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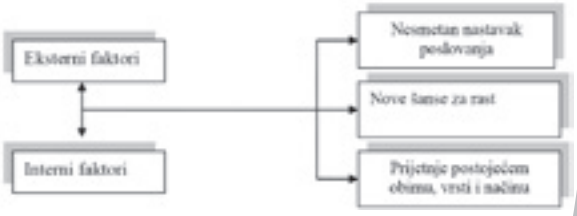

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RAZLIKE U FINANSIJSKOM CIKLUSU BOSNE I HERCEGOVINE I DRUGIH VALUTNIH PODRUČJA

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Sažetak: *Mjereno realnim kreditima BiH je u proteklom periodu imala dva finansijska ciklusa, dok odnos kredita i BDP ukazuje na samo jedan finansijski ciklus. Oba metoda određivanja finansijskog ciklusa pokazuju da je kreditna aktivnost u BiH u skorašnjem periodu značajno ispod trenda. U poređenju sa ostalim zemljama korelacija između bh. finansijskog ciklusa i onoga u zoni evra je relativno niska. Zbog karakteristika bankarskog i finansijskog tržišta, odsustva kreditne funkcije centralne banke na domaćem tržištu, te generalno niskog stepena diskrecione monetarne politike recentne vrijednosti finansijskog ciklusa u BiH su najniže u odabranom uzorku valutnih područja. U BiH se prikazuje i najveća razlika u vršnim vrijednostima finansijskog ciklusa mjerenog realnim kreditima, a isti rezulat se prikazuje i u finansijskom ciklusu na bazi dubine finansijskog posredovanja. Izuzetak je Slovenija u kojoj je bankarska kriza dugoročno uticala na finansijski ciklus. Na kraju analiziranog perioda BiH ima najnižu vrijednost finansijskog ciklusa. Za korekciju finansijskog ciklusa BiH ima na raspolaganju postojeće instrumente monetarne politike, obaveznu rezervu, naknadu na obaveznu rezervu i višak rezervi, a može uvesti i nove; ex nihilo emisiju primarnog novca i makroprudencionu regulaciju. Režim valutnog odbora ne garantuje usklađenost finansijskog ciklusa sa valutnim područjem rezervne valute.*

Ključne riječi: *krediti, monetarna politika, finansijski ciklus, analiza jaza.*

JEL klasifikacija: *B22, E52, G21.*

UVOD

Predmet ovoga istraživanja je bh. finansijski ciklus, a cilj da se on izoluje i uporedi sa finansijskim ciklusom zone evra, na osnovu čega bi se mogle izvući preporuke za monetarnu politiku. Očekujemo da ćemo u najvećem dijelu analiziranog perioda pronaći nizak stepen podudarnosti između bh. i evropskog finansijskog ciklusa – to je radna hipoteza istraživanja – ali naše pretpostavke se ne završavaju na tome. Zbog

visokog stepena ekspanzivnosti monetarne politike Evropske centralne banke (ECB) logično je očekivati veliko razmimoilaženje u amplitudi finansijskog ciklusa u BiH i ostalim valutnim područjima, posebno nakon izbijanja pandemije korona virusa u 2020.godini kada je stepen ekspanzivnosti monetarne politike, kroz PEPP (eng.pandemic emergency purchase programme) dodatno povećan. BiH je, zbog prirode monetarnog režima koji zabranjuje emisiju primarnog novca ex nihilo, jedna od rijetkih zemalja koja tokom pandemije nije pozamljivala novac rezidentima.

U prvom dijelu istraživanja raspravljamo na temu ranijih nalaza na temu generalno finansijskog ciklusa i finansijskog ciklusa u Bosni i Hercegovini. Zatim objašnjavamo metodološke aspekte izračunavanja finansijskog ciklusa, sa posebnim naglaskom na Hodrik-Preskot filter i koeficijent izravnavanja (lambda). O rezultatima istraživanja diskutujem u sljedećem djelu istraživanja, a u zaključnim razmatranjima uspostavljamo vezi između glavnih nalaza istraživanja i poželjnog smjera monetarne politike.

LITERARNI PREGLED

Finansijski ciklus varira zavisno od monetarnog i finansijskog režima, te vrste ekonomske politike. On utiče na ekonomiju, i sa obzirom da u sebe uključuje kreditnu aktivnost banaka, ključan je za razumijevanje poslovnih ciklusa (Garcia-Arenas, 2020)) i ekonomskih procesa. Smatra se da je kreditni jaz (eng.gap), računat kao odstupanje orginalne vremenske serije od trenda dobijenog jednostranim filtriranjem (Hodrick – Prescott), dobar alat za predviđanje finansijske krize (Drehmann & Yetman, 2018). Regulatori preporučuju da se ovako izračunati kreditni jaz koristi za izračunavanja kontracikličnog djela kapitala banaka. Postoji i mišljenje, empirijski provjereno (Moramarco, 2023) da se finansijski ciklus, odnosno njegov ekstrakt racio finansijskog ciklusa, može koristiti za predviđanje bruto domaćeg proizvoda.

Vrlo intezivnu i korisnu raspravu o prirodi finansijskog ciklusa i njihovoj vezi sa makroekonomijom pronašli smo u jednom od brojnih istraživanja autora iz Međunarodne banke za poravnanje(Borio, 2012). Autor je pronašao da je finansijski ciklus precizniji ako on pored kredita uključuje i cijene nekretnina. Dalje se tvrdi da je finansijski ciklus mnogo duži i da ima jaču amplitudu nego tradicionalni poslovni ciklus. Obično se sistemska bankarska kriza događa kada je on na vrhu iz čega je zaključeno da je finansijski ciklus vodeći pokazatelj (eng. leding indicator) bankarske krize koja zahvata veći dio bankarskog sektora. Isti autor, u jednom istraživanju rađenom prije dest godina (Borio , 2013) posvećenom poukama iz Velike depresije (2007 - 2009) ukazuje na ukupno sedam karakteristika finansijskog ciklusa[1]. Nalaz da finansijski ciklus traje duže od ostalih ciklusa potvrđen je i u istraživanja MMF-a (Claessens, Kose, & Terones, 2011) sprovedenom na uzorku od 21 razvijene zemlje za period Q1 1960 – Q4 2007.

Za donosioce ekonomskih odluka posebno je korisna veza između finansijskog i drugih ciklusa u ekonomiji. Američki autori (Adrian , Estrella , & Song Shin , 2010) su preko analize raspona između kamatnih stopa na državne hartije od vrijednosti ra-

[1] Finansijski ciklus je povezan sa ciklusom nekretnina, mnogo je duži od poslovnog ciklusa, njegov vrhunac često koincidira sa bankarskom krizom, on je vodeći indikator rizika od finansijske krize, pomoću njega se može konstruisati održivi autput, finansijski ciklus zavisi od monetarnog režima, pojačanje finansijskog ciklusa povezano je sa bilansnom recesijom.

zličite ročnosti (eng. term spread) dokazali vezu između monetarnog, finansijskog i poslovnog ciklusa. Još jedno istraživanje (Avouyi-Dovi & Matheron, 2003) ukazuje na vezu između finansijskog, poslovnog i monetarnog ciklusa.

Za BiH smo pronašli samo jedno istraživanje koje se tiče finansijskog ciklusa ((Centralna banaka Bosne i Hercegovine, 2021)). Ciklus je izolovan primjenom Hodrick – Prescott filtera i analizom glavnih komponenti (eng.principal component analysis, PCA). Pronađen je samo jedan kompletan finansijski ciklus, a na osnovu PCA zaključeno je da na opravak finansijskog ciklusa od ukupno 16 indikatora četiri utiču pozitivno na finansijski ciklus (loši krediti, indikator sa tržište rada, strano zaduživanje i novčana masa). Umjesto konvencionalne i preporučene vrijednosti lambde od 400.000 za derivaciju ciklusa pomoću HP filtera korišten je lambda od 125.000 obrazlažući to kraćim očekivanim trajanjem finansijskog ciklusa u BiH u odnosu na ostale zemlje. Jedno nedavno istraživanje (Jović & Vlašković, 2023) je izolovalo vezu strane kamatne stope sa zaposlenošću i proizvodnjom u BiH, ali taj nalaz nije dovoljan da bi se prepostavilo da postoji jaka veza između bh. i stranog (zona evra) finansijskog ciklusa.

MATERIJAL I METODE

Sve korištene serije podataka su kvartalne, u rasponu od najranije prvog kvartala 2003.godine do maksimalno četvrtog kvartala 2023. Izvori podataka su javno dostupne statistike Agencije za statistiku Bosne i Hercegovine (BHAS), Centralne banke BiH (CBBiH) Evropske centralne banke (ECB) i Narodne banke Srbije (NBS). Uzimajući u obzir prethodno iznesene teorijske i empirijske stavove o načinu izračunavanja i prediktivnim svojstvima finansijskog ciklusa izolovali smo ga na dva načina; kao jaz (eng. gap) realnih kredita i kao jaz u odnosu nominalnih kredita i nominalnog BDP (eng. Credit to GDP,). U oba slučaja za filtriranje vremenske serije – određivanje trenda i ciklusa – upotrijebili smo HP filter sa preporučenom lambdom (λ) od 400.000 (Formula 1). Prvi dio jednadžbe predstavlja kvalitet podešenosti (eng. goodnes of fit) koju filter pokušava minimizirati, a drugi dio je tzv. kazna za hrapavost ili u algebarskom smislu promjena u potencijalnoj stopi rasta realnih kredita (ili kredita/BDP).

Formula 1 Hodrik-Preskotov filter

$$min \sum_{t=0}^{T} (l_t - \bar{l}_t)\text{^}2 + \lambda \sum_{t=2}^{T-1} \left[\left(\bar{l}_{t+1} - \bar{l}_t \right) - \left(\bar{l}_t - \bar{l}_{t-1} \right) \right]\text{^}2$$

gdje su λ – stepen glatkoće trenda; l – logaritam realnih kredita; $\bar{l}$ – logaritam trenda realnih kredita (eng.loan – l).

Izvor: Bulir , A. (2013). Techniques to Estimate Output Trends and Output Gaps. IMF Institute for Capacity Development.p.36. (Prilagodili autori).

Finansijski ciklus, jaza u realnim kreditima, izračunava se (Formula 2) kao razlika između logaritma realnih kredita i trenda realnih kredita, tako da se finansijski ciklus predstavlja kao procenat odstupanja realnih kredita od njihove trendne vrijednosti.

Formula 2 Poslovni ciklu/GDP jaz

$\widehat{l_t} = l_t - \bar{l}_t$, gdje je $\widehat{l_t}$ finansijski ciklus ili kreditni jaz deriviran iz logaritma realnih kredita (l_t) i logaritma trenda realnih kredita ($\bar{l}_t$).

Izvor: Ibid.

Za potrebe kvalitetne uporedne analize nominalne kredite smo definisali kao kredite privatnom sektoru koji uključuju: kredite stanovništvu i kredite nefinansijskim privatnim preduzećima Realni krediti su dobijeni korekcijom, deflacioniranjem, nominalnih kredita sa indeksom cijena (CPI 2015 = 100) nakon čega smo izvršili njihovo logaritmovanje (Brigsov, ili prirodni logaritam). Razlika između dva prirodna logaritma – realnih kredita i trenda realnih kredita – predstavlja stopu promjene, tj. odstupanje od trendne vrijednosti i to je razlog zašto se vrši logaritmovanje.

U drugom metodu određivanja finansijskog ciklusa nominalni BDP smo desezonirali i sabrali četiri sukcesivne kvartalne vrijednosti BDP, te stavili kredite u odnos sa ovako dobijenim BDP i pomnožili sa 100 (da bi dobili udjele izražene procentualno). Ovdje logaritmovanje dobijenih vrijednosti odnosa kredita i BDP nema smisla, jer se radi o procentualnim, a ne apsolutnim, vrijednostima i zato je dobijeni jaz odnosa kredita i BDP u procentnim poenima (razlika između dva postotka). Sve gornje formule, ali bez logaritmovanja, odnose se i na način izračunavanja finansijskog ciklusa preko dubine finansijskog posredovanja tj. odnosa kredita i BDP.

