UTICAJ KVALITETA LOGISTIČKIH USLUGA NA ZADOVOLJSTVO KORISNIKA U SRBIJI

***Miloš Dašić*[29]**

doi: 10.5937/Oditor2202108D

Originalni naučni rad
UDK: 005.346:366.1(497.11)

Rezime

Istraživanje je nastalo kao pokušaj otkrivanja uloge kvaliteta usluga u zadovoljstva korisnika u cilju bržeg i efikasnijeg odgovora logističkih kompanija na njihove promenljive potrebe. Posebno, pred istraživanje je postavljeno pitanje da li se na osnovu stavova korisnika u pogledu percipiranog kvaliteta logističkih usluga može predvideti njihovo zadovoljstvo. U istraživanju je korišćen prigodni uzorak od 234 ispitanika koji je obuhvatio korisnike koji su poslednjih godina koristili usluge špediterskih preduzeća iz Srbije. Za obradu prikupljenih odgovora ispitanika, korišćena je tehnika regresione analize. Rezultati istraživanja potvrđuju značajnu pozitivnu korelaciju između kvaliteta logističkih usluga i zadovoljstva korisnika. Kvalitet logističkih usluga se identifikuje kao značajan prediktor zadovoljstva korisnika u Srbiji. Pokazalo se takođe da najveći uticaj na zadovoljstvo korisnika ostvaruje odgovornost kao indikator kvaliteta usluga prema SERVPERF modelu. Ostale karakteristike kvaliteta usluga – pouzdanost i opipljivi elementi pokazuju srednje, dok sigurnost i empatija manje značajnu pozitivnu korelaciju sa zadovoljstvom korisnika.

***Ključne reči**: kvalitet logističkih usluga, SERVPERF model, zadovoljstvo korisnika, determinante kvaliteta logističkih usluga*

***JEL:** L15, L80.*

[29] Nastavnik veština, Miloš Dašić, Akademija strukovnih studija Južna Srbija, Odsek Visoka poslovna škola Blace, Srbija, Kralja Petra I/70, Telefon: +381 37 371377, E-mail: dasicmil@yahoo.com

Uvod

U uslovima stalnog porasta konkurentnosti u sektoru usluga, sposobnost kompanija da razumeju svoje korisnike i obezbede njihovo zadovoljstvo postaje sve značajnija. Većina naučnika u svojim radovima naglašava da je korisnik najvažniji deo poslovanja svakog uslužnog sektora (Meidutė, Litvinenko, Aranskis, 2012; Kilibarda, Zečevic, Vidović, 2012; Huang, Huang, 2012). Važno je imati na umu da je delatnost uslužnog sektora orijentisana upravo na korisnike i da rezultati uslužnih kompanija direktno zavise od izbora korisnika. S obzirom na ovo, slobodno se može reći da je jedan od najvažnijih garanta trenutnog uspeha logističkog poslovanja kvalitet pruženih usluga, posebno kada se zna da je usluga neopipljiv čin ili proces (Chen, Chang, Lai, 2009; Huang, Wang, Xue, 2012) i stoga usko povezan sa zadovoljenjem potreba korisnika. Prema stavovima određenog broja autora (Zeithaml, Berry, Parasuraman, 1993; Woodall, 2001; Chapman, Soosay, Kandampully, 2003; Gorla, Somers, Wong, 2010), ispoljavanje očekivanja zavisi od toga kako korisnici percipiraju i tumače faktore sredine koji utiču na njihovo formiranje. Neke faktore kompanija može kontrolisati, predvideti i za njih biti spremna, ali drugi u većoj meri zavise od korisnika (psihološki, kulturni, društveni), zbog čega se logističke kompanije suočavaju sa ogromnim izazovom da razumeju svoje korisnike, saznaju njihove potrebe i nastoje da ispune njihova očekivanja.

Kvalitet usluga i sa njom povezano zadovoljstvo korisnika su dva veoma blisko povezana, a ponekad čak i identična koncepta. Zadovoljstvo korisnika je ključni faktor u proceni kvaliteta usluga. Određeni autori (Caceres, Paparoidamis, 2007; Gorla, Somers, Wong, 2010) tvrde da je kvalitet usluga prethodnik zadovoljstva korisnika, zbog čega se može pretpostaviti da usluga visokog kvaliteta vodi do zadovoljstva. Međutim, nema sumnje da su oba ova konstrukta generalno prepoznata kao glavni odlučujući faktori u održavanju dugoročnih i uspešnih poslovnih odnosa (Jayawardhena, 2010; Hoang, Igel, Laosirihongthong, 2010).

Kvalitet logističkih usluga i zadovoljstvo korisnika posebno su važni u sadašnjem poslovnom okruženju, jer je odnos između pružaoca usluga i korisnika obično dugoročan (ili se bar pokušava održati takvim). Zbog toga se jedan od najznačajnijih elemenata na tržištu usluga odnosi na razvijanje interakcije sa korisnicima (Caceres, Paparoidamis, 2007) koji se postiže isporučivanjem usluga čiji kvalitet premašuje očekivanja i dovodi do odgovarajućeg nivoa zadovoljstva. Verc (Wirtz, 2001) takođe naglašava da zadovoljstvo korisnika postaje ključni element kompanija u nastojanju da promovišu ponovljene poslovne odnose i dugoročno povećaju profitabilnost.

Drugi se autori slažu da je u trenutnom konkurentskom okruženju opasnost biti organizacija koja nije orijentisana na korisnike (Liu, Xie, 2013). Većina organizacija je konkurentna, ali je za opstanak na tržištu neophodno pružiti usluge visokog kvaliteta kako bi postojeće i buduće korisnike učinila zadovoljnim i lojalnim.

Ovaj rad se fokusira na ispitivanje prediktivne uloge kvaliteta logističkih usluga u zadovoljstvu korisnika u Srbiji. Cilj ovog rada je utvditi u kojoj meri percepcije korisnika u pogledu kvaliteta logističkih usluga utiču na nivo njihovog zadovoljstva.

Pregled literature

Iz širokog spektra literature o kvalitetu usluga i zadovoljstvu korisnika može se zaključiti da je reč o konceptualno različitim, ali usko povezanim konstruktima (Parasuraman, Zeithaml, Berry, 1994; Dabholkar, 1995; Shemwell, Yavas, Bilgin, 1998). Tako su na primer, Rast i Oliver (Rust, Oliver, 1994, str. 73) objasnili da su "sveukupno zadovoljstvo korisnika pružaocem usluga i percipiran kvalitet usluge bez sumnje međusobno povezani i u mnogim slučajevima u velikoj korelaciji." Istovremeno, brojne studije su ponudile dokaze kojima se podržava pozitivan odnos između zadovoljstva korisnika i kvaliteta usluge (Yee, Yeung, Cheng, 2011), uprkos diskusijama na temu njihove uzročno-posledične veze u smislu da kvalitet usluga vodi do zadovoljstva (McDougall, Leveskue, 2000; Negi, 2009), odnosno zadovoljstvo korisnika doprinosi kvalitetu usluga (Cronin, Taylor, 1992). Drugačije rečeno, oba konstrukta su nezavisna, ali usko povezana, što implicira da će porast jednog verovatno dovesti do povećanja drugog (Sureshchandar, Rajendran, Anantharaman, 2002).

Rezultati brojnih istraživanja potvrđuju prethodno iznetu tezu. U istraživanju uticaja kvaliteta usluga na zadovoljstvo i lojalnost korisnika (Fida, Ahmed, Al-Balushi, Singh, 2020) je potvrđeno da su tri bitna faktora (kvalitet usluga, zadovoljstvo i lojalnost korisnika) u velikoj meri međusobno povezana, pri čemu usluge visokog kvaliteta podstiču povećanje zadovoljstva i lojalnost korisnika. Rezultati slične studije potvrđuju da sposobnost kompanija da na odgovarajući način implementiraju dimenzije kvaliteta u pružanje usluga povećava zadovoljstvo i lojalnost korisnika (Ismail, Yunan, 2016). Mai i saradnici (Mai, Hai, Cuong, Khoi, 2021) su takođe dokazali da kvalitet usluga ima značajan pozitivan uticaj na zadovoljstvo korisnika, odnosno da je kvalitet usluga prediktor zadovoljstva korisnika, pri čemu je veličina efekta veze između njih značajno velika.

