availability of customer support within the online banking application, focusing on the presence of chat services, ease of finding con-tacts information, and locating nearby branches. It evaluates how effectively the application provides users with assistance and resources to resolve issues or find additional support. The statements in the scales were formed based on work of Malc et al., 2023 and presented in Tables 4, 5 and 6.

The average time of filling out the questionnaire was 10 minutes. The questionnaire was administered using Google Forms platform, ensuring easy access and a user-friendly experience. The sample for this research was obtained using the convenience sampling method, which involves the selection of participants based on their accessibility and willingness to take part in the research. The target population consisted of active users of online banking services in Serbia. The sample was not predetermined according to statistical criteria of representativeness; rather, it was constructed by making the research instrument (i.e., the questionnaire) accessible to a broader group of relevant users. The questionnaire link was distributed through multiple communication channels: (1) social media platforms (Facebook and LinkedIn), (2) thematic forums and specialized groups focused on digital banking, and (3) direct contact via e-mail, accompanied by a brief explanation of the research purpose and an invitation to participate. In this way, potential respondents were identified either based on their demonstrated interest or prior engagement with topics related to digital banking, or—when contacted directly—based on confirmed use of online banking services. Based on social network analytics and email distribution records, it is estimated that approximately 500 potential respondents viewed the questionnaire. From August 2024 to February 2025, a total of 198 individuals completed the questionnaire, yielding a response rate of nearly 40%, which is considered satisfactory in the social sciences (De Vaus, 2013). The respondents participated voluntarily and provided full consent for the use of their data for the purposes of scientific research.

The collected responses were processed using Microsoft® Excel® 2019 and Statistical Software for Social Sciences (SPSS), version 26. The Kolmogorov-Smirnov test was used to assess the normality of data distribution. Since the results with significance, Sig.=0.000 showed that the assumption of normality of data distribution was not satisfied, non-parametric techniques were applied for statistical analysis. The Mann-Whitney test was used to compare differences between two groups, while the Kruskal-Wallis test was used to compare differences between three or more groups with a 95% confidence interval. Levene's test for equality of variances was applied in all tests comparing differences between groups, satisfying the assumption of homogeneous variance in all cases ($p > 0.05$).

Table 1 presents the results of Cronbach's Alpha coefficient for all three used scales. All values are above the threshold of 0.7, indicating high reliability of used scales.

Table 1 - The Cronbach Alpha Coefficient

No	Scales	N	Cronbach's Alpha
1.	Efficiency	4	0.904
2.	Availability	4	0.831
3.	Ease of contact	3	0.767

Research Results and Discussion

Table 2 presents the key information about the respondents. The sample consists of a higher proportion of female respondents (63.1%) compared to males (36.9%). The age distribution indicates that the largest number of respondents (40.4%) are in the 35 to 44 years age range. The next highest group is the 45 to 54 years category (24.2%). The younger age groups (18-24 years and 25-34 years) represent a smaller proportion of the sample (16.2% and 12.1%, respectively). The educational background reveals predominantly well-educated respondents, with over half (51.0%) holding university degrees (bachelor's or master's). Additionally, 17.7% have pursued doctoral studies. The lower percentages of respondents have finished secondary school (16.7%) and college (14.6%).

Table 2 - Key Information about the Respondents

	N	%
Gender		
Male	73	36.9
Female	125	63.1
Age		
From 18 to 24 years	32	16.2
From 25 to 34 years	24	12.1
From 35 to 44 years	80	40.4
From 45 to 54 years	48	24.2
Above 54 years	14	7.1
Education		
Secondary school	33	16.7
College	29	14.6
University (bachelor and master studies)	101	51.0
University (doctoral studies)	35	17.7

Table 3 presents the respondents' satisfaction with online banking application, measured on a five-point Likert scale. The mean satisfaction score is 4.41. This indicates that, on average, respondents report being relatively satisfied with online banking applications. The standard deviation of 0.754 indicates a moderate level of consistency in responses. The majority of respondents (approximately 89%) report being satisfied or very satisfied with online banking application (34.3% satisfied and 54.6% very satisfied). Only a small percentage of respondents (2.5%) are dissatisfied, while 8.6% of respondents remain neutral.