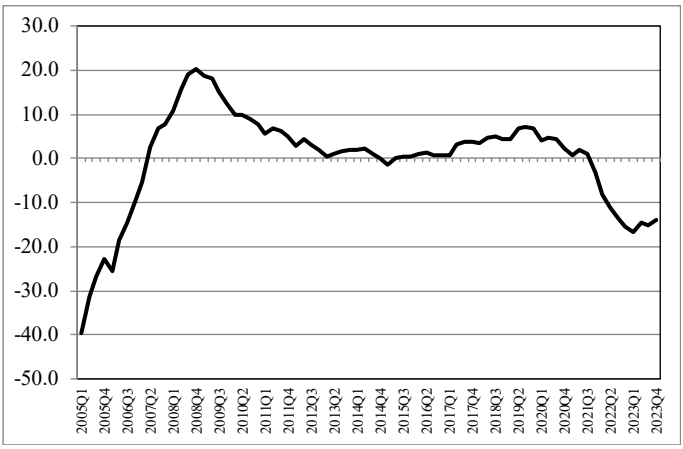
REZULTATI I DISKUSIJA

S obzirom da bh. banke drže oko 90% aktive finansijskog sektora i da Centralna banaka BiH nema pravo da pozajmljuje novac bh. rezidentima glavni uticaj finansijskog sektora na realnu ekonomiju u BiH dolazi sa strane bh. bankarskog sektora. Kako su u BiH tržiše korporativnih obveznica i tržište akcija izuzetno nerazvijena jedina konkurencija bankarskom kreditu je tržište javnog duga bh. entiteta. Ovo tržište je pretežno primarnog karaktera uz povremenu trgovinu na sekundarnom tržištu i ono bez obzira na rast uzrokovan stalnim deficitnim finansiranjem budžeta bh.entiteta ne može ugroziti dominaciju bankarskog kredita. Krediti čine 59% (12/2023) aktive bankarskog sektora, a do pandemije i kasnijeg inflatornog uvećanja BDP njihov udjel u BDP bio je 58% (12/2019), a u 2023.godini pao je na 48%. Bankocentričnost bh. finansijskog sistema uz visok udjel kredita u aktivi banaka, koji su glavni izvor vanjskog finansiranja banaka, čine finansijski ili kreditni ciklus, ključnim za razumjevanje promjena u realnoj ekonomiji i kretanje cijena finansijskih i nefinansijskih aktiva. U analizi bh. finansijskog ciklusa treba uzeti u obzir da je bh. ekonomija višestruko vezana za ekonomiju zone evra. Evro je rezervna valuta u BiH, izvoz u EU čini 73% izvoza BiH, a banke u BiH su pretežno u vlasništvu banaka iz zone evra[2]. Na osnovu ovakve, izuzetno jake veze, mogao bi se očekivati i izuzetno visok stepen sinhronizacije između finansijskih ciklusa zone evra i finansijskog ciklusa u BiH.

Dinamika finansijskog ciklusa određenog realnim kreditima, bez uzimanja u obzir privredne aktivnosti, razlikuje se po zemljama. Sličnost postoji u broju finansijskih

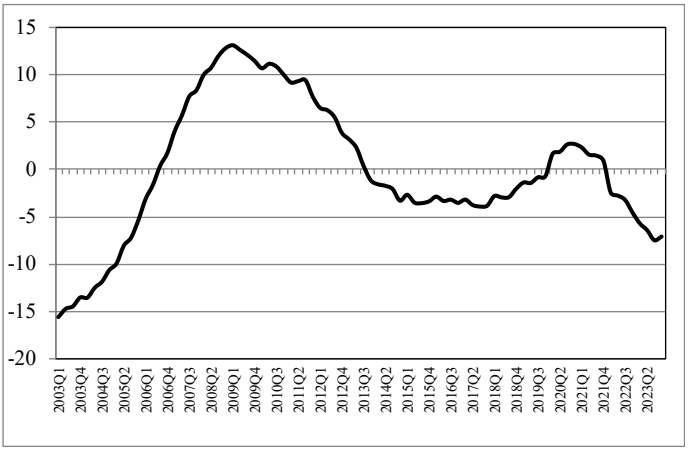
[2] Banke većinski u stranom vlasništvu drže tri četvrtine aktive bankarskog sektora.

ciklusa, i sve zemlje u posmatranom periodu imaju isti broj finansijskih ciklusa – dva. Razlike postoje u stepenu finalizacije drugog finansijskog ciklusa i njegovom intenzitetu. U Hrvatskoj drugi finansijski ciklus, započet 2018.godine još uvijek nije završen (Grafikon 5), a takođe u Hrvatskoj i u Srbiji (Grafikon 4), drugi finansijski ciklus mnogo je intezivniji, mjeren maksimalnom vrijednošću, u poređenju sa ostalim zemljama.



Grafikon 1. BiH, finansijski ciklus na bazi realnih kredita (Q1 2005 – Q4 2023), u %

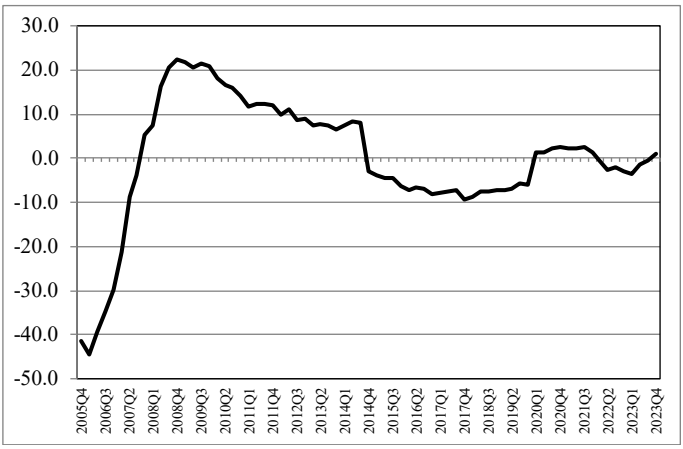
Izvor: CBBiH i BHAS (Obradio autori)



Grafikon 2. Zona evra, finansijski ciklus na bazi realnih kredita, (Q1 2003 – Q4 2023), u %

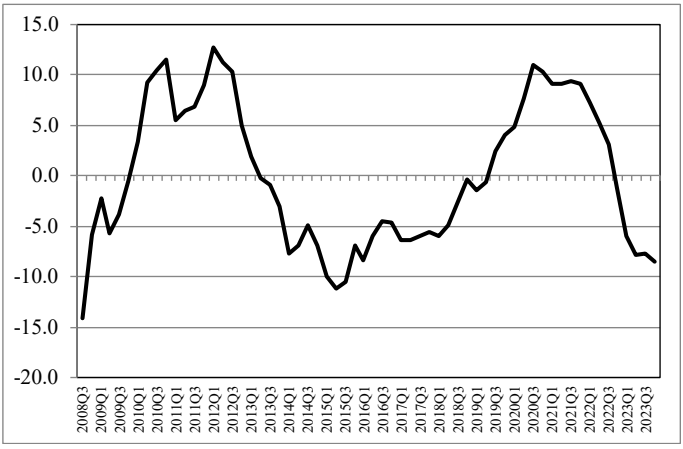
Izvor: Eurostat (Obradili autori)

BH finansijski ciklus (Grafikon 1) ima sličan oblik kao u zoni evra (Grafikon 2), ali bez visoke zavisnosti, što bi se moglo očekivati s obzirom na intenzitet trgovačkih veza i činjenicu da je evro rezervna valuta u BiH. Korelacija sa finansijskim ciklusom zone evra je najniža u BiH (0,57), i u najnovijoj članici zone evra, Hrvatskoj (Tabela 1).



Grafikon 3. Bugarska, finansijski ciklus na bazi realnih kredita (Q4 2005 – Q4 2023), u %

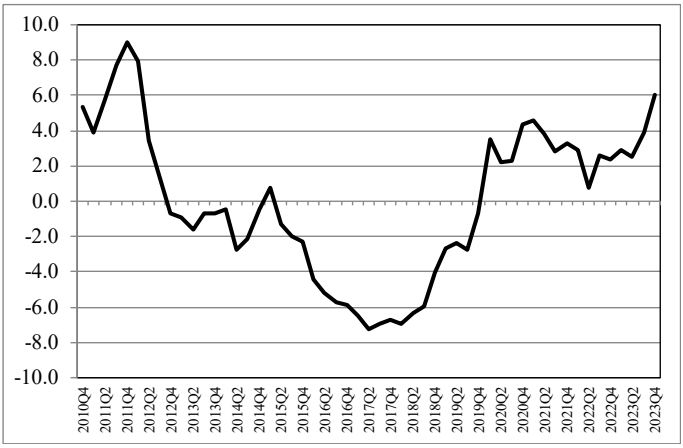
Izvor: BNB (Obradili autori)



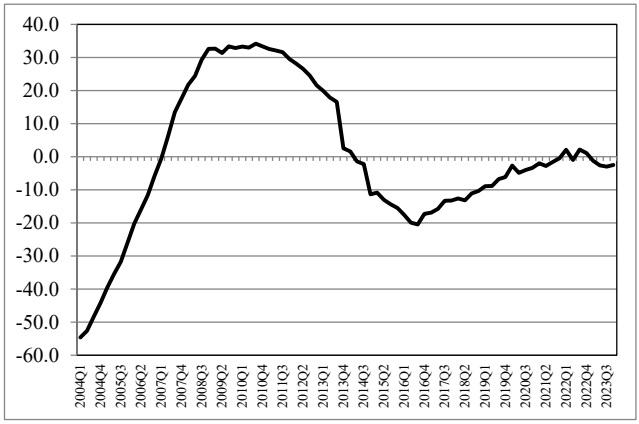
Grafikon 4. Srbija, finansijski ciklus na bazi realnih kredita (Q3 2008 – Q4 2023), u %

Izvor: NBS (Obradili autori)

Najviša je u Sloveniji (Grafikon 6), što je i očekivano, jer je Slovenija u zonu evra ušla 2004.godine, kad je i otpočelo puno usklađivanje finansijskog ciklusa sa zonom evra. 70 % varijabiliteta slovenačkog ciklusa objašnjeno je finansijskim ciklusom zone evra, za razliku od hrvatskog i bh. gdje finansijski ciklus zone evra determiniše samo 30% varijabiliteta. BiH se naspram zone evra, odnosi kao i Hrvatska koja nikada nije bila u režimu valutnog odbora, čiji je devizni kurs do ulaska u zonu evra bio varijabilan i koja je vodila diskrecionu monetarnu politiku i kroz obezbjeđivanje likvidnosti rezidentnim bankama, što je zabranjena aktivnost u bh. monetarnom režimu. Visok stepen neusklađenosti finansijskih ciklusa zone evra i BiH posredno dokazuje Bugarska (Grafikon 3) koja je takođe u režimu valutnog odbora, ali čiji je finansijski ciklus mnogo jače povezan (koeficijent korelacije 0,78) sa finansijskim ciklusom zone evra nego bosanskohercegovački.