U studiji (Supriyanto, Wiyono, Burhanuddin, 2021) koja je imala za cilj ispitivanje uticaja (1) kvaliteta usluga na lojalnost korisnika; (2) zadovoljstva korisnika na njihovu lojalnost; i (3) kvaliteta usluga i zadovoljstva korisnika na njihovu lojalnost, pokazalo se da kvalitet usluga nije imao značajne efekte na lojalnost, ali zato na zadovoljstvo korisnika jeste. Autori studije su zaključili da usluge visokog kvaliteta podstiču zadovoljstvo korisnika koje za rezultat na kraju ima njihovu lojalnost. Drugim rečima, korisnici koji su zadovoljni kvalitetom usluga neće nužno biti lojalni kompaniji, ali su lojalni korisnici svakako zadovoljni pruženim uslugama.

Ispitivanjem uticaja kvaliteta logističkih usluga na zadovoljstvo korisnika (Li, Souffo, Lucien, Temgoua, Yulong, Yang, 2019) dokazano je da kvalitet usluga ima značajan pozitivan uticaj na zadovoljstvo korisnika, što implicira na njihovu direktnu povezanost. Nalazi su u skladu sa rezultatima istraživanja koje su sproveli Kilibarda i Andrejić (Kilibarda, Andrejić, 2012) po kojima kvalitet logističkih usluga ima značajnu vezu sa zadovoljstvom korisnika. Slično njima, Politis i saradnici (Politis, Politis, Binioris, 2014) ukazuju na značajan odnos između logistike, kvaliteta usluga i kritičnih akcija korisnika, odnosno da usluge visokog kvaliteta povećanjem nivoa zadovoljstva podstiču zadržavanje korisnika (Nugroho, Kempa, Panjaitan, 2020). Zadovoljni korisnici neće oklevati da ponovo koriste usluge kompanije.

U identifikovanju uticaja dimenzija kvaliteta usluga (odgovornost, sigurnost, pouzdanost, empatija i opipljivi elementi) na zadovoljstvo korisnika, rezultati dosadašnjih istraživanja pokazuju različite rezultate. U određenom broju studija je dokazano da empatija ostvaruje najveći uticaj na zadovoljstvo korisnika (Vencataya, Pudaruth, Juwaheer, Dirpal, Sumodhee, 2019; Nguyen, Thi, Thi, Huynh, Truong, Nguyen, 2019; Slack, Singh, Sharma, 2020) što je u skladu sa njihovom psihologijom kada se odlučuju da izvrše transakciju.

Arslan i saradnici (Arslan, Iftikhar, Zaman, 2014) su recimo dokazali da osim empatije i pouzdanost u najvećoj meri utiče na zadovoljstvo korisnika. Drugi pak vide empatiju, opipljive elemente i sigurnost kao značajne činioce zadovoljstva korisnika (Budiarta, Fachira, 2017; Eresia-Eke, Pretorius, Korkie, Pretorius, 2020), odnosno empatiju, opipljive elemente i pouzdanost (Dharmadasa, Gunawardane, 2017).

Metodologija istraživanja

Za ispitivanje odnosa između kvaliteta logističkih usluga i zadovoljstva njenih korisnika, u radu su postavljene sledeće hipoteze:

H1. Postoji značajna pozitivna korelacija između kvaliteta logističkih usluga i zadovoljstva njenih korisnika.

H2. Kvalitet logističkih usluga je značajan prediktor zadovoljstva korisnika.

H3. Empatija, opipljivi elementi i pouzdanost kao dimenzije kvaliteta usluga ostvaruju najveći uticaj na zadovoljstvo korisnika.

Za potrebe sprovođenja empirijskog istraživanja o stepenu zadovoljstva korisnika kvalitetom logističkih usluga korišćen je metod ispitivanja. Podaci koji su analizirani u radu, prikupljeni su uz pomoć anketnog upitnika. Anketni upitnik obuhvata 19 pitanja koja su podeljena na dva dela. Prvi deo upitnika obuhvata 3 pitanja koja se odnose na osnovne socio-demografske karakteristike ispitanika (pol, starost, nivo obrazovanja). U drugom delu upitnika su postavljena pitanja o percipiranom kvalitetu usluga koji je meren pomoću pet indikatora: odgovornost, pouzdanost, sigurnost, empatija i opipljivi elementi u skladu sa SERVPERF modelom kvaliteta usluga (Cronin, Taylor, 1992). Takođe je u ovom delu upitnika ispitanicima postavljeno pitanje o stepenu zadovoljstva kvalitetom logističkih usluga. Na pitanje o stepenu zadovoljstva ispitanici su davali odgovore uz pomoć Likertove petostepene merne skale (1 = U potpunosti sam nezadovoljan, 5 = U potpunosti sam zadovoljan).

Ispitivanje je obavljeno putem interneta, slanjem upitnika na mejl adrese 260 korisnika koji su poslednjih godina koristili usluge špediterskih preduzeća iz Srbije. Istraživač je ispitanicima u pisanoj formi objasnio cilj i svrhu istraživanja i dao instrukcije o načinu popunjavanja upitnika. 234 popunjena upitnika je prosleđeno istraživaču uz obezbeđenje anonimnosti ispitanika koji su učestvovali u istraživanju. Ispitivanje je sprovedeno u periodu od 11 – 30. oktobra 2021. godine.

Rezultati istraživanja i diskusija

U istraživanju stepena zadovoljstva kvalitetom logističkih usluga učestvovalo je značajno više žena nego muškaraca (73,1% žene i 26,9% muškarac). U pogledu starosne strukture od ukupnog broja ispitanika koji su popunili anketu 70,9% ispitanika je starosti od 30 do 45 godina života, zatim slede ispitanici sa preko 45 godina života (23,5%) i na kraju ispitanici mlađi od 30 godina kojih u uzorku ima svega 13, što predstavlja 5,6% od ukupnog broja. Kada je reč o nivou obrazovanja, nešto manje od polovine ispitanika ima završenu srednju školu (40,6%), 45,7% čine ispitanici sa završenim fakultetom, dok 13,7% ispitanika ima završenu višu školu (Tabela 1).

Tabela 1. Socio-demografske karakteristike ispitanika (n=234)

Karakteristike	Apsolutne frekvencije	Procenat (%)
Pol		
ženski	171	73,1
muški	63	26,9
Godine starosti		
< 30	13	5,6
30 - 45	166	70,9
> 45	55	23,5
Nivo obrazovanja		
Srednje obrazovanje	95	40,6
Više obrazovanje	32	13,7
Visoko obrazovanje	107	45,7
Ukupno	234	100,0

Napomena: Proračun autora na bazi analize podataka u SPSS 23.00.

Kako bi se testirala tačnost hipoteze H1 koja pretpostavlja značajnu pozitivnu korelaciju između kvaliteta logističkih usluga i zadovoljstva korisnika, primenjen je standardna regresiona analiza na celokupnom uzorku (Tabela 2). U skladu sa vrednostima Pirsonove korelacije primećujemo da su varijable kvaliteta logističkih usluga i zadovoljstva korisnika u statistički veoma značajnoj pozitivnoj korelaciji (r = 0,591, sig. =,000). Drugim rečima, povećanje kvaliteta dovodi do povećanja stepena zadovoljstva korisnika isporučenom logističkom uslugom, čime se hipoteza H1 u potpunosti potvrđuje.

Takođe, dobijeni rezultati na celokupnom uzorku pokazuju da je kvalitet usluga značajan prediktor zadovoljstva korisnika (ANOVA sig. =,000, p < 0,0005) koji objašnjava 59,1 procenata varijanse zadovoljstva korisnika. Kvalitet logističkih usluga u velikoj meri doprinosi objašnjavanju zadovoljstva korisnika na celokupnom uzorku (beta =,591, p =,000), odnosno pruža jedinstven i statistički značajan doprinos predikciji rezultata merenja zadovoljstva korisnika.

Tabela 2: Rezultati standardne regresione analize: Odnos između kvaliteta logističkih usluga i zadovoljstva korisnika

Deskriptivna statistika				
		Vrednost	**Standardna odstupanja**	**N**
Zadovoljstvo korisnika		3,92	,527	234
Kvalitet logističkih usluga		3,37	,516	234
Korelacije				
			Zadovoljstvo korisnika	**Kvalitet logističkih usluga**
Zadovoljstvo korisnika	Pearson Correlation		1	,591**
	Sig. (dvostrano)			,000
	N		234	234

Kvalitet logističkih usluga	Pearson Correlation	,591**	1
	Sig. (dvostrano)	,000	
	N	234	234

**. Korelacija je značajna na nivou od 0,01 (dvostrano).

Promenljive unete/uklonjene[a]

Model	Promenljive unete	Promenljive su uklonjene	Metod
1	Kvalitet logističkih usluga[b]	.	Uneto

a. Zavisna promenjiva: Zadovoljstvo korisnika

b. Sve tražene varijable su unete.