Table 3 - Descriptive Statistics Regarding Satisfaction with Online Banking Applications

No	Satisfaction	M	SD	Marks	N	%
1.	I am satisfied with online banking application.	4.41	0.754	1	0	0.0
				2	5	2.5
				3	17	8.6
				4	68	34.3
				5	108	54.6

Table 4 presents descriptive statistics for the **Efficiency** scale. The statement that respondents can easily and quickly access the online banking application has a mean value of 4.55, indicating a strong level of agreement with this statement. This high mean suggests that, overall, users find the online banking applications highly accessible and efficient to use. The standard deviation of 0.840 reflects some variability in responses, but the relatively low value implies that most users share a similar positive experience regarding accessibility. In terms of the distribution, a significant majority of respondents, 72.3% (143 respondents), strongly agree with the statement, while 14.6% (29 respondents) agree. Only 10.6% (21 respondents) expressed neutrality, and a very small proportion, 2.5% (5 respondents), either disagreed or strongly disagreed.

The statement regarding the ease of use of the online banking application has a mean value of 4.50, which indicates that respondents generally find the application very user-friendly. The standard deviation of 0.841 reveals a moderate level of variability in responses, but it is still relatively low, implying that most respondents share a similar positive experience in terms of ease of use. The distribution of responses further supports this, with 66.7% (132 respondents) strongly agreeing, and 20.7% (41 respondents) agreeing with the statement. Only a small percentage of respondents, 10.6% (21 respondents), expressed neutrality, while just 2.0% (4 respondents) disagreed. These results suggest that the online banking application is generally perceived as easy to use.

The statement regarding the organization and intuitiveness of the information in the online banking application has a mean value of 4.14, indicating that while the majority of respondents agree that the application's information is well-organized and intuitive, the level of agreement is slightly lower than the previous statement about ease of use. The standard deviation of 0.982 suggests a greater variability in responses compared to the previous statement, indicating that some respondents may not find the organization and layout as intuitive or well-structured as others. The response distribution shows that 46.4% (92 respondents) strongly agree, and 29.3% (58 respondents) agree with the statement. However, 17.7% (35 respondents) expressed neutrality, and a small percentage, 6.6% (13 respondents), disagreed with the statement. This indicates that while the majority of respondents find the information in the application well-organized, there are possibilities for improvement, especially for the smaller group of respondents who were less satisfied with the organization and intuitiveness.

The statement about the ability to quickly complete transactions in the online banking application has the highest mean value of 4.60, indicating that the vast majority of respondents agree strongly that the application facilitates quick transactions. The standard deviation of 0.798 reflects a relatively low level of variability in responses, suggesting that most respondents share a similar, highly positive experience when it comes to completing transactions quickly. In terms of distribution, an overwhelming 75.3% (149

respondents) strongly agree with the statement, and 13.1% (26 respondents) agree. Only a small portion of respondents, 9.1% (18 respondents), expressed neutrality, and an even smaller proportion, 2.5% (5 respondents), disagreed. These results indicate that the online banking application is highly effective in enabling users to complete their transactions quickly and efficiently.

Table 4 - Descriptive Statistics Regarding the Efficiency of Online Banking Applications

No	Statements	M	SD	Marks	N	%
1.	I can easily and quickly access the online banking application.	4.55	0.840	1	3	1.5
				2	2	1.0
				3	21	10.6
				4	29	14.6
				5	143	72.3
2.	The online banking application is easy to use.	4.50	0.841	1	4	2.0
				2	0	0.0
				3	21	10.6
				4	41	20.7
					132	66.7
3.	The information in the online banking application is well-organized and intuitive, enhancing the overall user experience.	4.14	0.982	1	3	1.5
				2	10	5.1
				3	35	17.7
				4	58	29.3
				5	92	46.4
4.	The online banking application lets me quickly complete transactions whenever I need to.	4.60	0.798	1	2	1.0
				2	3	1.5
				3	18	9.1
				4	26	13.1
				5	149	75.3

Table 5 presents descriptive statistics for the **Availability** scale. The statement about the online banking application launching effortlessly has a mean value of 4.35, suggesting that most users agree that the application starts without any issues. This is a positive result, indicating that users generally do not face significant barriers when attempting to launch the application. The standard deviation of 0.882 reflects moderate variability in responses, suggesting that while most users have a smooth experience, there are some with varying degrees of satisfaction. The response distribution shows that 57.1% (113 respondents) strongly agree, and 26.3% (52 respondents) agree with the statement. Only a small percentage of respondents, 12.1% (25 respondents), remained neutral, and 4.5% (9 respondents) disagreed, while 0.5% (1 respondents) strongly disagreed. This indicates that the majority of users experience no significant issues with launching the application, although a few users report occasional difficulties.