Grafikon 5. Hrvatska, finansijski ciklus na bazi realnih kredita (Q4 2010 – Q4 2023), u %
Izvor: HNB (Obradili autori)



Grafikon 6. Slovenija, finansijski ciklus na bazi realnih kredita (Q1 2004 – Q4 2023), u %
Izvor: Evrostat (Obradili autori)

Tabela 1. Matrica koeficijenata korelacije finansijskog ciklusa - realni krediti

	BiH	Zona evra	Srbija	Bugarska	Hrvatska	Slovenija
BiH	1.00	0.57	0.27	0.17	-0.22	0.15
Zona evra	0.57	1.00	0.78	0.78	0.55	0.83
Srbija	0.27	0.78	1.00	0.57	0.63	0.64
Bugarska	0.17	0.78	0.57	1.00	0.70	0.90
Hrvatska	-0.22	0.55	0.63	0.70	1.00	0.69
Slovenija	0.15	0.83	0.64	0.90	0.69	1.00

Izvor: Autori

Uzroci, relativno niske usklađenosti, ino (zona evra) i bh. finansijskog ciklusa smješteni su u strukturi aktive i pasive bh. bankarskog sektora. Iako većinski u stranom vlasništvu, aktive je u vlasništvu banaka sa većinski stranim kapitalom bh. banke nisu ovisne od ino izvora finansiranja i 77% pasive predstavljaju depoziti rezidenata bh. fizičkih i pravnih lica. Takođe, bh. banke su izuzetno likvidne, pa i pored visoke obavezne rezerve (10% od 2016.godine) višak rezervi je 6,7% ukupne aktive bankarskog sektora (12/2023). Prenos monetarne politike ECB u BiH je ograničanog dometa i zbog kamatne marže, koja mjereno razlikom efektivnih aktivnih kamatnih stopa i pasivnih kamatnih stopa značajno prevazilazi kamatni spred u bankama zone evra i ostavlja velike profite bankama. Zbog visoke likvidnost i visoke profitabilnosti banaka (ROA u 2023.godini je 2%), te dominacije sredstava rezidenata u aktivi bh. banaka banke nisu, na bilo koji način zavisne, od monetarne politike ECB. Ovome treba dodati i bankocentričnost bh. finansijskog sektora, te nerazvijenost bh. finansijskog sektora sa raciom prometa[3] (eng.turnover ratio) na tržištu akcija od svega 10%, što upućuje suficitne sektora na bankarske depozite kao glavni oblik štednje i investicija, bez obzira na relativno nisku cijenu bankarskih resursa.

Prema intenzitetu ciklusa, mjerenog razlikom između maksimalne i minimalne vrijednosti (amplituda), tokom prvog ciklusa BiH je između zemalja sa izuzetno jakim, i relativno slabim, ciklusom (Tabela 2). Najjači ciklus je u Sloveniji, Bugarskoj, relativno blag ciklus imaju zona evra, Srbija i Hrvatska[4]. Razlika u amlitudi bh. i ino (zona evra) finansijskog ciklusa je izuzetno visoka 31 p.p. (59,7% – 28,7%). Drugi ciklus je najintezivniji upravo u BiH, a u svim ostalim zemljama njegov intenzitet, mjeren odnosom najviše i najniže tačke ciklusa slabi. Kjučni uticaj na dinamiku i amplitidu ciklusa koji se formirao, prije, tokom, i nakon pandemije, imala je monetarna politika, koja je u svim zemljama, osim u BiH, preko primarne emisije podržavala kreditni ciklus i agregatnu tražnju. Ključni instrument monetarne politike koju je BiH mjenjala tokom, kao i prije i poslije nje, bila je naknada na sredstva iznad obavezne rezerve (višak rezervi). Ona je od jula 2016.godine do oktobra 2021.godine bila negativna, u rasponu od -0,2% do -0,75% i prema jednom istraživanju (Jović, Valutni odbor, monetarna i makroprudenciona regulacija u Bosni i Hercegovini , 2020) ona je zaista imala očekivani uticaj na tržište kapitala. Za period od Q3 2007. do Q1 2017. izolovan je statistički signifikantan uticaj naknade na prinose na primarnom tržištu javnog duga bh. entiteta (Wilcoxon test).

Tabela 2. Amplituda finansijskog ciklusa mjerenog realnim kreditima

		Prvi ciklus	Drugi ciklus
BiH	Maks.	20.1	7.1
	Min.	-39.5	-16.6
	Razlika	59.7	23.7

[3] Odnos prometa i tržišne kapitalizacije.

[4] Za ove dvije zemlje imamo podatke tek od 2008.godine, odnosno 2010.godine, pa komparaciju prvog finansijskog ciklusa BiH sa Srbijom i Hrvatskom treba uzeti sa rezervom.

Zona evra	Maks.	13.1	2.7
	Min.	-15.5	-7.4
	Razlika	28.7	10.2
Srbija	Maks.	12.7	11.0
	Min.	-14.2	-10.5
	Razlika	26.8	21.5
Bugarska	Maks.	22.4	2.5
	Min.	-44.6	-8.8
	Razlika	66.9	11.3
Hrvatska	Maks.	9.0	6.0
	Min.	-7.3	-6.9
	Razlika	16.3	13.0
Slovenija	Maks.	34.2	2.2
	Min.	-54.6	-17.2
	Razlika	88.8	19.4

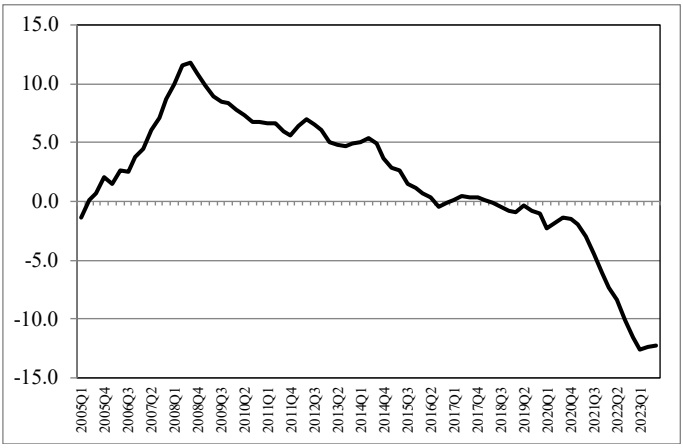
Izvor: Autori

Pored toga, prema istom istraživanju povećanje obavezne rezerve za jedan procentni poen smanjuje godišnji kreditni rast u rasponu od 0.1 p.p. do 0,63 p.p., ali nakon izbijanja pandemije ta veza slabi, a sa njom i kreditna dinamika, koja se tek nakon ukidanja uvedenih poslovnih i društvenih restrikcija ubrzava. Ta je promjena, u uslovima visoke inflacije, više nominalnog, a manje realnog, karaktera, i zato su i maksimalna i završna vrijednost drugog finansijskog ciklusa u BiH vrlo niske. BiH tokom pandemije nije imala na raspolaganju nikakve dodatne izvore finansiranja, naprotiv, nastavljen je odliv strane pasive, a BiH nije koristila kreditne linije ECB za likvidnost zemljama koje nisu članice EU. I Hrvatska i Bugarska, kao članice EU, su koristile kreditne linije ECB pa je njihov drugi finansijski ciklus (izračunat na bazi realnih kredita) u većoj mjeri izravnan i bez ekstremnih oscilacija poput onih u BiH.

Oligopolska struktura bh. bankarskog sektora i oslonac na domaće izvore finansiranja nisu dozvolili značajniji uticaj monetarne politike ECB na bankarske agregate i resurse i njihove cijene u BiH, pa ni na amplitudu drugog finansijskog ciklusa u posmatranom periodu. Nepodudarnost finansijskog ciklusa u BiH i zoni evra, još je očiglednija u finansijskom ciklusu izračunatom na bazi dubine finansijskog posredovanja (količnik kredita i BDP). Naime, umjesto kreditnog jaza na bazi realnih kredita pojedini autori (Ciombra & Rey , 2018) smatraju da je glavni generator finansijskog ciklusa odnos kredita i BDP ili promjena ovoga odnosa, te preporučuju njegovu upotrebu u izolovanju finansijskog ciklusa. Postoje i potpuno drugačija, ekstremna mišljenja (Hamilton, 2018), koja drže da nikada ne treba koristiti filtriranje vremenske serije pomoću Hodrick-Prescott filtera (HP filter). Kao razlog za ovakav stav navode se

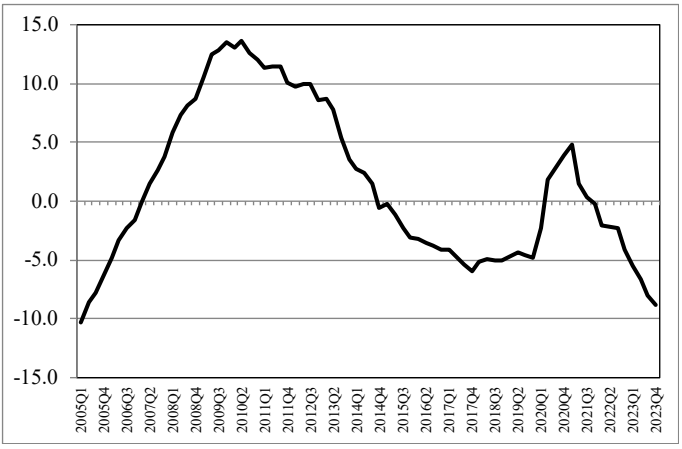
predrasuda završne tačke (eng. endpoint bias) i potencijalno besmislene regresije (eng. spurios regression), pa se zato predlaže linearna projekcija trenda. Međutim, druga grupa autora iz Nacionalne banke Švajcarske (Jokipii , Nyffeler , & Riederer , 2020) smatra da ni normalizacija kredita (količnik kredita i BDP) kao ni upotreba HP filtera nisu prepreka da jaz odnosa između kredita i BDP koristi kao pouzdana ocijena finansijskog ciklusa, s tim da naglašavaju da treba biti oprezan u pogledu tumačenju signala iz ovako deriviranog finansijskog ciklusa.

U normalizovanom finansijskom ciklusu između BiH (Grafikon 7) i zone evra (Grafikon 8) se još više povećava razlika, jer BiH ostaje sa samo jednim finansijskim ciklusom, a zona evra zadržava oba ciklusa (sa izuzetkom Slovenije). Odstupanje ciklusa od trenda u BiH je vrlo izraženo i na kraju 2023.godine (treći kvartal) iznosi 12,3 p.p. Zahvaljujući novom ciklusu ekspanzivne monetarne politike ECB, koja je započela odmah po izbijanju korone (PEPP), opadajuća faza ciklusa (2017) smjenjena je novim relativnim rastom kreditne aktivnosti u zoni evra. Ovaj novi, i neočekivani,



Grafikon 7. BiH, finansijski ciklus na bazi odnosa kredita i BDP (Q1 2005 – Q3 2023), u p.p.

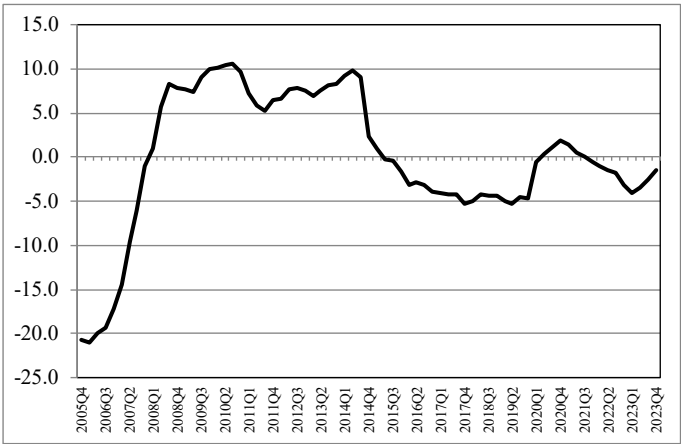
Izvor: CBBiH i BHAS (Obradili autori)



Grafikon 8. Zona evra, finansijski ciklus na bazi odnosa kredita i BDP (Q1 2005 – Q4 2023), u p.p.