Rezime modela[b]

Model	R	R kvadrat	Korigovano R kvadrat	Std. Greška u proceni
1	,591[a]	,349	,347	,417

a. Prediktori: (Constant), Kvalitet logističkih usluga

b. Zavisna promenjiva: Zadovoljstvo korisnika

ANOVA[a]

Model		Suma kvadrata	df	Vrednost kvadrata	F	Sig.
1	Regression	21,674	1	21,674	124,586	,000[b]
	Residual	40,361	232	,174		
	Ukupno	62,035	233			

a. Zavisna promenjiva: Zadovoljstvo korisnika

b. Prediktori: (Constant), Kvalitet logističkih usluga

Koeficijenti[a]

Model		Nestandardizovani koeficijenti		Standardizovani koeficijenti	t	Nivo značajnosti	Korelacije		
		B	Standardna greška	Beta			Nulti red	Delimično	Deo
1	(Constant)	1,100	,205		5,354	,000			
	Zadovoljstvo korisnika	,579	,052	,591	11,162	,000	,591	,591	,591

a. Zavisna promenjiva: Zadovoljstvo korisnika

Napomena: Proračun autora na bazi analize podataka u SPSS 23.00.

Za ispitivanje tačnosti hipoteze H2 koja pretpostavlja da kvalitet logističkih usluga može da predvidi značajan deo varijanse u zadovoljstvu korisnika (uklanjanjem uticaja socio-demografskih varijabli) primenjena je tehnika hijerarhijske višestruke regresije (*Tabela 3*.) U prvom koraku su unete promenjive pol, starost i obrazovanje, što je objasnilo 9% varijanse zadovoljstva korisnika ($r^2 = 0,091$). Nakon unošenja skale kvaliteta logističkih usluga u drugom koraku, modelom kao celinom objašnjeno je 60,5% ukupne varijanse ($r^2 = 0,605$, $F (5, 234) = 33,116$, $p < 0,000$. Kvalitet logističkih usluga je objasnio dodatnih 35,5% varijanse u zadovoljstvu korisnika, nakon što su uklonjeni uticaji pola, starosti i obrazovanja; r^2 se promenilo za = 0,355, F se promenilo za $(2, 234) = 166,87$, $p < 0,000$. U konačnom modelu, kvalitet

logističkih usluga je statistički bio značajno merilo zadovoljstva korisnika (beta = 0,613, p < 0,000).

U skladu sa dobijenim rezultatima, može se zaključiti da logističke usluge visokog kvaliteta u značajnoj meri doprinose zadovoljstvu korisnika, čime se u potpunosti potvrđuje hipoteza H2.

Tabela 3. Rezultati standardne višestruke regresije: Kvalitet usluga kao značajan prediktor zadovoljstva korisnika nakon uklanjanja uticaja demografskih varijabli

Korelacije						
		Zadovoljstvo korisnika	**Starost**	**Pol**	**Obrazovanje**	**Kvalitet logističkih usluga**
Pirsonova korelacija	Zadovoljstvo korisnika	1,000	,084	,016	,034	,591
	Starost	,084	1,000	,108	-,020	,024
	Pol	,016	,108	1,000	,371	,191
	Obrazovanje	,034	-,020	,371	1,000	,168
	Kvalitet logističkih usluga	,591	,024	,191	,168	1,000
Nivo značajnosti	Zadovoljstvo korisnika	.	,101	,407	,300	,000
	Starost	,101	.	,050	,383	,356
	Pol	,407	,050	.	,000	,002
	Obrazovanje	,300	,383	,000	.	,005
	Kvalitet logističkih usluga	,000	,356	,002	,005	.

Promenljive unete/uklonjene[a]			
Model	**Promenljive unete**	**Promenljive su uklonjene**	**Metod**
1	Obrazovanje, Starost, Pol[b]	.	Uneto
2	Kvalitet logističkih usluga[b]	.	Uneto
a. Zavisna promenljiva: Zadovoljstvo korisnika			
b. Sve tražene varijable su unete.			

Pregled modela[c]				
Model	**R**	**R kvadrat**	**Korigovano R kvadrat**	**Standardna greška u proceni**
1	,091[a]	,008	-,005	,528
2	,605[b]	,366	,355	,423
a. Prediktori: (Konstant), Obrazovanje, Starost, Pol				
b. Prediktori: (Konstanta), Obrazovanje, Starost, Pol, Kvalitet logističkih usluga				
c. Zavisna promenljiva: Zadovoljstvo korisnika				

ANOVA[a]						
Model		**Suma kvadrata**	**df**	**Srednja vrednost kvadrata**	**F statistika**	**Nivo značajnosti**
1	Regresija	,540	3	,180	,646	,586[b]
	Rezidual	64,075	230	,279		
	Ukupno	64,615	233			
2	Regresija	23,680	4	5,920	33,116	,000[c]

	Rezidual	40,936	229	,179		
	Ukupno	64,615	233			
a. Zavisna promenjiva: Zadovoljstvo korisnika						
b. Prediktori: (Constant), Obrazovanje, Starost, Pol						
c. Prediktori: (Constant), Obrazovanje, Starost, Pol, Kvalitet logističkih usluga						

Koeficijenti[a]

Model		Nestandardizovani koeficijenti		Standardizovani koeficijenti	t	Nivo značajnosti	Korelacije		
		B	Standardna greška	Beta koeficijent			Nulti red	Delimično	Deo
1	(Constant)	3,698	,181		20,45	,000			
	Starost	,088	,068	,085	1,28	,199	,084	,085	,085
	Pol	-,010	,084	-,008	-,11	,908	,016	-,008	-,008
	Obrazovanje	,022	,040	,039	,55	,582	,034	,036	,036
2	(Constant)	1,819	,220		8,28	,000			
	Starost	,082	,055	,079	1,48	,138	,084	,098	,078
	Pol	-,117	,068	-,099	-1,71	,087	,016	-,113	-,090
	Obrazovanje	-,017	,032	-,030	-,53	,596	,034	-,035	-,028
	Kvalitet logističkih usluga	,626	,055	, 613	11,37	,000	,591	,601	,598

a. Zavisna promenjiva: Zadovoljstvo korisnika

Napomena: Proračun autora na bazi analize podataka u SPSS 23.00.

U nastavku rada je ispitivan odnos između pet dimenzija kvaliteta logističkih usluga (Odgovornost, Pouzdanost, Sigurnost, Empatija i Opipljivi elementi) i zadovoljstva korisnika. Za analizu je primenjena standardna regresiona analiza na celokupnom uzorku (*Tabela 3*). U skladu sa vrednostima Pirsonovog koeficijenta korelacije uočavamo da je samo promenjiva odgovornosti u statistički jako značajnoj pozitivnoj korelaciji sa zadovoljstvom korisnika (r = 0,511, sig. =,000). Ostale dimenzije kvaliteta logističkih usluga pokazuju srednje značajnu, odnosno malo značajnu pozitivnu korelaciju sa zadovoljstvom korisnika. Drugim rečima, iako su sve dimenzije kvaliteta logističkih usluga u pozitivnoj korelaciji sa zadovoljstvom korisnika, jedino odgovornost zaposlenih u logističkoj organizaciji u značajnoj meri doprinosi porastu stepena zadovoljstva korisnika isporučenom uslugom.

Takođe, dobijeni rezultati na celokupnom uzorku pokazuju da je odgovornost u odnosu na ostale dimenzije kvaliteta logističkih usluga značajan prediktor zadovoljstva korisnika (ANOVA sig. =,000, p < 0,0005) koji objašnjava 35,7 procenata varijanse zadovoljstva korisnika. Odgovornost kao dimenzija kvaliteta logističkih usluga u velikoj meri doprinosi objašnjavanju zadovoljstva korisnika na celokupnom uzorku (beta =,357, p =,000), odnosno pruža jedinstven i statistički značajan doprinos predikciji rezultata merenja

zadovoljstva korisnika, čime se postavljena hipoteza H3 u potpunosti odbacuje.