The statement regarding the smooth operation of the online banking application has a mean value of 3.89, suggesting a positive but more moderate level of agreement compared to other statements. The standard deviation of 1.034 indicates a higher degree of variability in responses, suggesting that user experiences with application performance might differ more widely. The distribution of responses shows that 32.3% (64 respondents) strongly agree and 37.9% (75 respondents) agree, which is a positive outcome, indicating that a significant portion of users experience smooth operation. However, 19.7% (39 respondents) expressed neutrality, and 10.1% (20 respondents) disagreed, with 3.0% (6 respondents) strongly disagreeing. These results suggest that while the application performs well for most users, there is still a notable proportion of respondents who experience interruptions or downtimes, which could be areas for improvement.

The statement about the application being always accessible and functional has a mean value of 4.30, reflecting a strong positive perception of its accessibility and reliability. The standard deviation of 0.889 indicates a moderate level of consistency in user experiences, with most respondents sharing similar views about the application's reliability. In terms of distribution, 52.1% (103 respondents) strongly agree, and 32.3% (64 respondents) agree, showing that the majority of users find the application accessible and functional. Only 10.6% (21 respondents) remained neutral, and 5.0% (10 respondents) disagreed with the statement, while 1.0% (2 respondents) strongly disagreed. These results suggest that, while the application is highly functional for most users, there is a small proportion who may have experienced issues with accessibility or functionality.

The statement about receiving notifications for scheduled downtime has a mean value of 4.19, indicating a relatively high level of agreement among users that they are informed about maintenance or updates. The standard deviation of 1.133 suggests that there is more variability in the responses compared to other statements, possibly due to varying experiences in the notification system. The distribution of responses shows that 56.1% (111 respondents) strongly agree and 21.7% (43 respondents) agree, suggesting that most users are satisfied with the communication about scheduled downtime. However, 12.1% (24 respondents) were neutral, and 10.1% (20 respondents) disagreed, with 4.5% (9 respondents) strongly disagreeing. These results indicate that while a majority of users receive notifications, there is a smaller group who either do not receive them or are not satisfied with the communication, suggesting a potential area for improvement.

Table 5 - Descriptive Statistics Regarding the Availability of Online Banking Applications

No	Statements	M	SD	Marks	N	%
1.	The online banking application launches effortlessly, without any issues.	4.35	0.882	1	1	0.5
				2	8	4.0
				3	25	12.1
				4	52	26.3
				5	113	57.1
2.	The online banking application runs smoothly without any interruptions or downtime.	3.89	1.034	1	6	3.0
				2	14	7.1
				3	39	19.7
				4	75	37.9
				5	64	32.3

No.	Statements	M	SD	Marks	N	%
3.	My online banking application is always accessible and fully functional.	4.30	0.889	1	2	1.0
				2	8	4.0
				3	21	10.6
				4	64	32.3
				5	103	52.1
4.	I regularly receive notifications about scheduled downtime for upgrades or updates.	4.19	1.133	1	9	4.5
				2	11	5.6
				3	24	12.1
				4	43	21.7
				5	111	56.1

Table 6 presents descriptive statistics for the **Ease of Contact** scale. The statement regarding the availability of a chat service (online chatbot) for assistance has a mean value of 3.06, suggesting a relatively neutral or mixed response from the respondents. The standard deviation of 1.454 indicates considerable variability in responses, pointing to a wide range of opinions on this feature. The distribution of responses shows that 27.3% (54 respondents) were neutral, 23.8% (47 respondents) strongly agreed, and 14.6% (29 respondents) agreed. However, 22.2% (44 respondents) strongly disagreed, and 12.1% (24 respondents) disagreed, indicating that a significant portion of users do not have easy access to chatbot service.

The statement about finding contact information for customer support in the online banking application has a mean value of 3.57, reflecting a somewhat positive, yet not overwhelmingly strong, level of agreement. The standard deviation of 1.349 indicates that there is considerable variability in responses, meaning that while some users find the contact information easy to access, others may face challenges in locating it. In terms of response distribution, 34.9% (69 respondents) strongly agreed, and 19.7% (39 respondents) agreed with the statement, which is a positive outcome. However, 23.2% (46 respondents) remained neutral, and 22.2% (44 respondents) disagreed or strongly disagreed. These findings suggest that while the majority of respondents can find customer support contact information relatively easily, a significant portion still faces difficulty or is dissatisfied with the visibility or accessibility of contact details.