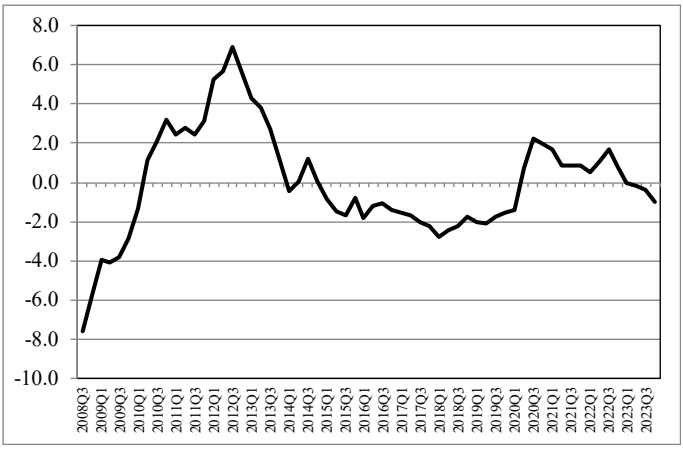
Izvor: Evrostat (Obradili autori)

ciklus monetarne ekspanzije, se u manjoj ili većoj mjeri prenio na sve zemlje zone evra i EU. Kreditne linije za likvidnost ECB su stavljene na raspolaganje svim zemljama EU koje nisu članice, pa zato i Hrvatska ima drugi finansijski ciklus (Grafikon 11), ali sa naravno mnogo manjom amplitudom od prethodne. U Slovenije (Grafikon 12) zbog posljedica bankarske krize efekti novog talasa monetarne i fiskalne ekspanzije nisu izraženi, a uočljivi su u Bugarskoj (Grafikon 9), iako ona funkcioniše u monetarnom režimu valutnog odbora koji dozvoljava obezbjeđenje likvidnosti rezidentnim bankama od strane Bugarske nacionalne banke samo u posebnim slučajevima finansijske nestabilnosi. Srbija (Grafikon 10) je vodila vrlo aktivnu ekspanzivnu monetarnu politiku tokom pandemije, i u aktivi Narodne banke Srbije koja je povećana za 46% (12/2019 -12/2022) dinarski krediti su na vrhuncu (april 2022) činili 8,9% aktive.



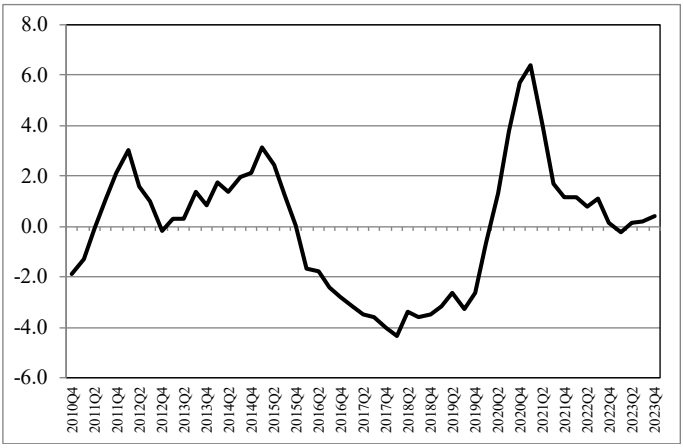
Grafikon 9. Bugarska, finansijski ciklus na bazi odnosa kredita i BDP (Q4 2005 – Q4 2023), u p.p.

Izvor: BNB (Obradili autori)



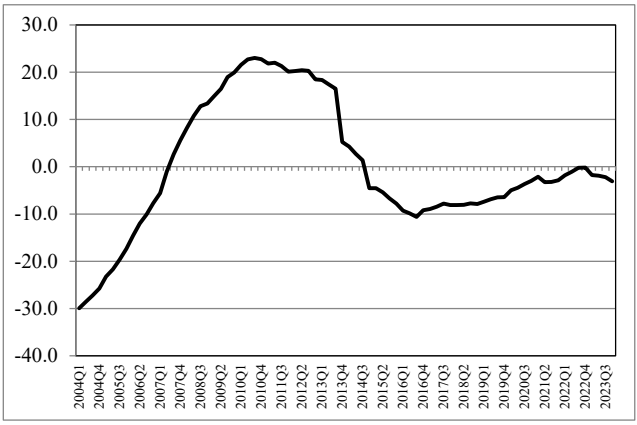
Grafikon 10. Srbija, finansijski ciklus na bazi odnosa kredita i BDP (Q3 2008 – Q4 2023), u p.p.

Izvor: NBS (Obradili autori)



Grafikon 11. Hrvatska, finansijski ciklus na bazi odnosa kredita i BDP (Q4 2010 – Q4 2023), u p.p.

Izvor: HNB (Obradili autori)



Grafikon 12. Slovenija, finansijski ciklus na bazi odnosa kredita i BDP (Q1 2004 – Q4 2023), u p.p.

Izvor: Evrostat (Obradili autori)

U odabranom uzorku zemalja samo Hrvatska ima niži stepen usklađenosti finansijskog ciklusa sa zonom evra od BiH (Tabela 3). Valutni odbor u Bugarskoj (sa evrom kao rezervnom valutom isto kao i u BiH,) je zajedno sa dodatnom likvidnošću koja je Bugarska kao članica EU dobila od ECB, obezbijedio izuzuzetno visok stepen usklađenosti finansijskog ciklusa u Bugarskoj i zoni evra.

Tabela 3. Matrica koeficijenata korelacije finansijskog ciklusa - krediti/BDP

	BiH	Zona evra	Srbija	Bugarska	Hrvatska	Slovenija
BiH	1.00	0.69	0.38	0.65	0.03	0.53
Zona evra	0.69	1.00	0.86	0.87	0.47	0.90
Srbija	0.38	0.86	1.00	0.78	0.54	0.87
Bugarska	0.65	0.87	0.78	1.00	0.52	0.83

Hrvatska	0.03	0.47	0.54	0.52	1.00	0.30
Slovenija	0.53	0.90	0.87	0.83	0.30	1.00

Izvor: Autori

I Srbija je imala na raspolaganju kredite za likvidnost ECB, a to je uz ekspanzivnu monetarnu politiku i defakto fiksni devizni kurs[5] vezu između ino i domaćeg finansijskog ciklusa načinilo mnogo intezivnijom nego u BiH, i dovelo je na nivo slovenačke.

U BiH izvor likvidnosti bankarskog sistema nije ni primarna emisija CBBiH ni ECB. To je glavni razlog zbog čega je recentna vrijednost finansijskog ciklusa (-12,3 p.p. u Q3 2023) istorijski najniža za BiH i najniža u odnosu na odabrana valutna područja. Međutim, tu ne prestaje uticaj manje raspoloživih izvora finansiranja na finansijski ciklus. Isto kao što je intenzitet drugog finansijskog ciklusa baziranog na realnim kreditima najveći u BiH, ona sa izuzetkom Slovenije, ima i najviši raspon između minimalne i maksimalne vrijednosti ciklusa određenog dubinom finansijskog posredovanja (Tabela 4). Slovenija ima veću amplitudu finansijskog ciklusa od BiH zato što je 2013.godine prošla kroz finansijsku krizu sa gubicima koji su prevazišli kapital banaka i koji su u potpunosti pali na teret kapitala banaka i djela deponenta i zato je ona sa aspekta ovog upoređivanja izuzetak (eng. outlier)

Tabela 4. Amplituda finansijskog ciklusa mjerenog odnosom kredita i depozita

BiH	Zona evra	Bugarska	Srbija	Hrvatska	Slovenija
24,4	19,5	15,8	9,7	10,7	33

Izvor: Autori. Prikazana je najviša amplituda finansijskog ciklusa od globalne finansijske krize (2007 – 2009.) do kraja 2023.godine.

Tek nakon unutrašnjeg restrukturiranja (eng. bail in) slovenačka država je izvršila dokapitalizaciju banaka i uvela nove vlasnike u bankarski sektor, ali veliki gubitak povjerenja u bankarski sektor Slovenije naškodio je na dug rok bankarskom posredovanju i proizveo dugoročne efekte na slovenački finansijski ciklus. Isto kao u Slovenija ni u BiH nije formiran drugi finansijski ciklus, s tom razlikom da BiH nije prošla kroz bilo kakvu, sistemsku ili nesistemsku, bankarsku krizu. Nedostatak drugog finansijskog ciklusa ukazuje na bitno drugačije karakteristike bh.bankarskog sistema, u čijoj osnovi je odsustvo LOLR (eng. lender of last resort) i generalno kreditne funkcije bh. centralne banke na bh. tržištu. Uporedno, na kraju analiziranog perioda BiH ima najnižu vrijednost finansijskog ciklusa (Tabela 5) posmatrano po obe metodologije određivanja finansijskog ciklusa.

[5] Srbija je dejure u režimu varijabilnog deviznog kursa, ali zbog njegove višegodišnje stabilnosti (1 EUR = 117 RSD) devizni kurs dinara je defakto fiksiran u odnosu na evro.

Tabela 5. Vrijednost finansijskog ciklusa u Q4 2023.godine

	BiH	Zona evra	Bugarska	Srbija	Hrvatska	Slovenija
Realni krediti	-13.9	-7.0	1.1	-8.5	6.0	-2.5
Krediti/BDP	-11.4	-8.8	-1.5	-1.0	0.4	-3.1

Izvor: Autori

Sa aspekta odnosa kredita i BDP, razlika u krajnjoj vrijednosti finansijskog ciklusa ne odstupa bitno u odnosu na zonu evra, ali je velika u poređenju sa ostalim valutnim područjima, koje su male i otvorene ekonomije. Značajno, negativno, odstupanje od trendne vrijednosti dubine finansijskog posredovanja povezano je i sa stepenom iskorištenosti kreditnog potencijala i sa korištenjem bankarskih resursa za prekomjerno izlaganje bh.banaka stranim tržištima. Izuzetno niska recentna vrijednost bh. finansijskog ciklusa se može dovesti u vezi sa stepenom likvidnosti bh. makroekonomije ukazujući na komparativno posmatrano njen najniži nivo od svjetske finansijske krize.

ZAKLJUČNA RAZMATRANJA

Finansijski ciklus se određuje na osnovu realnih kredita ili preko dubine finansijskog posredovanja, koja je izražena kao odnos kredita i nominalnog BDP. Mi smo u ovome istraživanju na realne kredite i dubinu finansijskog posredovanje na BiH i još četiri zemlje (Srbija, Bugarska, Hrvatska i Slovenija) i jedno valutno područje, zonu evra, primjenili standardnu metodologiju određivanja trenda, i ciklusa kao odstupanja od trenda (u % i procentnim poenima). U istraživanje smo ušli sa dvije hipoteze; da se bh. finansijski ciklus razlikuje od finansijskog ciklusa zone evra i da je razlika između najviše i najniže tačke finansijskog ciklusa najizraženija kod BiH.

Mjereno realnim kreditima BiH je u proteklom periodu imala dva finansijska ciklusa, dok odnos kredita i BDP oslikava samo jedan finansijski ciklus. Oba metoda određivanja finansijskog ciklusa pokazuju da je kreditna aktivnost u skorašnjem periodu značajno ispod trenda. U poređenju sa ostalim zemljama korelacija između bh. finansijskog ciklusa i onoga u zoni evra je relativno niska. BiH ima vlastiti finansijski ciklus koji se značajno razlikuje od onoga u zemlji rezervne valute.

Zbog odsustva kreditne funkcije centralne banke na domaćem tržištu, te karakteristika bh. bankarskog i finansijskog tržišta, recentne vrijednosti finansijskog ciklusa u BiH su najniže u poređenju sa odabranim valutnim područjima. U BiH se u recentnom periodu prikazuje i najveća razlika u vršnim vrijednostima ciklusa. Intenzitet finansijskog ciklusa, amplitida, zavisi od visine obavezne rezerve i naknade na obaveznu rezervu i višak rezervi i primjene mjera makroprudencione regulacije, generalno od monetranog režima.

Potencijalna ex nihilo emisija primarnog novca centralne banke u bh. monetarnom režimu bila bi snažan korektivni faktor finansijskog ciklusa u Bosni i Hercegovini. Valutni odbor u BiH nije garancija da će se bh. finansijski ciklus biti visokokorelisan sa finansijskim ciklusom u zoni evra čija je valuta rezervna valuta u BiH i koja je glavni bh. trgovinski partner.