Tabela 4. Rezultati standardne višestruke regresije: Stepen zadovoljstva korisnika kvalitetom logističkih usluga

Korelacije							
		Zadovoljstvo korisnika	**Odgovornost**	**Pouzdanost**	**Sigurnost**	**Empatija**	**Opipljivi elementi**
Pirsonova korelacija	Zadovoljstvo korisnika	1,000	,511	,438	,399	,351	,418
	Odgovornost	,511	1,000	,601	,436	,218	,284
	Pouzdanost	,438	,601	1,000	,694	,386	,338
	Sigurnost	,399	,436	,694	1,000	,391	,325
	Empatija	,351	,218	,386	,391	1,000	,173
	Opipljivi elementi	,418	,284	,338	,325	,173	1,000
Nivo značajnosti	Zadovoljstvo korisnika		,000	,000	,000	,000	,000
	Odgovornost	,000	.	,000	,000	,000	,000
	Pouzdanost	,000	,000	.	,000	,000	,000
	Sigurnost	,000	,000	,000	.	,000	,000
	Empatija	,000	,000	,000	,000	.	,004
	Opipljivi elementi	,000	,000	,000	,000	,004	.

ANOVA[a]						
Model		**Zbir kvadrata**	**df**	**Srednja vrednost kvadrata**	**F statistika**	**Nivo značajnosti**
1	Regresija	25,351	5	5,070	29,441	,000[b]
	Rezidual	39,265	228	,172		
	Ukupno	64,615	233			
a. Zavisna promenjiva: Zadovoljstvo korisnika						
b. Prediktori: (Constant), Opipljivi elementi, Empatija, Odgovornost, Sigurnost, Pouzdanost						

Koeficijenti[a]

Model		**Nestandardizovani koeficijenti**		**Standardizovani koeficijenti**	**t**	**Sig.**	**Korelacije**		
		B	**Standardna greška**	**Beta**				**B**	**Standardna greška**
1	(Constant)	1,612	,196		8,226	,000			
	Odgovornost	,316	,058	,357	5,488	,000	,511	,342	,283
	Pouzdanost	,005	,060	,007	,085	,933	,438	,006	,004
	Sigurnost	,060	,056	,080	1,081	,281	,399	,071	,056
	Empatija	,123	,036	,195	3,431	,001	,351	,222	,177
	Opipljivi elementi	,169	,037	,255	4,582	,000	,418	,290	,237

a. Zavisna promenjiva: Zadovoljstvo korisnika

Napomena: Proračun autora na bazi analize podataka u SPSS 23.00.

Zaključak

Rezultati sprovedenog istraživanja potvrđuju značajnu pozitivnu korelaciju između kvaliteta logističkih usluga i zadovoljstva korisnika, što pretpostavlja da visok kvalitet logističkih usluga ima za rezultat zadovoljne korisnike. Rezultati takođe pokazuju da je kvalitet usluga značajan prediktor koji objašnjava 59,1 procenat varijanse zadovoljstva korisnika, odnosno 60,5% nakon uklanjanja uticaja socio-demografskih varijabli. Kvalitet logističkih usluga se zbog toga može identifikovati kao značajan prediktor zadovoljstva korisnika u Srbiji.

Pokazalo se takođe da među dimenzijama kvaliteta logističkih usluga najveći uticaj na zadovoljstvo korisnika ostvaruje jedino odgovornost (spremnost provajdera da pomogne i pruži brzu uslugu), uprkos pretpostavci da to čine empatija, opipljivi elementi i pouzdanost. Pouzdanost i opipljivi elementi pokazuju srednje značajnu, dok sigurnost i empatija manje značajnu pozitivnu korelaciju sa zadovoljstvom korisnika. Iako su sve dimenzije kvaliteta logističkih usluga u pozitivnoj korelaciji sa zadovoljstvom korisnika, jedino odgovornost zaposlenih u logističkoj kompaniji može povećati zadovoljstvo korisnika isporučenom uslugom. Takođe, dobijeni rezultati pokazuju da je odgovornost u odnosu na ostale dimenzije kvaliteta logističkih usluga značajan prediktor zadovoljstva korisnika koji objašnjava 35,7 procenata varijanse zadovoljstva korisnika.

U skladu sa dobijenim rezultatima može se zaključiti da usluge visokog kvaliteta igraju ključnu ulogu u povećanju zadovoljstva korisnika što zauzvrat doprinosi većem tržišnom udelu i profitabilnosti logističkih kompanija. Za ostvarivanje konkurentske prednosti neophodno je da se kompanije fokusiraju na razvoj i pobošljanje kvaliteta svojih usluga što se u slučaju srpske logističke prakse može ostvariti kroz odgovornost zaposlenih odnosno spremnost da pomognu i pruže uslugu brzo.

Literatura

1. Arslan, M., M. Iftikhar, and R. Zaman. 2014. Effect of service quality dimensions on customer satisfaction: A comparative analysis of Pakistan Telecom sector. Revista de Management Comparat International, 15(4): 440.
2. Budiarta, I. S., I. Fachira. 2017. Customer Loyalty: The effects of Service Quality and the Mediating Role of Customer Satisfaction, Study Case: PT Sabda Alam Hotel. Journal of business and management, 6/2: 250-261.

3. Caceres, R. C., N. G. Paparoidamis. 2007. Service quality, relationship satisfaction, trust, commitment and business-to-business loyalty. European journal of marketing, 41(7/8): 836-867.
4. Chapman, R., L., C. Soosay, and J. Kandampully. 2003. Innovation in logistics services and the new business model: a conceptual framework. International Journal of Physical Distribution and Logistics Management, 33 (7): 630–650.
5. Chen, K., C. Chang, and C. Lai. 2009. Service quality gaps of business customers in the shipping industry. Transportation Research Part E, 45: 222–237.
6. Cronin, J. J., S. A. Taylor. 1992. Measuring service quality; a re-examination and Extension. The Journal of Marketing, 56(3): 55-68.
7. Dabholkar, P. A. (1995). A contingency framework for predicting causality between customer satisfaction and service quality. ACR North American Advances.
8. Dharmadasa, S. A., N. Gunawardane. 2017. Impact of Service Quality on Customer Satisfaction with Special Reference to Mobile Telecommunication Industry of Sri Lanka, 3(1): 26-58.
9. Eresia-Eke, C. E., E. M. Pretorius, L. H. Korkie, and M. Pretorius. 2020. Subliminal contributions of service quality dimensions to customer satisfaction in food delivery businesses. African Journal of Hospitality, Tourism and Leisure, 9(4): 655-668.
10. Fida, B. A., Ahmed, U., Al-Balushi, Y., Singh, D. (2020). Impact of service quality on customer loyalty and customer satisfaction in islamic banks in the Sultanate of Oman. *Sage Open*, 10(2).
11. Gorla, N., T. M. Somers, and B. Wong. 2010. Organizational impact of system quality, information quality, and service quality. The Journal of Strategic Information Systems, 19(3): 207-228.
12. Hoang, D. T., B. Igel, T. Laosirihongthong. 2010. Total quality management (TQM) strategy and organisational characteristics: Evidence from a recent WTO member. Total quality management, 21(9): 931-951.
13. Huang, B., T. Wang, and X. Xue. 2012. Service-selecting approach based on domain-specified 'Quality of Service' model and its application in logistics. The Service Industries Journal, 32 (9):1571–1588.
14. Huang, Ch., J., and K. P. Huang. 2012. The logistics capabilities scale for logistics service providers. Journal of Information and Optimization Sciences, 33 (1):135-148.
15. Huang, T. C. K. 2012. Mining the change of customer behavior in fuzzy time-interval sequential patterns. Applied Soft Computing, 12(3): 1068-1086.