The statement about the ease of finding the nearest branches in the online banking application has a mean value of 3.59, which is slightly more positive than the previous two statements but still indicates that the feature could be further optimized. The standard deviation of 1.306 reflects moderate variability in responses, meaning that while many users find it easy to locate branches, there is still a fair amount of disagreement or neutrality regarding the feature. The distribution of responses shows that 33.8% (67 respondents) strongly agreed, and 20.7% (41 respondents) agreed with the statement, indicating a positive experience for a substantial portion of users. However, 25.8% (51 respondents) were neutral, and 19.7% (39 respondents) disagreed or strongly disagreed. These results suggest that while many users can easily find the nearest branches, a sizable portion of users may have difficulty accessing this feature or are not satisfied with how the information is presented.

Table 6 - Descriptive Statistics Regarding the Ease of Contact Via Online Banking Applications

No	Statements	M	SD	Marks	N	%
1.	The online banking application offers a chat service (online chatbot) for assistance.	3.06	1.454	1	44	22.2
				2	24	12.1
				3	54	27.3
				4	29	14.6
				5	47	23.8
2.	The online banking application makes it easy to find contact information, such as phone numbers or email, for customer support.	3.57	1.349	1	21	10.6
				2	23	11.6
				3	46	23.2
				4	39	19.7
				5	69	34.9
3.	The online banking application makes it easy to find the nearest branches.	3.59	1.306	1	19	9.6
				2	20	10.1
				3	51	25.8
				4	41	20.7
				5	67	33.8

Results of Statistical Tests and Discussions

Non-parametric statistical tests were used to investigate potential statistically significant differences in answers of respondents regarding efficiency, availability and ease of contact. The Mann-Whitney and Kruskal-Wallis tests were used since the data did not follow normal distribution.

Table 7 presents the results of the Mann-Whitney test regarding gender structure of the respondents.

Table 7 - Results of the Mann-Whitney Test (Gender Structure of Respondents)

Scale	Answers	N	Mean (M)	Median (Md)	Mann-Whitney	Z	Asymp. Sig.
Efficiency	Male	73	4.36	4.75	4014.500	-1.467	0.142
	Female	125	4.50	4.75			
Availability	Male	73	4.08	4.25	3896.500	-1.735	0.083
	Female	125	4.25	4.50			
Ease of contact	Male	73	3.38	3.33	4486.500	-0.197	0.844
	Female	125	3.42	3.67			

For the **Efficiency** scale, the Mann-Whitney test results show a mean value of 4.36 for males and 4.50 for females, with a median of 4.75 for both groups. The Mann-Whitney Z value is -1.467, and the asymptotic significance (p-value) is 0.142. This p-value is greater than the commonly used threshold of 0.05, suggesting that there is no statistically significant difference between male and female respondents in terms of their perceptions of efficiency in using the online banking application. While females report slightly higher mean scores, the differences are not statistically significant, indicating that both male and female users generally share similar experiences in terms of efficiency.

For the **Availability** scale, the Mann-Whitney test shows that males have a mean value of 4.08, while females have a mean of 4.25. The median value for males is 4.25 and for females 4.50. The Mann-Whitney Z value is -1.735, and the asymptotic significance (p-value) is 0.083. This p-value is still above the 0.05 threshold, suggesting that there is no statistically significant difference between male and female respondents regarding the availability of the online banking application.

For the **Ease of Contact** scale, males have a mean value of 3.38, and females have a mean value of 3.42, with a median of 3.33 for males and 3.67 for females. The Mann-Whitney Z value is -0.197, and the asymptotic significance (p-value) is 0.844. This p-value is much higher than the 0.05 threshold, indicating that there is no statistically significant difference between male and female respondents regarding their experiences with the contact features of the online banking application. Despite the slight difference in mean scores, the difference is not statistically significant, implying that both genders have similar levels of satisfaction or experience when it comes to contacting customer support or finding contact information within the application.