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DIFFERENCES IN THE FINANCIAL CYCLE OF BOSNIA AND HERZEGOVINA AND OTHER CURRENCY AREAS

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Summary: *The financial cycle is determined based on real loans or the ratio of loans to nominal GDP. In the research, we applied the standard methodology of determining trends and cycles as deviations from the trend using the Hodrick-Prescott filter. We entered the research with two hypotheses. We assumed that the BH financial cycle is different from the financial cycle in the eurozone. We also assumed that the difference between the highest and the lowest point of the financial cycle is the most pronounced in Bosnia and Herzegovina. In addition to the financial cycle in Bosnia and Herzegovina, the subject of analysis was the financial cycle in eurozone, Slovenia, Serbia, Bulgaria, and Croatia. Measured by real loans, Bosnia and Herzegovina had two financial cycles in the past period, while the ratio of loans to GDP indicates only one financial cycle. Both methods of determining the financial cycle show that credit activity in BH in the recent period is significantly below the trend. Compared to other countries, the correlation between the BH financial cycle and that of the eurozone is relatively low. Due to the characteristics of the banking and financial market, the absence of the credit function of the central bank on the domestic market, and the generally low degree of monetary policy discretion, the recent values of the financial cycle in BH are the lowest in the selected sample of currency areas. In BH the biggest difference is shown in the final values of the financial cycle measured by real credit, and the same result is shown in the financial cycle based on financial intermediation depth. The exception is Slovenia, where the banking crisis had a long-term impact on the financial cycle. At the end of the analyzed period, BH has the lowest value of the financial cycle. For the correction of the financial cycle, BH has at its disposal the existing instruments of monetary policy, the reserve requirements, remuneration on reserve requirements, and excess reserves, and it can introduce new ones; ex nihilo issuance of primary money and macroprudential regulation. The currency board regime does not guarantee compliance of the financial cycle with the reserve currency currency area. Bosnia and Herzegovina has a financial cycle, which is significantly different from that of a country with a reserve currency. A significant deviation from the trend value of the loan-to-GDP ratio is also connected with the use of credit potential for exposure of BH banks to predominantly eurozone markets. The extremely low recent value of the BH financial cycle indicates the low level of liquidity of the BH economy. The potential ex nihilo issue of the primary money of the central bank in the BH monetary regime would be a strong corrective factor of the financial cycle in Bosnia and Herzegovina.*

Keywords: *loans, monetary policy, financial cycle, gap analysis.*

JEL Classification: *B22, E52, G21.*

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

PRIMJENA CAMA ALGORITMA U MASOVNOJ PROCJENI VRIJEDNOSTI NEPOKRETNOSTI U REPUBLICI SRPSKOJ

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Sažetak: *Tržište nepokretnosti predstavlja sastavni dio ekonomskog razvoja svake države i doprinosi promovisanju investicija, proizvodnje, povećanju prihoda kao i socio-ekonomsku stabilnost. Svaka država teži da ostvari stabilnost tržišta nepokretnosti. Najvažniji faktor stabilnosti tržišta nepokretnosti su cijene nepokretnosti. Cijene nepokretnosti određuju opšte blagostanje građana. One utiču i na poslovanje banaka (preko hipoteka, kupoprodaja itd.). Izuzetno je značajno stabilizovati cijene nepokretnosti. Samo na taj način je moguće implementirati politike i makroekonomske mjere koje će tržište nepokretnosti učiniti efikasnim segmentom ukupnog društveno-ekonomskog sistema. Zbog svega navedenog, veoma je važno tačno procijeniti cijene nepokretnosti. Proces formiranja cijene nepokretnosti počinje u Registru cijena nepokretnosti a završava kontrolom kvaliteta i kalibracijom modela i predstavlja iterativan proces. Masovna procjena vrijednosti nepokretnosti omogućava transparentnost i objektivnost u procjeni vrijednosti nepokretnosti i omogućava pravednije oporezivanje nepokretnosti. Cilj ovog istraživanja je da se procjeni vrijednost nepokretnosti primjenom metode masovne procjene vrijednosti nepokretnosti - CAMA (eng. Computer Asissted Mass Appraisal) algoritma. Rezultati istraživanja pokazuju da odstupanja cijena iz notarskih ugovora i procijenjenih vrijednosti odgovaraju standardima koji se primjenjuju u masovnoj procjeni vrijednosti nepokretnosti u svim zemljama svijeta koji ih primjenjuju.*

Ključne riječi: *CAMA algoritam, masovna procjena vrijednosti nepokretnosti, vrijednosne zone, relacione tabele.*

JEL klasifikacija: *C44, C51, C61, H31.*

UVOD

Tržište nepokretnosti je važno područje djelatnosti u tržišno orijentisanim ekonomijama. Za tržišta nepokretnosti vrijede iste zakonomjernosti kao i za ostala tržišta (roba, usluga, kapitala). Veći poremećaji tražnje ili veća ponuda nepokretnosti automatski dovodi do pada cijena i obrnuto. Problemi i krizne situacije se promptno reflektuju na tržište nepokretnosti; krize najviše utiču na cijene nepokretnosti. Važan je

i fiskalni momenat, jer od prometa na tržištu nepokretnosti zavise nacionalni i lokalni fiskalni prihodi. Najvažniji pokazatelj stabilnosti tržišta nepokretnosti su cijene nepokretnosti. Cjenovna politika na tom složenom tržištu je osjetljiva čak i na manje promjene ponude ili tražnje. Ona utiče na poslovanje banaka (preko hipoteka, kupoprodaja itd.), pa je zbog svega izuzetno značajno stabilizovati cijene nepokretnosti i doći do njihovih realnih vrijednosti. Tržišna vrijednost nepokretnosti se može smatrati jednom od četiri karakteristike nepokretnosti na kojima se zasniva osnovna paradigma geodetsko-katastarskog informacionog sistema i katastra nepokretnosti (Miladinović, 2013), pored položaja nepokretnosti (broj parcele i njen položaj), prava (i imaoci prava) na nepokretnostima i načinu korišćenja. Tržište nepokretnosti neopravdano je već duži niz godina (deceniju) ostalo izvan akademskog bavljenja ovim pitanjem. Hipotekarna kriza u SAD potakla je mnoge istraživače da se ozbiljnije bave tržištem nepokretnosti[1]. Za razliku od finansijske krize tog perioda, tržište nepokretnosti se drugačije ponaša u doba pandemije COVID 19. Finansijski sistem savremenih država je mjerama ekonomske politike (smanjenje kamatnih stopa, subvencijama,...) uspio da neutrališe početne šokove i tržište je reagovalo tako da je tržište nepokretnosti i dalje raslo. Tome je doprinijela i činjenica da stanovništvo nije bilo kreditno zaduženo kao u doba finansijske krize (Duca, J., Muelbauer, J., Murphy, M., 2021).

Proces formiranja cijene nepokretnosti počinje u Registru cijena nepokretnosti a završava kontrolom kvaliteta i kalibracijom modela i predstavlja iterativan proces. Proces formiranja cijene nepokretnosti se može prikazati u nekoliko koraka (ne moraju biti uslovljeni navedenim redom):

1. preuzimanje podataka o tržištu, analiza tržišta nepokretnosti i izdvajanje kvalitetnih transakcija (Registar cijena nepokretnosti),
2. vremensko prilagođavanje cijena transakcija,
3. preuzimanje podataka o nepokretnostima (katastarske evidencije) i analiza podataka,
4. određivanje ambicije modela (definisanje vrijednosnih nivoa),
5. kreiranje vrijednosnih zona i dodjeljivanje vrijednosnih nivoa svakoj zoni,
6. izrada relacionih tabela,
7. izrada vrijednosnih tabela,
8. određivanje (modelovanje) uticaja drugih faktora,
9. kontrole kvaliteta (zona, nivoa, uniformnosti procjene) - kalibracija modela (prva iteracija)
10. druga, treća… n-ta iteracija (ponavljanje prethodnog postupka).

PREGLED KORIŠTENE LITERATURE

U novije vrijeme, pitanje masovne procjene vrijednosti nepokrentosti izazvalo je veliku pažnju i interes istraživača i kreatora ekonomskih politika u svijetu. Navedimo neke autore i istraživanja koja su se bavila pitanjem uticaja faktora na cijene nepokrentosti.

Analizirajući koje su to metode masovne procjene vrijednosti nepokretnosti u

[1] Padom tržišta finansijskih derivata vezanim za hipoteke (počela 2007. godine i može se porediti sa velikom depresijom iz 1929. godine), cijeli svijet je usmjeren na recesiju čije posljedice osjećamo i danas.

Grčkoj i poređenje primjene GIS CAMA metoda i MRA metoda u procjeni nekretnina, autori (Dimopoulos, T., Moulas, A.,, 2016) zaključuju da je GIS CAMA metod bolji u masovnoj procjeni vrijednosti nepokretnosti.

Napredne informaciono-komunikacione tehnologije, kao što je statističko modeliranje i pretraživanje velikog broja podataka (rudarenje podataka, Data Mining) izuzetno je važno za određivanje uticaja faktora na cijene nepokretnosti. Tako autori (Ersoz, F., Ersoz, T., Soydan, M., 2018) primjenom tehnika Data Mining-a (CHAID i C&RT algoritmi) smatraju da najveći uticaj na cijenu nepokretnosti imaju veličina nepokretnosti, udaljenost od centra grada, popularnost sredine u kojoj se nepokretnost nalazi i godina izgradnje.

Analizirajući uticaj faktora na cijene nepokretnosti autori (Račić, 2022) postavljaju pitanje u kojoj mjeri najčešće korišteni indikatori daju dovoljno dobru informaciju o analiziranoj pojavi i da li možda postoje i neki drugi faktori koji su bili nepoznati ili zapostavljeni. Izbor faktora je ipak subjektivna stvar i zavisi od cilja istraživanja.

Brojni su primjeri korištenja informacionih tehnologija i regresione analize na rješavanju problema izbora optimalnih investicionih rješenja (Landika, M., Bojić, J., 2016).

Korištenje statističkih metoda u procjeni vrijednosti nepokretnosti zahtijevaju kompleksna izračunavanja koja podrazumijevaju nekoliko iteracija i mnogo vremena za procjenu, kao i snažnu računarsku podršku (Babić, R., Ozmec-Ban, M., Bajić, J., 2019).

Pristup rješavanju problema temeljen na rezultatima modela matematičkog programiranja oslobađa donosioca odluke od subjektivizma u procesu odlučivanja (Landika, M., Račić, Ž., 2021).

CAMA sistem se koristi u masovnoj procjeni vrijednosti nepokretnosti zbog objektivnosti u procjeni nepokretnosti. Prema (McCluskey, 2013) CAMA sistem koriste mnoge zemlje u svijetu. Navedimo neke: SAD, Velika Britanije, Kanada, Brazil, Rusija, Danska, Finska, Švedska.

U svom istraživanju (Wittowsky, D., Hoekveld, J., Welsch, J., 2020), navode da se klasična fraza agenta za nekretnine „lokacija, lokacija, lokacija“ ponovno pokazala kao ključni faktor koji objašnjava cijene stambenih nekretnina. Njihovo istraživanje pokazalo je da „lokacija” ne obuhvata samo okruženje stana u klasičnom smislu, već i stanare pored kojih se živi (bogatstvo i nacionalna pripadnost, primjedba autora ovog rada), prisutnost i dostupnost sadržaja kao što je javni prijevoz (tramvaj, metro, autobus...) i dostupnost autoputa. Osim toga, važnu ulogu igra i cijena stanova u okruženju u hedonističkom modeliranju cijena.

Iako na cijene nepokretnosti utiču krizne situacije (ratna dešavanja, pandemija korona virusa), postoji visok stepen pouzdanosti i povjerenja u predložena rješenja (Aleksić, J., landika, M., Barjaktarević, M., 2021).