16. Ismail, A., Y. M. Yunan. 2016. Service quality as a predictor of customer satisfaction and customer loyalty. LogForum, 12(4): 269-283.
17. Jayawardhena, C. 2010. The impact of service encounter quality in service evaluation: evidence from a business-to-business context. Journal of Business & Industrial Marketing, 25(5): 338-348.
18. Kilibarda, M., and M. Andrejić. 2012. Logistics Service Quality Impact on Customer Satisfaction and Loyalty. Conference: 2nd Olympus International Conference on Supply Chains (ICSC 2012) At: Katerini, Greece.
19. Kilibarda, M., S. Zečević, M. Vidović. 2012. Measuring the quality of logistic service as an element of the logistics provider offering. Total Quality Management & Business Excellence, 23 (11-12): 1345–1361.
20. Li, M., C. D. Souffo, A. K. Lucien, D. F. Temgoua, J. Yulong, Y. Yang. 2019. Impact of logistics service quality on customer satisfaction: evidence from cameroon. International Journal of Economics, Commerce and Management, VII (11): 333-351.
21. Liu, W. H., D. Xie. 2013. Quality decision of the logistics service supply chain with service quality guarantee. International Journal of Production Research, 51(5): 1618-1634.
22. Mai, D. S., P. H. Hai, D. T. Cuong, B. H. Khoi. 2021. PLS-SEM algorithm for the decision to purchase durian milk with seeds. In Journal of Physics: Conference Series, 1860(1): 012013.
23. McDougall, G. H., T. Levesque. 2000. Customer satisfaction with services: putting perceived value into the equation. Journal of services marketing, 14(5), 392-410.
24. Meidutė, I., M. Litvinenko, and A. Aranskis. 2012. Logistics cooperation: integrated logistics services. Business: Theory and Practice, 13(4): 343-351.
25. Negi, R. 2009. Determining customer satisfaction through perceived service quality: A study of Ethiopian mobile users, International Journal of Mobile Marketing, 4(1): 31-38.
26. Nguyen, T. L. H., K. Nagase. 2019. The influence of total quality management on customer satisfaction. International journal of healthcare management, 12(4): 277-285.
27. Nugroho, S., S. Kempa, W. S. T. Panjaitan. 2020. Logistic Service Quality and Customer Satisfaction to Customer Retention on Rice Producer Industry, SHS Web of Conferences, 76.
28. Parasuraman, A., V. A. Zeithaml, and L. L. Berry. 1994. Reassessment of expectations as a comparison standard in measuring service quality: implications for further research. Journal of marketing, 58(1): 111-124.

29. Politis, Y., G. Politis, and S. Binioris. 2014. Logistics service quality and its effects on customer satisfaction in the manufacturing companies' supply chains empirical evidence from Greece. Journal of Modelling in Management, 9(2): 215–237.
30. Rust, R. T., R. L. Oliver. 1994. Service Quality: Insights and Managerial Implications from the Frontier. In: Rust, R.T. and Oliver, R.L., Eds., Service Quality: New Directions in Theory and Practice, Sage Publications, Thousand Oaks, 1-19.
31. Shemwell, D. J., U. Yavas, and Z. Bilgin. 1998. Customer-service provider relationships: an empirical test of a model of service quality, satisfaction and relationship-oriented outcomes. International journal of service industry management, 9(2): 155-168.
32. Slack, N. J., G. Singh, and S. Sharma. 2020. The effect of supermarket service quality dimensions and customer satisfaction on customer loyalty and disloyalty dimensions. International Journal of Quality and Service Sciences, 12 (3): 297-318.
33. Supriyanto, A., B. B. Wiyono, and B. Burhanuddin. 2021. Effects of service quality and customer satisfaction on loyalty of bank customers. Cogent Business & Management, 8(1): 19 -37.
34. Sureshchandar, G. S. 2021. Quality 4.0–a measurement model using the confirmatory factor analysis (CFA) approach. International Journal of Quality & Reliability Management. Vol. ahead-of-print No. ahead-of-print.
35. Thirunavukkarasu, A., V. R. Nedunchezian. 2019. Relationship between service quality and customer satisfaction in airlines industry. Academy of Marketing Studies Journal, 23(4): 1-12.
36. Vencataya, L., S. Pudaruth, R. Juwaheer, G. Dirpal, and N. Sumodhee. 2019. Assessing the impact of service quality dimensions on customer satisfaction in commercial banks of mauritius. Studies in Business and Economics, 14(1): 259-270.
37. Wirtz, J. 2001. Improving the Measurement of Customer Satisfaction: A Test of Three Methods to Reduce Halo. Managing Service Quality, 11 (2): 99-111.
38. Woodall, T. 2001. Six Sigma and Service Quality: Christiam Gronroos Revisited. Journal of Marketing Management, 17: 595–60.
39. Yee, R. W., A. C. Yeung, and T. C. E. Cheng. 2011. The service-profit chain: An empirical analysis in high-contact service industries. International Journal of Production Economics, 130(2): 236-245.
40. Zairi, M. 2000. Managing customer satisfaction: a best practice perspective. The TQM Magazine, 12(6): 389–394.

41. Zeithaml, V., A., L. L. Berry, and A. Parasuraman. 1993. The nature and determinants of customer expectations of service. Journal of the Academy of Marketing Science, 21(1):1–12.

Datum prijema (Date received): 21.03.2022.
Datum prihvatanja (Date accepted): 07.06.2022

THE INFLUENCE OF THE QUALITY OF LOGISTICS SERVICES ON USER SATISFACTION IN SERBIA

Miloš Dašić[30]

Original scientific paper

Abstract

The research was created as an attempt to discover the role of service quality in user satisfaction with the aim of a faster and more efficient response of logistics companies to their changing needs. In particular, before the research, the question was asked whether it is possible to predict their satisfaction on the basis of users' attitudes regarding the perceived quality of logistics services. In the research, a convenient sample of 234 respondents was used, which included users who used the services of freight forwarding companies from Serbia in recent years. The regression analysis technique was used to process the collected responses of respondents. The research results confirm a significant positive correlation between the quality of logistics services and customer satisfaction. The quality of logistics services is identified as a significant predictor of user satisfaction in Serbia. It was also shown that the greatest impact on user satisfaction is achieved by responsibility as an indicator of service quality according to the SERVPERF model. Other characteristics of service quality - reliability and tangible elements show medium, while security and empathy show less significant positive correlation with user satisfaction.

Key words: *quality of logistics services, SERVPERF model, user satisfaction, determinants of quality of logistics services*

JEL: *L15, L80.*

Introduction

In conditions of constant growth of competition in the service sector, the ability of companies to understand their customers and ensure their satisfaction is becoming more and more important. Most scientists emphasize in their works that the user is the most important part of the business of any

[30]Skills teacher, Miloš Dašić, Academy of Vocational Studies South Serbia, Department of Business School Blace, Serbia, Kralja Petra I/70, Phone: +381 37 371377, E-mail: dasicmil@yahoo.com

service sector (Meidutė, Litvinenko, Aranskis, 2012; Kilibarda, Zečević, Vidović, 2012; Huang, Huang, 2012). It is important to keep in mind that the activity of the service sector is oriented precisely to users and that the results of service companies directly depend on the choice of users. Considering this, it is safe to say that one of the most important guarantors of the current success of the logistics business is the quality of the services provided, especially when it is known that the service is an intangible act or process (Chen, Chang, Lai, 2009; Huang, Wang, Xue, 2012) and therefore closely related to the satisfaction of user needs. According to the views of a number of authors (Zeithaml, Berry, Parasuraman, 1993; Woodall, 2001; Chapman, Soosay, Kandampully, 2003; Gorla, Somers, Wong, 2010), the manifestation of expectations depends on how users perceive and interpret environmental factors that influence their formation. Some factors the company can control, predict and be prepared for, but others depend to a greater extent on the user (psychological, cultural, social), which is why logistics companies face a huge challenge to understand their users, find out their needs and strive to fulfill them. their expectations.

Service quality and user satisfaction associated with it are two very closely related and sometimes even identical concepts. User satisfaction is a key factor in assessing the quality of services. Certain authors (Caceres, Paparoidamis, 2007; Gorla, Somers, Wong, 2010) claim that service quality is a precursor to user satisfaction, which is why it can be assumed that a high-quality service leads to satisfaction. However, there is no doubt that both of these constructs are generally recognized as the main determining factors in maintaining long-term and successful business relationships (Jayawardhena, 2010; Hoang, Igel, Laosirihongthong, 2010).

The quality of logistics services and customer satisfaction are particularly important in the current business environment, as the relationship between the service provider and the customer is usually long-term (or at least tries to be). Therefore, one of the most important elements in the service market refers to the development of interaction with users (Caceres, Paparoidamis, 2007), which is achieved by delivering services whose quality exceeds expectations and leads to an appropriate level of satisfaction. Wirtz (2001) also emphasizes that customer satisfaction is becoming a key element for companies in their efforts to promote repeat business relationships and increase long-term profitability. Other authors agree that in the current competitive environment, it is dangerous to be an organization that is not customer-oriented (Liu, Xie, 2013). Most organizations are competitive, but in order to survive in the market, it is necessary to provide high quality services in order to make existing and future users satisfied and loyal.

This paper focuses on examining the predictive role of logistics service quality in user satisfaction in Serbia. The aim of this work is to determine to what extent users' perceptions regarding the quality of logistics services affect their level of satisfaction.