Based on these results, **Hypothesis 1** that there is no statistically significant difference between male and female users in their perceptions of the efficiency, availability, and ease of contact within the online banking application, is confirmed.

Table 8 presents the results of the Kruskal-Wallis test regarding the age structure of the respondents.

Table 8 - Results of the Kruskal-Wallis Test (Age Structure of Respondents)

Scale	Answers	N	Mean (M)	Median (Md)	Kruskal-Wallis	df	Asymp. Sig.
Efficiency	From 18 to 24 years	32	4.67	5.00	7.919	4	0.095
	From 25 to 34 years	24	4.31	4.75			
	From 35 to 44 years	80	4.52	4.75			
	From 45 to 54 years	48	4.37	4.75			
	Above 54 years	14	4.04	4.50			
Availability	From 18 to 24 years	32	4.39	4.63	3.654	4	0.455
	From 25 to 34 years	24	4.05	4.25			
	From 35 to 44 years	80	4.21	4.25			
	From 45 to 54 years	48	4.11	4.50			
	Above 54 years	14	4.04	4.50			

Ease of contact	From 18 to 24 years	32	3.75	3.83	5.567	4	0.234
	From 25 to 34 years	24	3.54	3.33			
	From 35 to 44 years	80	3.32	3.33			
	From 45 to 54 years	48	3.38	3.33			
	Above 54 years	14	2.95	3.33			

For the **Efficiency** scale, the Kruskal-Wallis test statistic is 7.919, and the asymptotic significance (p-value) is 0.095. Since this p-value is greater than the threshold of 0.05, there is no statistically significant difference in the perceived efficiency of the online banking application across the various age groups. Although the 18 to 24-year-olds report the highest mean value (4.67), this difference does not reach statistical significance, suggesting that overall, all age groups perceive the efficiency of the application similarly.

For the **Availability** scale, the Kruskal-Wallis test statistic is 3.654, and the asymptotic significance (p-value) is 0.455, which is well above the significance threshold of 0.05. Therefore, there is no statistically significant difference between the age groups regarding the availability of the online banking application. While there is some variation in the mean scores, with 18 to 24-year-olds reporting the highest mean value (4.39), these differences are not statistically significant, suggesting that all age groups perceive the availability of the application similarly.

For the **Ease of Contact** scale, the Kruskal-Wallis test statistic is 5.567, and the asymptotic significance (p-value) is 0.234, which is also greater than the 0.05 threshold. This result indicates that there is no statistically significant difference between age groups regarding the contact features of the online banking application. While there is a noticeable decline in the mean scores for older age groups, with those above 54 years reporting the lowest mean value (2.95), these differences are not statistically significant, suggesting that age does not have a strong effect on user experiences with contact-related features.

Based on these results, **Hypothesis 2**, that there is no statistically significant difference in the perceived efficiency, availability, and ease of contact within the online banking application across different age groups, is confirmed.

Table 9 shows the results of the Kruskal-Wallis test regarding the respondents' educational level.

Table 9 - Results of the Kruskal-Wallis Test (Educational Level of Respondents)

Scale	Answers	N	Mean (M)	Median (Md)	Kruskal-Wallis	df	Asymp. Sig.
Efficiency	Secondary school	33	4.16	4.50	7.358	3	0.061
	College	29	4.63	5.00			
	University (bachelor and master studies)	101	4.47	4.75			
	University (doctoral studies)	35	4.51	4.75			

Availability	Secondary school	33	3.97	4.25	1.738	3	0.629
	College	29	4.16	4.50			
	University (bachelor and master studies)	101	4.26	4.50			
	University (doctoral studies)	35	4.19	4.25			
Ease of contact	Secondary school	33	3.25	3.67	4.911	3	0.178
	College	29	3.82	4.00			
	University (bachelor and master studies)	101	3.39	3.33			
	University (doctoral studies)	35	3.25	3.00			

For the **Efficiency** scale, the Kruskal-Wallis test statistic is 7.358, with a p-value of 0.061. This p-value is slightly above the significance threshold of 0.05, suggesting that there is no statistically significant difference in perceived efficiency across different educational levels. Although the mean score for respondents with a college education (4.63) is higher than for other groups, the difference is not statistically significant. This implies that the perceptions of efficiency in using the online banking application are generally similar among respondents, regardless of their educational level.