Rezultati istraživanja (Trung, P.D., Quan, N.T.G., 2019) uticaja faktora na procjenu vrijednosti nepokretnosti, kao što su: prirodni, ekonomski (profitabilnost sa stanovišta iznajmljivanja ili prodaje), pravni, politički, tržišni (ponuda-tražnja, tržište rada, finansijsko tržište), makroekonomski faktori, na bazi višestruke regresione analize, pokazuju pozitivan, ali ne i statistički značajan, uticaj izabranih varijabli. Najveći uticaj na cijenu nepokretnosti imaju makroekonomski faktori, nakon njih pravni faktori zatim tržišni, politički, ekonomski i na kraju prirodni faktori.

Brojne poslovne odluke donose se na bazi intuicije a ne korištenjem naučnih metoda. Naučni pristup je neophodan, posebno u situacijama kada su pojave uslovljene brojim faktorima (nekada i nemjerljivim) koji nisu korišteni u procjeni a bitno utiču na nju (Laketa, M., Aničić, J., Laketa, L., 2016).

METODOLOGIJA ISTRAŽIVANJA

Masovna procjena ili masovna procjena pomoću računara (eng. Computer Asissted Mass Appraisal-CAMA) su termini koji se obično primjenjuju za procjenu vrijednosti nepokretnosti u svrhu oporezivanja nepokretnosti. Razvoj računskih tehnologija omogućava računarski podržane metode procjene vrijednosti svih nepokretnosti. CAMA predstavlja računarski algoritam za masovno i pojedinačno izračunavanje vrijednosti nepokretnosti. Upotreba izraza Tehnike procjene vrijednosti svih nepokretnosti uz pomoć računara definišu se kao sistemska procjena vrijednosti svih nepokrenosti na određeni dan primjenom standardizovanih procedura i statističkih testiranja.

CAMA aloritam se sastoji od nekoliko komponenti:

(1) Specifikacija modela (matematički oblik modela ili modela vrednovanja),

(2) Prodajne cijene i opisni podaci o nepokretnosti,

(3) Podaci o prihodima i rashodima i opisni podaci o nepokretnosti,

(4) Softver za kalibraciju modela (obično multivarijantna statistička metoda),

(5) Kalibrisani modeli (određena funkcija ulaznih podataka sa utvrđenim koeficijentima modela; matematički izraz za izračunavanje procjene vrijednosti),

(6) Atributi (osobine) koja se vrednuju (karakteristike potrebne modelu procjene u računarski čitljivom obliku),

(7) Softver za vrednovanje (softver za primjenu kalibrisanog modela na karakteristike ulaznih atributa, tako da se izrađuje procjena vrijednosti, kreira datoteka procjena i izrađuju definisani izveštaji ili se mogu proizvesti) i

(8) Procjene vrijednosti (datoteka ili baza podataka procjena vrijednosti).

CAMA sistemi se koriste u mnogim dijelovima svijeta od 1970-ih (Ujedinjeno kraljevstvo, Sjeverna Amerika). Slovenija se pridružila listi zemalja koje koriste sisteme procjene vrijednosti nepokretnosti potpomognute CAMA algoritmom. Treba naglasiti da se evropski model organizacije CAMA razlikuje od onog u Sjevernoj Americi. Dokazano je da CAMA algoritmu treba manje vremena za procjenu nepokretnosti i prilagođena je korisniku. U stanju je da izvrši složene proračune koje računar lako izvodi u poređenju sa tradicionalnim sistemom.

Aktivnosti i rezultati istraživanja u vidu funkcionisanja CAMA algoritma na analiziranom području predstavljeni su kroz teorijske osnove modela i primjeni modela. Iz Registra cijena nepokretnosti je izdvojeno je 525 kvalitetnih (obrađenih) transakcija (bez uočenih „outlayer-a“), za period od prvog kvartala 2018. god. do trećeg kvartala 2021. godine, što predstavlja oko 4,5% od Fonda stanova.

Model je zasnovan na metodi poređenja tržišta. Model se sastoji od slojeva vrijednosnih zona (lokacijski parametar) i vrijednosnih nivoa, vrijednosnih tabela, bodova, bodovnih razreda i faktora (faktor obnove i dr.), osobina dijelova zgrada, položaja stana u zgradi, ukupne površine dodatnih prostorija stana (kao što su teresa, lođa i/ili balkon) kao i udaljenost od objekata privredne infrastrukture. Vrijednosti u tabeli vrijednosnih nivoa su izražene za referentnu jedinicu za vrednovanje (procjenu vrijednosti). Referentna jedinica vrednovanja modela za stan ima slijedeće osobine: stvarna

upotreba (korišćenje, namjena), površina, period izgradnje, obnova ili ne krova, fasade, prozora, instalacija, postojanje lifta, položaj u zgradi, spratnost, blizina infrastrukturnih objekata. Svakoj vrijednosnoj zoni se dodjeljuje vrijednosni nivo. Vrijednost nivoa predstavlja vrijednost referentne jedinice unutar posmatrane vrijednosne zone, vrijednost stana i vrijednost garaže ili parking mjesta, ako postoji. Formula za izračunavanje procijenjene vrijednosti data je slijedećim izrazom:

$$V = VT \times F_{obn} \times F_{svoj} \times F_{dp} \times F_{pol} \times F_{ud}\,, \tag{1}$$

gdje je:
V = procjenjena vrijednost nepokretnosti,
VT = vrijednost iz tabele vrijednosti stana,
F_{obn} = faktor obnove,
F_{svoj} = faktor svojstva,
F_{dp} = faktor dodatog prostora,
F_{pol} = faktor položaja u zgradi,
F_{ud} = faktor uticaja oblasti – udaljenost.

Izračunavanje procjenjene vrijednosti nepokretnosti je iterativni proces. Sastoji se od 8 iteracija (koraka).

Prvi korak: Određivanje lokacije-vrijednosne zone i nivoa.

U zavisnosti od položaja zgrade u kojoj se nalazi posmatrani stan, određuje se odgovarajuća zona vrijednosti i dodijeljeni nivo vrijednosti. Vrijednosne zone i dodjeljeni nivoi modela vrednovanja za stan predstavljeni su lokacijom.

Drugi korak: Određivanje vrijednosti iz vrijednosne tabele za dio zgrade sa pripadajućim zemljištem na osnovu godine izgradnje i povšine.

Bira se vrijednosna tabela koja odgovara vrijednosnom nivou (određena u prvoj iteraciji). Ulazni podaci za određivanje vrijednosti iz vrijednosne tabele su godina izgradnje i površina. Na osnovu godine izgradnje i površine iz vrijednosne tabele određuje se vrijednost osnove i vrijednost za svaki dodatni m^2, koji se u množi sa površinom koja prelazi površinu osnove (razlika povšina). Vrijednost iz vrijednosne tabele dobija se sabiranjem vrijednosti za osnovu i vrijednosti za dodatni m^2.

Treći korak: Određivanje faktora obnove. Za definisanje veličine faktora obnove određuje se prosječna godina obnove dijela zgrade. Prosječna godine obnove računa se na osnovu slijedećeg izraza:

$$L_{obn} = U_{fasade} \times L_{fasade} \times U_{krova} \times L_{krova} \times U_{prozora} \times L_{prozora} \times U_{instalacije} \times L_{instalacije}\,, \tag{2}$$

gdje je:
L_{obn} = prosječna godina obnove,
U_{fasade} = težina za obnovu fasade,
L_{fasade} = godina obnove fasade,
U_{krova} = težina za obnovu krova,
L_{krova} = godina obnove krova,
$U_{prozora}$ = težina za obnovu prozora,
$L_{prozora}$ = godina obnove prozora,
$U_{instalacije}$ = težina za obnovu instalacija,
$L_{instalacije}$ = godina obnove instalacija.

Na osnovu broja vrijednosnih nivoa, godine izgradnje i prosječne obnove, faktor obnove se određuje iz odgovarajuće tabele obnove.

Četvrti korak: Određivanje faktora svojstva. Na osnovu podataka o pojedinačnom dijelu zgrade, vrijednost boda faktora svojstva se određuje na osnovu odgovarajuće tabele svojstava. Tabela svojstva je određena na osnovu stvarnog korišćenja dijela zgrade i broja stanova. Na osnovu postignutog boda, faktor svojstva se određuje u odgovarajućim klasama.

Peti korak: Određivanje faktora dodatnog prostora. Faktor dodatnog prostora se određuje prema stvarnom korištenju dijela zgrade, površini stambenog prostora i površini dodatnog prostora. Površina dodatnog prostora predstavlja zbir površina prostora otkrivene/otvorene terase, balkona, lođe i natkrivene/zatvorene terase, balkona, lođe.

Šesti korak: Određivanje faktora položaja stana u zgradi. Faktor položaja stana u zgradi se određuje kombinacijom položaja stana u zgradi i prisustva lifta.

Sedmi korak: Određivanje faktora uticaja oblasti – udaljenost. Faktor uticaja oblasti zavisi od područja uticaja objekata javne privredne infrastrukture (putevi, željeznice, dalekovodi). Ako postoji nekoliko uticaja na istu nepokretnost, tada se faktor udaljenosti određuje množenjem faktora uticaja pojedinih faktora, pri čemu se određuje najveći mogući uticaj ili najmanji mogući ukupni faktor.

Osmi korak: Izračunavanje procjenjene vrijednosti stana.

Korelacionom analizom su određeni najuticajniji parametri (faktori) a to su, pored lokacije, površina stana, godina izgradnje objekta, sprat stana i postojanje lifta (tabela 1).

Tabela 1: Korelacija analiziranih faktora

Korelacija	Površina	Cijena	Godina izgradnje	Sprat	Lift
Površina	1	-0.30	-0.03	0.08	-0.06
Cijena	-0.30	1	0.53	-0.18	0.21
Godina izgradnje	-0.03	0.53	1	-0.08	0.32
Sprat	0.08	-0.18	-0.08	1	0.34
Lift	-0.06	0.21	0.32	0.34	1

Izvor: Kalkulacija autora, 2024.

Navedeni parametri su korišćeni u modelu za formiranje cijene nepokretnosti. Mogu se modelovati i koristiti i drugi parametri (varijable, korektivni faktori): udaljenost od značajnih infrastrukturnih objekata, ukupan broj stanova u zgradi, renoviranje, kvalitet objekta i sl. Uticaj lokacije na vrijednost nepokretnosti može da varira, od 40 % u ruralnim područjima do 80 % u urbanim područjima. U ruralnim područjima kvalitet može da ima najveći uticaj.

Krenimo od definisanja analitičkih područja. Analitička područja su prostorne (geografske) zone izrađene na osnovu prostorne (tržišne) analize određene nepokretnosti i najčešće su zajednička za nepokretnosti slične namjene ili korišćenja kao što su stanovi, kuće i stambena (građevinska) zemljišta. Vrijednosne zone su vezane za model dok se analitička područja odnose na tržište. Za izdvojene transakcije (525) se

vrši vremensko-komparativno prilagođavanje na izabrani datum (30.09.2021. godine). Vremenskim prilagođavanjem se cijene transakcija tržišta prilagođavaju na datum 30.09.2021. godine, u odnosu na površinu i datum transakcije. Vremenski prilagođena (C_{VP}) cijena se dobija množenjem indeksa cijena (I) i cijene transakcije (C).

$$C_{VP} = C \cdot I \tag{3}$$

Indeks cijena se određuje iz linearne regresije u zavisnosti od površinske klase. Kreirane su četiri površinske klase (tabela 2) i svakoj transakciji je dodijeljena oznaka površinske klase.