Literature review

From the wide range of literature on service quality and user satisfaction, it can be concluded that these are conceptually different but closely related constructs (Parasuraman, Zeithaml, Berry, 1994; Dabholkar, 1995; Shemwell, Yavas, Bilgin, 1998). For example, Rust and Oliver (Rust, Oliver, 1994, p. 73) explained that "overall customer satisfaction with the service provider and perceived service quality are undoubtedly interrelated and in many cases highly correlated." At the same time, numerous studies have offered evidence supporting a positive relationship between customer satisfaction and service quality (Yee, Yeung, Cheng, 2011), despite discussions on their causal relationship in the sense that service quality leads to satisfaction (McDougall, Levesque, 2000; Negi, 2009), that is, user satisfaction contributes to service quality (Cronin, Taylor, 1992). Stated differently, both constructs are independent but closely related, implying that an increase in one is likely to lead to an increase in the other (Sureshchandar, Rajendran, Anantharaman, 2002).

The results of numerous researches confirm the previously stated thesis. In research on the impact of service quality on customer satisfaction and loyalty (Fida, Ahmed, Al-Balushi, Singh, 2020) it was confirmed that three important factors (service quality, customer satisfaction and loyalty) are largely interrelated, whereby high quality services encourage increased user satisfaction and loyalty. The results of a similar study confirm that the ability of companies to appropriately implement quality dimensions in service provision increases customer satisfaction and loyalty (Ismail, Yunan, 2016). Mai et al. (Mai, Hai, Cuong, Khoi, 2021) also proved that service quality has a significant positive impact on customer satisfaction, that is, that service quality is a predictor of customer satisfaction, with the effect size of the relationship between them being significantly large.

In a study (Supriyanto, Wiyono, Burhanuddin, 2021) that aimed to examine the impact of (1) service quality on customer loyalty; (2) user satisfaction on their loyalty; and (3) service quality and customer satisfaction on their loyalty, it was shown that service quality did not have significant effects on loyalty, but it did on customer satisfaction. The authors of the study concluded that high-quality services encourage customer satisfaction, which ultimately results

in their loyalty. In other words, users who are satisfied with the quality of services will not necessarily be loyal to the company, but loyal users are certainly satisfied with the services provided.

Examining the impact of the quality of logistics services on user satisfaction (Li, Souffo, Lucien, Temgoua, Yulong, Yang, 2019) proved that the quality of services has a significant positive impact on user satisfaction, which implies their direct connection. The findings are consistent with the results of the research conducted by Kilibarda and Andrejić (Kilibarda, Andrejić, 2012), according to which the quality of logistics services has a significant relationship with user satisfaction. Similar to them, Politis et al. (Politis, Politis, Binioris, 2014) indicate a significant relationship between logistics, service quality and critical user actions, i.e. that high-quality services by increasing the level of satisfaction encourage user retention (Nugroho, Kempa, Panjaitan, 2020). Satisfied users will not hesitate to use the company's services again.

In identifying the impact of service quality dimensions (responsibility, security, reliability, empathy and tangible elements) on user satisfaction, the results of previous research show different results. In a number of studies, it has been proven that empathy has the greatest impact on user satisfaction (Vencataya, Pudaruth, Juwaheer, Dirpal, Sumodhee, 2019; Nguyen, Thi, Thi, Huynh, Truong, Nguyen, 2019; Slack, Singh, Sharma, 2020) which is in line with their psychology when they decide to make a transaction.

Arslan et al. (Arslan, Iftikhar, Zaman, 2014) proved, for example, that apart from empathy, reliability has the greatest influence on user satisfaction. Others see empathy, tangible elements and security as significant factors of user satisfaction (Budiarta, Fachira, 2017; Eresia-Eke, Pretorius, Korkie, Pretorius, 2020), i.e. empathy, tangible elements and reliability (Dharmadasa, Gunawardane, 2017).

Research methodology

In order to examine the relationship between the quality of logistics services and the satisfaction of its users, the following hypotheses were put forward in the paper:

H1. There is a significant positive correlation between the quality of logistics services and the satisfaction of its users.

H2. The quality of logistics services is a significant predictor of customer satisfaction.

H3. Empathy, tangible elements and reliability as dimensions of service quality have the greatest impact on user satisfaction.

For the purposes of conducting empirical research on the level of user satisfaction with the quality of logistics services, a survey method was used. The data analyzed in the paper were collected with the help of survey questionnaire. The survey questionnaire includes 19 questions that are divided into two parts. The first part of the questionnaire includes 3 questions related to the basic socio-demographic characteristics of the respondents (gender, age, level of education). In the second part of the questionnaire, questions were asked about perceived service quality, which was measured using five indicators: responsibility, reliability, security, empathy and tangible elements in accordance with the SERVPERF model of service quality (Cronin, Taylor, 1992). Also, in this part of the questionnaire, respondents were asked a question about the level of satisfaction with the quality of logistics services. To the question about the degree of satisfaction, the respondents gave answers with the help of Five-point Likert scale (1 = I am completely dissatisfied, 5 = I am completely satisfied).

The survey was conducted via the Internet, by sending a questionnaire to the e-mail addresses of 260 users who used the services of freight forwarding companies from Serbia in recent years. The researcher explained the goal and purpose of the research to the respondents in writing and gave instructions on how to fill out the questionnaire. 234 completed questionnaires were forwarded to the researcher while ensuring the anonymity of the respondents who participated in the research. The survey was conducted in the period from October 11 to 30, 2021.

Research results and discussions

Significantly more women than men participated in the survey on the level of satisfaction with the quality of logistics services (73.1% women and 26.9% men). Regarding the age structure of the total number of respondents who filled out the survey, 70.9% of the respondents are aged between 30 and 45 years of age, followed by respondents over 45 years of age (23.5%) and finally respondents under 30 years of age, who in there are only 13 in the sample, which represents 5.6% of the total number. When it comes to the level of education, slightly less than half of respondents have completed high school (40.6%), 45.7% are respondents with a university degree, while 13.7% of respondents have completed higher education (*Table 1)*.

Table 3. Socio-demographic characteristics of respondents (n=234)

Characteristics	Absolute frequencies	percentage (%)
Gender		
ladies	171	73.1
male	63	26.9
Age		
< 30	13	5,6
30 - 45	166	70.9
> 45	55	23.5
Level of Education		
High school	95	40.6
Higher education	32	13.7
High education	107	45.7
In total	2 3 4	100.0

Note: Author's calculation based on data analysis in SPSS 23.00.

In order to test the accuracy of hypothesis H1, which assumes a significant positive correlation between the quality of logistics services and customer satisfaction, a standard regression analysis was applied to the entire sample (*Table 2)*. In accordance with the Pearson correlation values, we note that the variables of the quality of logistics services and user satisfaction are in a statistically very significant positive correlation (r = 0.591, sig. =.000). In other words, an increase in quality leads to an increase in the level of user satisfaction with the delivered logistics service, which fully confirms hypothesis H1.

Also, the results obtained on the entire sample show that service quality is a significant predictor of user satisfaction (ANOVA sig. =.000, p < 0.0005) which explains 59.1 percent of the variance of user satisfaction. The quality of logistics services greatly contributes to explaining user satisfaction in the entire sample (beta =.591, p =.000), that is, it provides a unique and statistically significant contribution to the prediction of user satisfaction measurement results.

Table 4: Results of standard regression analysis: Relationship between the quality of logistics services and customer satisfaction

Descriptive statistics				
		Value	**Standard deviations**	**N**
Customer satisfaction		3.92	,527	2 3 4
Quality of logistics services		3.37	,516	2 3 4
Correlations				
			Customer satisfaction	**Quality of logistics services**
Customer satisfaction	Pearson Correlation		1	,591 **
	Sig. (double sided)			,000
	N		2 3 4	2 3 4

Quality of logistics services	Pearson Correlation	,591 **	1
	Sig. (double sided)	,000	
	N	2 3 4	2 3 4

**. The correlation is significant at the 0.01 level (two-tailed).

Variables added/removed [a]

Model	Variables entered	Variables have been removed	Method
1	Quality of logistics services [b]	.	Entered

a. Dependent variable: User satisfaction

b. All required variables have been entered.

Model summary [b]

Model	R	R squared	Adjusted R squared	Std. Error in judgment
1	,591 [a]	,349	,347	,417

a. Predictors: (Constant), Quality of logistics services

b. Dependent variable: User satisfaction

ANOVA [a]

Model		Sum of squares	df	The value of the square	F	Sig.
1	Regression	21,674	1	21,674	124,586	,000 [b]
	Residual	40,361	232	,174		
	In total	62,035	233			

a. Dependent variable: User satisfaction

b. Predictors: (Constant), Quality of logistics services

Coefficients [a]

Model		Unstandardized coefficients		Standardized coefficients	t	Level of significance	Correlations		
		B	Standard error	Beta			Zero order	Partially	A part of
1	(Constant)	1,100	,205		5,354	,000			
	Customer satisfaction	,579	,052	,591	11,162	,000	,591	,591	,591

a. Dependent variable: User satisfaction

Note: Author's calculation based on data analysis in SPSS 23.00.