For the **Availability** scale, the Kruskal-Wallis test statistic is 1.738, with a p-value of 0.629, which is well above the 0.05 threshold. This result indicates that there is no statistically significant difference in the perceived availability of the online banking application between respondents from different educational levels. Despite minor variations in mean values, with university-educated respondents (both bachelor/master and doctoral levels) reporting slightly higher scores than those with secondary school education, these differences are not statistically significant. Therefore, availability is generally perceived similarly across different educational groups.

The Kruskal-Wallis test statistic for **Ease of Contact** scale is 4.911, with a p-value of 0.178, which again is above the significance threshold of 0.05. This suggests that there is no statistically significant difference between educational levels regarding the contact-related features of the online banking application. While college-educated respondents report the highest mean score (3.82), the differences are not statistically significant, indicating that users from various educational levels generally perceive the contact features of the application similarly.

Based on these results, **Hypothesis 3** that there is no statistically significant difference in the perceived efficiency, availability, and ease of contact within the online banking application across different educational levels, is confirmed.

Conclusion

In this paper, research was conducted based on data collected through a specially designed online questionnaire, which included 198 users of online banking in Serbia, with the aim of examining the

influence of demographic factors on the perception of efficiency, availability, and ease of establishing contact with the bank. The results of the statistical tests conducted in this research suggest that demographic factors, including gender, age, and educational level, do not have a statistically significant impact on user satisfaction with online banking applications. Across all tested scales - efficiency, availability, and ease of contact scale - respondents from various demographic groups reported similar experiences and perceptions of the online banking applications. Whether users were male or female, from different age groups, or from varying educational levels, the application's functionality and user experience appeared to be universally appreciated. The respondents generally express high satisfaction with online banking applications, with the majority rating their experience positively, as evidenced by the mean score of 4.41 and the overwhelming proportion of satisfied and very satisfied users.

This finding is significant because it highlights that online banking applications have achieved a level of usability and accessibility that accommodates a broad spectrum of users. The design and functionality of these applications are evidently effective in serving a diverse client base, offering consistent and efficient service regardless of the user's demographic characteristics. Such uniformity in user satisfaction suggests that the application is intuitive, user-friendly, and capable of meeting the needs of various users with ease.

Moreover, these results underscore the growing importance of user-centric design in the development of online banking applications. A user-centric approach, which prioritizes accessibility, ease of use, and reliability, is essential to ensure that the application delivers a positive experience to all users. In an increasingly digital world, where banking services are expected to be available 24/7, the ability of an application to cater to diverse user needs becomes a crucial factor in maintaining user engagement and satisfaction. The application's ability to provide a reliable and straightforward experience suggests that it has been designed with a strong focus on client satisfaction, making it both accessible and effective for a wide range of users. Finally, the results suggest that the success of online banking applications lies not in catering to specific demographic groups but in offering a universally applicable, user-friendly interface. This reinforces the need for financial institutions and application developers to continue focusing on creating applications that are efficient, reliable, and inclusive, ensuring that all users, regardless of their background, can use them with confidence and ease.

This research is accompanied by several limitations that should be taken into account. Firstly, while the sample size of 198 respondents provides a reasonable basis for analysis, it is limited to users of online banking services in Serbia. As such, the findings may not be directly applicable to other regions or countries with different banking practices, cultural contexts, or technological infrastructures. Secondly, the data collected through a questionnaire relies on self-reporting by participants. This introduces potential biases, such as social desirability bias, where respondents may provide answers they believe are more socially acceptable or expected. Thirdly, although the research examines the impact of gender, age, and education on users' perceptions, other important demographic factors (such as income, occupation, or geographic location within Serbia) were not considered. These factors could potentially influence users' experiences with online banking services, and their omission may limit the generalizability of the findings.

Given the limitations of this research, future research could benefit from expanding the geographical scope of the research. A larger, more diverse sample that includes users from various regions or

countries would help to assess whether the findings are consistent across different cultural contexts, banking systems, and technological infrastructures. Additionally, future research could explore the use of alternative data collection methods to minimize the biases introduced by self-reporting. Finally, future research should consider including a wider range of demographic factors that could influence user perceptions of online banking applications. Factors such as income, occupation, and geographic location within a given country (or across multiple regions) could provide valuable insights into how different segments of the population interact with online banking applications. By addressing these additional variables, future studies would contribute to a more nuanced understanding of the diverse factors that shape user experiences and satisfaction with online banking.

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