Tabela 2: Površinske klase

Oznaka površinske klase	Površina [m²]			Broj transakcija
P1		<	44	131
P2	45	-	60	180
P3	61	-	75	118
P4		>	75	95

Izvor: Kalkulacija autora

Kreiranje vrijednosnih zona. Zona je geografsko područje gdje predmetne (slične) nepokretnosti imaju približno istu tržištu vrijednost. Predstavlja lokacijski parametar u modelu. Kod modeliranja u fazi vremenskog prilagođavanja transakcija uvijek se počinje sa preliminarnim zonama koje se kreiraju na osnovu poznavanja tržišta, fonda, geografskih granica. Prilikom određivanja („crtanja“) zona nastojalo se pridržavati principa: poznavanja tržišta i visine prosječnih vrijednosti stanova, lokacije (udaljenosti od centra), sličnosti strukture fonda objekata i geografskih (fizičkih) granica. Kontrolama zona i nivoa se može odrediti koje transakcije ne pripadaju određenoj zoni (vrijednost kontrole izvan dozvoljenog intervala, više u nastavku), isključiti ih ili pridružiti drugoj zoni, ili promijeniti granicu zone (iterativni postupci). Grafikon 1 daje prikaz prijedloga zona i vrijednosnih nivoa.

Izrada vrijednosnih tabela (vrijednosni nivoi i relacione tabele). Definišimo prvo vrijednosne nivoe i relacione tabele. Osnovna jedinica za formiranje cijene nepokretnosti je referentna nepokretnost. Referentna nepokretnost je najčešća nepokretnost određenih karakteristika u katastarskoj evidenciji ili na tržištu (najčešće se podudaraju). Na primjer, za stanove, osnovne karakteristike su površina i godina izgradnje, dok za kuće površina objekta i površina i stepen izgrađenosti pratećeg zemljišta. U našem primjeru, referentni stan je stan površine 57 m² izgrađen u periodu od 1970-1980. godine. Na osnovu cijena referentnog stana, razlike najviše i najniže cijene određuje se broj vrijednosnih nivoa a time i najmanji broj zona. Svaka zona ima svoj vrijednosni nivo. Nivo za svaku zonu odražava vrijednost referentnog stana u toj zoni.

Najniža cijena referentnog stana iznosi 75.000 KM dok najviša iznosi 130.000 KM (razlika iznosi 55.000 KM). Ukupno je određeno sedam (7) vrijednosnih nivoa. U nižim vrijednosnim nivoima su niže cijene stanova dok su u višim vrijednosnim nivoima više cijene stanova. Tabela 3 daje prikaz vrijednosnih nivoa.

Grafikon 1: Prikaz zona (poligoni) i vrijednosnih nivoa (brojevi, oznake)

Izvor: Registar cijena nepokretnosti, autor, 2024.

Tabela 3: Prikaz vrijednosnih nivoa

Oznaka vrijednosnog nivoa	Cijena referentnog stana [KM]	Razlika između nivoa [%]
1	75.000	
2	82.500	10,0
3	90.750	10,0
4	99.800	10,0
5	109.500	9,7
6	120.000	9,6
7	130.000	8,3

Izvor: Kalkulacija autora, 2024.

Izrada relacione tabele. Relaciona tabela (RT) definiše uticaj (odnos) površine i godine izgradnje na cijenu (C) ili vrijednost (V) nepokretnosti. Za izradu relacione tabele koristi se teorija uticaja, podaci tržišta i funkcije uticaja na osnovu analize prodaja i teorije uticaja. Relacione tabele se određuju za pojedinačne vrijednosne nivoe. Predstavlja 2D matricu (tabelu) definisanu površinskim klasama (redovi) i vremenskim periodima (kolone). Krajnji cilj je određivanje vrijednosnih tabela (Basic RT) koje su dio modela za formiranje cijene nepokretnosti. Do vrijednosnih tabela se može doći u četiri koraka: određivanje relacionih tabela po vrijednosnim nivoima, normalizacija relacionih tabela po vrijednosnim nivoima, 3. agregacija normalizovanih relacionih tabela svih vrijednosnih nivoa u jednu relacionu tabelu (Basic RT) i normalizacija koeficijenata relacione tabele, za potrebe izrade vrijednosnih tabela. Svakoj transakciji se dodjeljuje oznaka površinske klase i oznaka perioda izgradnje kome pripada. Korišće-

no je šest detaljnijih površinskih klasa (označenih[2] od 1-6) i devet (9) perioda izgradnje (označenih od 10-19). Prvi korak je određivanje broja transakcija (N), prosječne cijene (AVG_PRICE [KM]) i prosječne površine stana (AVG_SIZE [m^2]) po definisanim površinskim klasama i periodima izgradnje. Grafikon 2 daje prikaz relacione tabele za prvi vrijednosni nivo.

	KOLONE =>	10	11	12	13	14	15	16	17	18	19
	Površinske klase /	-	1945	1955	1965	1975	1985	1995	2005	2010	2015
REDOVI	Period izgradnje	1944	1954	1964	1974	1984	1994	2004	2009	2014	*
N 1	0 29	0	0	0	0	0	0	0	0	0	0
AVG(PRICE)		0	0	0	0	0	0	0	0	0	0
AVG(SIZE)		0	0	0	0		0	0	0	0	0
N 2	30 49	0	0	1	0		1	1	0	0	0
AVG(PRICE)		0	0	52734	0	74438	82342	58214	0	0	0
AVG(SIZE)		0	0	39	0	45	45	46	0	0	0
N 3	50 74	0				7	1	0	0	0	0
AVG(PRICE)		0	0	0	0	114418	12229	0	0	0	0
AVG(SIZE)		0	0	0	0	65	67	0	0	0	0
N 4	75 99	0	0	0	0	1	0	1	0	0	0
AVG(PRICE)		0	0	0	0	135363	0	17083	0	0	0
AVG(SIZE)		0	0	0	0	78	0	92	0	0	0
N 5	100 129	0	0	0	0	0	0	0	0	0	0
AVG(PRICE)		0	0	0	0	0	0	0	0	0	0
AVG(SIZE)		0	0	0	0	0	0	0	0	0	0
N 6	130	0	0	0	0	0	0	0	0	0	0
AVG(PRICE)		0	0	0	0	0	0	0	0	0	0
AVG(SIZE)		0	0	0	0	0	0	0	0	0	0

Grafikon 2: Prikaz relacione tabele za prvi vrijednosni nivo / VN = 1, V = 75 000 KM

Izvor: Kalkulacija autora, 2024.

Drugi korak je normalizacija vrijednosne tabele. Normalizacija vrijednosne tabele podrazumijeva da se prosječna cijena u relacionoj tabeli podijeli sa vrijednosti vrijednosnog nivoa. Na primjer (tabela iznad) prosječna cijena 74 438 KM za pet (5) transakcija u površinskoj klasi od 30 m^2 do 49 m^2 i perioda izgradnje od 1975-1984. godine se podijeli sa 75.000 KM i dobije se normalizovana vrijednost polja tabele 0,99 (Tabela 4).

Tabela 4: Prikaz normalizovane relacione tabele za prvi vrijednosni nivo

KOLONE =>	10	11	12	13	14	15	16	17	18	19
Površinske klase / 2015	-	1945	1955	1965	1975	1985	1995	2005	2010	
Period izgradnje 2014	-	1944	1954	1964	1974	1984	1994	2004	2009	
F_RT_11 0 29	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
F_RT_12 30 49	0,00	0,00	0,70	0,00	0,99	1,10	0,78	0,00	0,00	0,00
F_RT_13 50 74	0,00	0,00	0,00	0,00	1,53	1,63	0,00	0,00	0,00	0,00
F_RT_14 75 99	0,00	0,00	0,00	0,00	1,80	0,00	2,28	0,00	0,00	0,00
F_RT_15 100 129	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
F_RT_16 130 -	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Izvor: Kalkulacija autora, 2024.

[2] Proizvoljne oznake, površinske klase i periodi izgradnje.

Nakon određivanja relacione tabele određuje se vrijednosna tabela po nivoima. Koeficijenti relacione tabele se normalizuju za referentni stan (npr. ako je koeficijent u ćeliji različit od 1). S obzirom da je u modelu osnova referentni stan čiji je koeficijent naglašen, vrši se normalizacija koeficijenata tako da se svi koeficijenti podijele sa vrijednošću koeficijenta za referentni stan (0,9) i dobije tabela (tabela 5) normalizovanih koeficijenata za uticaj površine i godine izgradnje na cijenu nepokretnosti.

Tabela 5: Normalizovana tabela koeficijenata

Osnova površinske klase [m²] / period izgradnje	30	50	75	100	130
do 1944. god.	0,50	0,91	1,45	2,02	2,74
1945-1954	0,57	0,96	1,45	1,96	2,57
1955-1964	0,70	1,06	1,47	1,85	2,29
1965-1974	0,64	1,00	1,42	1,81	2,27
1975-1984	0,71	1,10	1,54	1,97	2,45
1985-1994	0,63	1,09	1,67	2,27	2,99
1995-2004	0,70	1,11	1,61	2,09	2,66
2005-2009	0,77	1,20	1,71	2,19	2,75
2010-2014	0,68	1,20	1,87	2,57	3,43
nakon 2015. god.	0,78	1,20	1,70	2,17	2,72

Izvor: kalkulacija autora, 2024

Vrijednosti u vrijednosnoj tabeli (tabela 6) se računaju tako što se normalizovani koeficijenti iz prethodne tabele množe sa vrijednošću referentnog stana u vrijednosnom nivou po površinskim klasama i periodima izgradnje. Referentni stan se nalazi u površinskoj klasi od 50 m² – 74 m² i periodu izgradnje od 1965-1974. godine i za prvi vrijednosni nivo (75.000 KM) se množi sa koeficijentom 1,0.

Tabela 6: Vrijednosna tabela sa osnovama

Površina [m²]		Period izgradnje	- 1944	1945 1954	1955 1964	1965 1974	1975 1984	1985 1994	1995 2004	2005 2009	2010 2014	2015 -
od	do											
-	29	osnova	0	0	0	0	0	0	0	0	0	0
		dodatni m²										
30	49	osnova	37624	42394	52526	48[illegible]	53620	47485	52510	57777	[illegible]	58308
		dodatni m²										
50	74	osnova	67950	71[illegible]	[illegible]	75000	82382	81572	83572	90029	89638	90178
		dodatni m²										
75	99	osnova	108634	109098	110051	106244	115844	125331	120851	128022	140242	127471
		dodatni m²										
100	129	osnova	151546	146793	138817	136024	147540	169978	157002	164350	192663	162952
		dodatni m²										
130	-	osnova	205305	192419	171561	170405	183951	224430	199324	206398	257383	203855
		dodatni m²										

Izvor: Kalkulacija autora, 2024.

Na primjer, za osnovu od 30 m^2 u prvom vrijednosnom nivou za objekat izgrađen nakon 2015. godine koristi se koeficijent 0,78 (Tabela 4) i množi sa vrijednošću referentnog stana od 75.000 KM. Na taj način se dobija vrijednost osnove od 58.308 KM (prethodna tabela). Na koji način se određuje vrijednost za stan od 35 m^2? Određuje se tako što se odredi vrijednost dodatnog kvadratnog metra u posmatranoj površinskoj klasi. Vrijednost pomnožena sa koeficijentom iz relacione tabele za dodatne kvadratne metre se linearizuje kako ne bi došlo do „probijanja“ cijena između površinskih klasa. Vrijednost dodatnog kvadratnog metra se određuje tako što se razlika vrijednosti osnova dvije susjedne površinske klase podijeli sa razlikom površina osnova susjednih klasa. Na primjer, ako se računa dodatni kvadratni metar za prethodni navedeni primjer, oduzme se vrijednost osnove 30 m^2 od vrijednosti osnove 50 m^2 (90.178 KM – 58.308 KM = 31.870 KM) i podijeli sa razlikom površina osnova (50 m^2 – 30 m^2 = 20 m^2). Dobije se vrijednost od 1.593 KM za dodatni kvadratni metar u drugoj površinskoj klasi za period nakon 2015. god. Ostale vrijednosti za dodatni kvadratni metar su prikazane u slijedećoj tabeli.