To test the accuracy of hypothesis H2, which assumes that the quality of logistics services can predict a significant part of the variance in user satisfaction (by removing the influence of socio-demographic variables), the hierarchical multiple regression technique was applied (*Table 3)*. In the first step, the variables gender, age and education were entered, which explained 9% of the variance in user satisfaction ($r^2 = 0.091$). After entering the logistics service quality scale in the second step, the model as a whole explained 60.5% of the total variance ($r^2 = 0.605$, $F(5, 234) = 33.116$, $p < 0.000$. Logistics service quality explained an additional 35.5% variance in customer satisfaction, after the effects of gender, age and education were removed; r^2

changed by = 0.355, F changed by (2, 234) = 166.87, p < 0.000. In the final model, logistics service quality was was a statistically significant measure of user satisfaction (beta = 0.613, p < 0.000).

In accordance with the obtained results, it can be concluded that high-quality logistics services significantly contribute to user satisfaction, which fully confirms hypothesis H2.

Table 3. Standard multiple regression results: Service quality as a significant predictor of customer satisfaction after removing the influence of demographic variables

Correlations						
		Customer satisfaction	**Age**	**Gender**	**Education**	**Quality of logistics services**
Pearson correlation	Customer satisfaction	1,000	,084	,016	,034	,591
	Age	,084	1,000	, 108	-,020	,024
	Gender	,016	, 108	1,000	,371	,191
	Education	,034	-,020	,371	1,000	, 168
	Quality of logistics services	,591	,024	,191	, 168	1,000
Level of significance	Customer satisfaction	.	,101	,407	,300	,000
	Age	,101	.	,050	,383	,356
	Gender	,407	,050	.	,000	,002
	Education	,300	,383	,000	.	,005
	Quality of logistics services	,000	,356	,002	,005	.

Variables added/removed [a]			
Model	**Variables entered**	**Variables have been removed**	**Method**
1	Education, Age, Gender [b]	.	Entered
2	Quality of logistics services [b]	.	Entered
a. Dependent variable: User satisfaction			
b. All required variables have been entered.			

Model overview [c]				
Model	**R**	**R squared**	**Adjusted R squared**	**Standard error of estimate**
1	,091 [a]	,008	-,005	,528
2	,605 [b]	,366	,355	,423
a. Predictors: (Constant), Education, Age, Sex				
b. Predictors: (Constant), Education, Age, Gender, Quality of logistics services				
c. Dependent variable: User satisfaction				

ANOVA [a]						
Model		**Sum of squares**	**df**	**Mean square value**	**F statistics**	**Level of significance**
1	Regression	,540	3	,180	,646	,586 [b]
	Residual	64,075	230	,279		

	In total	64,615	233			
2	Regression	23,680	4	5,920	33,116	,000 [c]
	Residual	40,936	229	,179		
	In total	64,615	233			
a. Dependent variable: User satisfaction						
b. Predictors: (Constant), Education, Age, Sex						
c. Predictors: (Constant), Education, Age, Gender, Quality of logistics services						

Coefficients [a]

Model		Unstandardized coefficients		Standardized coefficients	t	Level of significance	Correlations		
		B	Standard error	Beta coefficient			Zero order	Partially	A part of
1	(Constant)	3,698	, 181		20.45	,000			
	Age	,088	,068	,085	1.28	,199	,084	,085	,085
	Gender	-,010	,084	-,008	-, 11	,908	,016	-,008	-,008
	Education	,022	,040	,039	,55	,582	,034	,036	,036
2	(Constant)	1,819	,220		8.28	,000			
	Age	,082	,055	,079	1.48	,138	,084	,098	,078
	Gender	-,117	,068	-,099	-1.71	,087	,016	-,113	-,090
	Education	-,017	,032	-,030	-,53	,596	,034	-,035	-,028
	Quality of logistics services	,626	,055	, 613	11.37	,000	,591	,601	,598

a. Dependent variable: User satisfaction

Note: Author's calculation based on data analysis in SPSS 23.00.

In the continuation of the paper, the relationship between the five dimensions of the quality of logistics services (Responsibility, Reliability, Security, Empathy and Tangible elements) and user satisfaction was examined. Standard regression analysis was applied to the entire sample (*Table 3)*. In accordance with the values of the Pearson correlation coefficient, we observe that only the responsibility variable has a statistically significant positive correlation with user satisfaction (r = 0.511, sig. =.000). Other dimensions of the quality of logistics services show a moderately significant or slightly significant positive correlation with user satisfaction. In other words, although all dimensions of the quality of logistics services are positively correlated with user satisfaction, only the responsibility of employees in the logistics organization significantly contributes to the increase in the level of user satisfaction with the delivered service.

Also, the results obtained on the entire sample show that responsibility in relation to other dimensions of the quality of logistics services is a significant predictor of user satisfaction (ANOVA sig. =.000, $p < 0.0005$) which explains 35.7 percent of the variance of user satisfaction. Responsibility as a dimension of the quality of logistics services greatly contributes to explaining user

satisfaction in the entire sample (beta =.357, p =.000), that is, it provides a unique and statistically significant contribution to the prediction of user satisfaction measurement results, which completely rejects the hypothesis H3.

Table 4. Results of standard multiple regression: Degree of user satisfaction with the quality of logistics services

Correlations							
		Customer satisfaction	**Responsibility**	**Reliability**	**Security**	**Empathy**	**Tangible elements**
Pearson correlation	Customer satisfaction	1,000	,511	,438	,399	,351	,418
	Responsibility	,511	1,000	,601	,436	,218	,284
	Reliability	,438	,601	1,000	,694	,386	,338
	Security	,399	,436	,694	1,000	,391	,325
	Empathy	,351	,218	,386	,391	1,000	,173
	Tangible elements	,418	,284	,338	,325	,173	1,000
Level of significance	Customer satisfaction		,000	,000	,000	,000	,000
	Responsibility	,000	.	,000	,000	,000	,000
	Reliability	,000	,000	.	,000	,000	,000
	Security	,000	,000	,000	.	,000	,000
	Empathy	,000	,000	,000	,000	.	,004
	Tangible elements	,000	,000	,000	,000	,004	.

ANOVA [a]

Model		**Sum of squares**	**df**	**Mean square value**	**F statistic**	**Level of significance**
1	Regression	25,351	5	5,070	29,441	,000 [b]
	Residual	39,265	228	,172		
	In total	64,615	233			

c. Dependent variable: User satisfaction

d. Predictors: (Constant), Tangible elements, Empathy, Responsibility, Security, Reliability

Coefficients [a]

Model		**Unstandardized coefficients**		**Standardized coefficients**	**t**	**Sig.**	**Correlations**		
		B	**Standard error**	**Beta**				**B**	**Standard error**
1	(Constant)	1,612	,196		8,226	,000			
	Responsibility	,316	,058	,357	5,488	,000	,511	,342	,283
	Reliability	,005	,060	,007	,085	,933	,438	,006	,004
	Security	,060	,056	,080	1,081	,281	,399	,071	,056
	Empathy	,123	,036	, 195	3,431	,001	,351	,222	,177

	Tangible elements	, 169	,037	,255	4,582	,000	,418	,290	,237

a. Dependent variable: User satisfaction

Note: Author's calculation based on data analysis in SPSS 23.00.

Conclusion

The results of the conducted research confirm a significant positive correlation between the quality of logistics services and user satisfaction, which assumes that high quality logistics services result in satisfied users. The results also show that service quality is a significant predictor that explains 59.1 percent of the variance in customer satisfaction, or 60.5% after removing the influence of socio-demographic variables. The quality of logistics services can therefore be identified as a significant predictor of user satisfaction in Serbia.

It was also shown that among the dimensions of the quality of logistics services, the greatest impact on user satisfaction is achieved only by responsibility (the willingness of the provider to help and provide fast service), despite the assumption that empathy, tangible elements and reliability do it. Reliability and tangible elements show a moderately significant, while security and empathy a less significant positive correlation with user satisfaction. Although all dimensions of the quality of logistics services are positively correlated with user satisfaction, only the responsibility of employees in a logistics company can increase user satisfaction with the delivered service. Also, the obtained results show that responsibility in relation to other dimensions of the quality of logistics services is a significant predictor of user satisfaction that explains 35.7 percent of the variance of user satisfaction.

According to the obtained results, it can be concluded that high-quality services play a key role in increasing user satisfaction, which in turn contributes to a larger market share and profitability of logistics companies. In order to achieve a competitive advantage, it is necessary for companies to focus on the development and improvement of the quality of their services, which in the case of Serbian logistics practice can be achieved through the responsibility of employees, that is, the willingness to help and provide service quickly.

Literature

1. Arslan, M., M. Iftikhar, and R. Zaman. 2014. Effect of service quality dimensions on customer satisfaction: A comparative analysis of Pakistan Telecom sector. Revista de Management Comparat International, 15(4): 440.

2. Budiarta, IS, I. Fachira. 2017. Customer Loyalty: The effects of Service Quality and the Mediating Role of Customer Satisfaction, Case Study: PT Sabda Alam Hotel. Journal of business and management, 6/2: 250-261.
3. Caceres, RC, NG Paparoidamis. 2007. Service quality, relationship satisfaction, trust, commitment and business - to - business loyalty. European journal of marketing, 41(7/8): 836-867.
4. Chapman, R., L., C. Soosay, and J. Kandampully. 2003. Innovation in logistics services and the new business model: a conceptual framework. International Journal of Physical Distribution and Logistics Management, 33 (7): 630–650.
5. Chen, K., C. Chang, and C. Lai. 2009. Service quality gaps of business customers in the shipping industry. Transportation Research Part E, 45: 222–237.
6. Cronin, JJ, SA Taylor. 1992. Measuring service quality; and re-examination and extension. The Journal of Marketing, 56(3): 55-68.
7. Dabholkar, PA (1995). A contingency framework for predicting causality between customer satisfaction and service quality. ACR North American Advances.
8. Dharmadasa, SA, N. Gunawardane. 2017. Impact of Service Quality on Customer Satisfaction with Special Reference to Mobile Telecommunication Industry of Sri Lanka, 3(1): 26-58.
9. Eresia-Eke, CE, EM Pretorius, LH Korkie, and M. Pretorius. 2020. Subliminal contributions of service quality dimensions to customer satisfaction in food delivery businesses. African Journal of Hospitality, Tourism and Leisure, 9(4): 655-668.
10. Fida, BA, Ahmed, U., Al-Balushi, Y., Singh, D. (2020). Impact of service quality on customer loyalty and customer satisfaction in Islamic banks in the Sultanate of Oman. *Sage Open,* 10(2).
11. Gorla, N., TM Somers, and B. Wong. 2010. Organizational impact of system quality, information quality, and service quality. The Journal of Strategic Information Systems, 19(3): 207-228.
12. Hoang, DT, B. Igel, T. Laosirihongthong. 2010. Total quality management (TQM) strategy and organizational characteristics: Evidence from a recent WTO member. Total quality management, 21(9): 931-951.
13. Huang, B., T. Wang, and X. Xue. 2012. Service-selecting approach based on domain-specified 'Quality of Service' model and its application in logistics. The Service Industries Journal, 32 (9):1571–1588.
14. Huang, Ch., J., and KP Huang. 2012. The logistics capabilities scale for logistics service providers. Journal of Information and Optimization Sciences, 33 (1):135-148.

15. Huang, TCK 2012. Mining the change of customer behavior in fuzzy time-interval sequential patterns. Applied Soft Computing, 12(3): 1068-1086.
16. Ismail, A., YM Yunan. 2016. Service quality as a predictor of customer satisfaction and customer loyalty. LogForum, 12(4): 269-283.
17. Jayawardhena, C. 2010. The impact of service encounter quality in service evaluation: evidence from a business - to - business context. Journal of Business & Industrial Marketing, 25(5): 338-348.
18. Kilibarda, M., and M. Andrejić. 2012. Logistics Service Quality Impact on Customer Satisfaction and Loyalty. Conference: 2nd Olympus International Conference on Supply Chains (ICSC 2012) At: Katerini, Greece.
19. Kilibarda, M., S. Zečević, M. Vidović. 2012. Measuring the quality of logistic service as an element of the logistics provider offering. Total Quality Management & Business Excellence, 23 (11-12): 1345–1361.
20. Li, M., CD Souffo, AK Lucien, DF Temgoua, J. Yulong, Y. Yang. 2019. Impact of logistics service quality on customer satisfaction: evidence from Cameroon. International Journal of Economics, Commerce and Management, VII(11): 333-351.
21. Liu, WH, D. Xie. 2013. Quality decision of the logistics service supply chain with service quality guarantee. International Journal of Production Research, 51(5): 1618-1634.
22. Mai, DS, PH Hai, DT Cuong, BH Khoi. 2021. PLS-SEM algorithm for the decision to purchase durian milk with seeds. In Journal of Physics: Conference Series, 1860(1): 012013.
23. McDougall, GH, T. Levesque. 2000. Customer satisfaction with services: putting perceived value into the equation. Journal of services marketing, 14(5), 392-410.
24. Meidutė, I., M. Litvinenko, and A. Aranskis. 2012. Logistics cooperation: integrated logistics services. Business: Theory and Practice, 13(4): 343-351.
25. Negi, R. 2009. Determining customer satisfaction through perceived service quality: A study of Ethiopian mobile users, International Journal of Mobile Marketing, 4(1): 31-38.
26. Nguyen, TLH, K. Nagase. 2019. The influence of total quality management on customer satisfaction. International journal of healthcare management, 12(4): 277-285.
27. Nugroho, S., S. Kempa, WST Panjaitan. 2020. Logistic Service Quality and Customer Satisfaction to Customer Retention on Rice Producer Industry, SHS Web of Conferences, 76.

28. Parasuraman, A., VA Zeithaml, and LL Berry. 1994. Reassessment of expectations as a comparison standard in measuring service quality: implications for further research. Journal of marketing, 58(1): 111-124.
29. Politis, Y., G. Politis, and S. Binioris. 2014. Logistics service quality and its effects on customer satisfaction in the manufacturing companies' supply chains empirical evidence from Greece. Journal of Modeling in Management, 9(2): 215–237.
30. Rust, RT, RL Oliver. 1994. Service Quality: Insights and Managerial Implications from the Frontier. In: Rust, RT and Oliver, RL, Eds., Service Quality: New Directions in Theory and Practice, Sage Publications, Thousand Oaks, 1-19.
31. Shemwell, DJ, U. Yavas, and Z. Bilgin. 1998. Customer - service provider relationships: an empirical test of a model of service quality, satisfaction and relationship - oriented outcomes. International journal of service industry management, 9(2): 155-168.
32. Slack, NJ, G. Singh, and S. Sharma. 2020. The effect of supermarket service quality dimensions and customer satisfaction on customer loyalty and disloyalty dimensions. International Journal of Quality and Service Sciences, 12 (3): 297-318.
33. Supriyanto, A., BB Wiyono, and B. Burhanuddin. 2021. Effects of service quality and customer satisfaction on loyalty of bank customers. Cogent Business & Management, 8(1): 19 -37.
34. Sureshchandar, GS 2021. Quality 4.0–a measurement model using the confirmatory factor analysis (CFA) approach. International Journal of Quality & Reliability Management. Vol. ahead-of-print No. ahead-of-print.
35. Thirunavukkarasu, A., VR Nedunchezian. 2019. Relationship between service quality and customer satisfaction in airlines industry. Academy of Marketing Studies Journal, 23(4): 1-12.
36. Vencataya, L., S. Pudaruth, R. Juwaheer, G. Dirpal, and N. Sumodhee. 2019. Assessing the impact of service quality dimensions on customer satisfaction in commercial banks of Mauritius. Studies in Business and Economics, 14(1): 259-270.
37. Wirtz, J. 2001. Improving the Measurement of Customer Satisfaction: A Test of Three Methods to Reduce Halo. Managing Service Quality, 11 (2): 99-111.
38. Woodall, T. 2001. Six Sigma and Service Quality: Christiam Gronroos Revisited. Journal of Marketing Management, 17: 595–60.
39. Yee, RW, AC Yeung, and TCE Cheng. 2011. The service-profit chain: An empirical analysis in high-contact service industries. International Journal of Production Economics, 130(2): 236-245.

40. Zairi, M. 2000. Managing customer satisfaction: a best practice perspective. The TQM Magazine, 12(6): 389–394.
41. Zeithaml, V., A., LL Berry, and A. Parasuraman. 1993. The nature and determinants of customer expectations of service. Journal of the Academy of Marketing Science, 21(1):1–12.