Tabela 7: Vrijednosna tabela sa osnovama i dodatnim kvadratnim metrima

Površina [m^2]		Period izgradnje	- 1944	1945 1954	1955 1964	1965 1974	1975 1984	1985 1994	1995 2004	2005 2009	2010 2014	2015 -
od	do											
-	29	osnova	0	0	0	0	0	0	0	0	0	0
		dodatni m^2	1254	1413	1751	1612	1787	1583	1750	1926	1700	1944
30	49	osnova	37624	42394	52526	48363	53620	47485	52510	57777	51003	58308
		dodatni m^2	1516	1471	1340	1332	1438	1704	1553	1613	1932	1593
50	74	osnova	67950	71806	79333	75000	82382	81572	83572	90029	89638	90178
		dodatni m^2	1627	1492	1229	1250	1338	1750	1491	1520	2024	1492
75	99	osnova	108634	109098	110051	106244	115844	125331	120851	128022	140242	127471
		dodatni m^2	1716	1508	1151	1191	1268	1786	1446	1453	2097	1419
100	129	osnova	151546	146793	138817	136024	147540	169978	157002	164350	192663	162952
		dodatni m^2	1792	1521	1091	1146	1214	1815	1411	1402	2157	1363
130	-	osnova	205305	192419	171561	170405	183951	224430	199324	206398	257383	203855
		dodatni m^2										

Izvor: Kalkulacija autora, 2024.

Modelovanje uticaja drugih faktora. Dodatni faktori djeluju korektivno na cijenu nepokretnosti i množe (ili dodaju) se sa procijenjenom cijenom transakcije, tako što se faktor najvećeg uticaja prvi množi (ili dodaje) a zatim ostali faktori manjeg uticaja. Dodatni uticajni parametri koji su korišćeni u formiranju cijene nepokretnosti su sprat stana i postojanje lifta u zgradi. Navedeni parametri su objedinjeni u jedan faktor – faktor položaja stana u zgradi, a mogu se koristiti i odvojeno. Takođe, može se pridružiti i neki drugi faktor (npr. ukupan broj stanova u zgradi, orijentacija stana, renovirano stubište kod starijih zgrada, postojanje parkinga/podruma u zgradi i sl.). Vrijednost faktora položaja stana u zgradi se određuje na osnovu bodovne tabele po razredima, na osnovu definisanih kriterijuma (bodovnika). Ove vrijednosti se određuju empirijski.

Tabela 8: Bodovnik kriterijuma

Opis	Bodovi
Nije u podrumu i ima lift	
Stan se nalazi u prizemlju, na prvom, drugom ili trećem spratu i ima lift	10
Stan se nalazi na 4. i višim spratovima a nije u potkrovlju i ima lift	8
Stan se nalazi u potkrovlju i ima lift	7
Na donjim spratovima i bez lifta	
Stan je u prizemlju do četvrtog sprata i nema lifta ili nema podataka o liftu	9
Viši spratovi i bez lifta	
Stan se nalazi na 4. i višim spratovima a nije u potkrovlju i nema lift	6
Stan se nalazi u potkrovlju i nema lift	4
Podrumski stan ili u suterenu	
Stan je u podrumu ili suterenu	2

Izvor: autor, 2024.

Na osnovu bodovnika, odrežujemo faktore za svaki bodovni razred (tabela 9).

Tabela 9: Određivanje faktora

Razred	Bodovi		Vrijednost faktora
	od	do	
1	0	3	0,9
2	4	7	0,95
3	8	10	1

Izvor: autor, 2024.

Iz navedene tabele se vidi da su za stanove od prizemlja do potkrovlja (ne uključujući potkrovlje) u zgradi sa liftom i stanovi koji se nalaze do četvrtog sprata (ne uključujući potkrovlje) u zgradi bez lifta ili bez podataka o liftu dodjeljuje faktor 1 i ne utiče na prethodno određenu procijenjenu cijenu (vrijednost) stana iz vrijednosne tabele. Za stanove koji se nalaze u suterenu ili podrumu, dodijeljen je najniži faktor (0,9) koji umanjuje procijenjenu cijenu (vrijednost) stana iz vrijednosne tabele za 10%. Za ostale stanove ostalih karakteristika je dodijeljen faktor 0,95. S obzirom da se faktori određuju empirijski, u skladu sa znanjima o uticaju na cijenu stana, moguće su i druge podjele (razredi i bodovi). Npr., može se koristiti veći faktor od 1 za prvu grupu stanova, na primjer 1,05 (dodatnih 5 % na procijenjenu cijenu stana).

Na osnovu vrijednosne tabele (uticaj lokacije, površine i godine izgradnje) i faktora položaja stana (sprat i postojanje lifta) se ponovo računa tržišna cijena stana koristeći jednačinu:

$$V_p = V_T \cdot F_{\text{položaja stana u zgradi}} \tag{4}$$

gdje su:
V – tržišna cijena stana,
V_T – cijena (vrijednost) stana iz vrijednosne tabele i
F – faktor uticaja položaja stana u zgradu.

Koristeći prethodnu formulu možemo izračunati procijenjenu tržišnu cijenu analiziranih stanova. Od 525 analiziranih stanova izdvojili smo 29 i njihova procijenjena vrijednost je data u tabeli 10.

Tabela 10: Procijenjena vrijednost nepokretnosti

Stanovi	Cijena iz notarskog ugovora (A)	Procijenjena vrijednost CAMA algoritam (B)	Koeficijent (A/ B)	Odstupanje
3.	100000	114878	0.87049	+
24.	80000	81081	0.98667	+
76.	70000	78801	0.88831	+
83.	80000	83850	0.95408	+
88.	70000	77091	0.90801	+
98.	70000	70723	0.98978	+
102.	80000	86683	0.92290	+
124.	70000	76383	0.98978	+
145.	80000	87592	0.91332	+
169.	110000	139280	0.78977	-
188.	88000	86472	1.01767	+
199.	50000	60865	0.82149	+
209.	70000	76246	0.91808	+
217.	85000	98141	0.86610	+
266.	125000	130825	0.95547	+
277.	92000	95023	0.96818	+
289.	92000	85622	1.07449	+
297.	97000	92078	1.05345	+
300.	69350	82078	0.84493	+
311.	71500	74989	0.95348	+
323.	111300	115794	0.96119	+
344.	41000	52222	0.78511	-
355	72500	80541	0.90016	+
368.	64000	72021	0.88863	+
389.	77000	92400	0.83333	+
453.	82900	90167	0.91940	+
487.	90000	103405	0.87036	+
511.	72000	80541	0.89395	+
524.	85000	86472	0.98298	+

Izvor: kalkulacija autora, 2024

DISKUSIJA

Rezultati istraživanja pokazuju da primjenom CAMA algoritma dolazimo do fer procjenjene vrijednosti. Odstupanja koja su dozvoljena standardima u Europskoj uniji

i svim zemljama koji promjenjuju ovaj agoritam iznose +/- 20 % od cijene u notarski ugovorima. Na uzorku od 525 analiziranih stanova u Republici Srpskoj, predstavljeno je (slučajnim izborom) 29 stambenih jedinica. U tabeli 9 vidimo da samo 2 procijenjene vrijednosti negativno odstupaju od cijene iz notarskog ugovora, što je izvrstan rezultat.

Problem u ovom, kao i u sličnim istraživanjima, je u kvaliteti podataka i varijablama čiji uticaj određuje cijene nepokretnosti. Ovaj problem je riješen tako da su korišteni podaci u istraživanju testirani tzv. modelom A i Modelom B. Na ovaj način su sve vrijednosti tzv outlajeri, eliminisani iz analize.

ZAKLJUČAK

Održivo i transparentno tržište i upravljanje nepokretnostima, u skladu sa standardima EU, vode do bržeg ekonomskog razvoja i povećanja investicija. Masovna procjena vrijednosti nepokretnostima sve više postaje nacionalna potreba bez koje se ne može postići efikasno upravljanje nepokretnostima. Prisutan je subjektivizam istraživača kod procjene vrijednosti nepokretnostima. Zbog toga sve više se koriste računarski podržani algoritmi koji doprinosi objektivnim procjenama. CAMA algoritam se primjenjuje u svim razvijenim zemljama. Zbog svoje interkopatibilnosti na različitim platformama omogućava laku primjenu i razne modifikacije.

Specifičnost formiranja procjenjene vrijednosti nepokretnosti ogleda se u definisanju tržišne vrijednosti nepokretnosti ako su poznate cijene iz kupoprodajnih ugovora koji se upisuju u Registar cijena nepokretnosti (formirane na osnovu ponude i tražnje za stanovima), formiranja vrijednosnih zona (lokacijski faktor), vrijednosnih tabela (relacione tabele i vrijednosni nivoi), dodatnim faktorima uticaja (faktor položaja stana u zgradi) i jednačine za procjenu vrijednosti nepokretnosti.

Rezultati ovog istraživanja mogu biti korisni Republičkoj upravi za geodetske i imovinsko-pravne poslove Republike Srpske da akterima na tržištu nepokretnosti pruži relevantne i pouzdane informacije radi pravednijeg oporezivanja imovine ili prava na nepokretnostima, što će biti preduslov za Bosnu i Hercegovinu tokom pristupanju EU.

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APPLICATION OF THE CAMA ALGORITHM IN MASS PROPERTY VALUATION IN THE REPUBLIC OF SRPSKA

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Summary: *The real estate market is an integral part of the economic development of every country and contributes to promoting investments, production, increasing income, as well as socio-economic stability. Every country strives to achieve stability in the real estate market. The most important factor in the stability of the real estate market is real estate prices. Real estate prices determine the general well-being of citizens. They also affect the operations of banks (through mortgages, sales, etc.). It is extremely important to stabilize real estate prices. Only in this way is it possible to implement policies and macroeconomic measures that will make the real estate market an efficient segment of the overall socio-economic system. For all these reasons, it is very important to accurately assess real estate prices. Mass appraisal or Computer-Assisted Mass Appraisal (CAMA) are terms usually applied for the valuation of real estate for property taxation purposes. The development of computational technologies enables computer-supported methods for valuing all properties. CAMA represents a computer algorithm for the mass and individual calculation of real estate values. The use of the term Computer-Assisted Mass Appraisal techniques is defined as the systematic assessment of the value of all properties on a given date using standardized procedures and statistical testing. The CAMA algorithm consists of several components: Model specification (mathematical form of the model or valuation model); Sales prices and*

descriptive property data; Income and expense data and descriptive property data; Model calibration software (usually multivariate statistical methods); Calibrated models (a function of input data with established model coefficients; a mathematical expression for calculating the estimated value); Attributes (characteristics required by the appraisal model in a computer-readable form); Valuation software (software for applying the calibrated model to the characteristics of input attributes to create value estimates; creating an estimate file and generating defined reports or producible); Value estimates (file or database of value estimates). The goal of this research is to estimate the value of real estate using the mass appraisal method - the CAMA algorithm. The specificity of forming the estimated value of real estate lies in defining the market value of real estate if the prices from sales contracts entered into the Real Estate Price Register (formed based on supply and demand for apartments) are known, forming value zones (location factor), value tables (relational tables and value levels), additional influence factors (apartment location factor within a building), and an equation for estimating real estate value. The research results show that deviations between notarial contract prices and estimated values correspond to the standards applied in mass real estate value appraisal in all countries that implement them.

Keywords: *CAMA algorithm, mass property valuation, value zones, relational tables.*

JEL classification: *C44, C51, C61, H31.*

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ENTERPRENEURIAL INNOVATIVENESS AS A FACTOR OF SUCCESS ENTERPRENEURIAL BUSINESS PERFORMANCE

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Abstract: *Innovativeness is a key entrepreneurial orientation needed to successfully develop products and services to face continuous change and uncertainty. Entrepreneurial innovativeness can, to some extent, improve the ability of the entrepreneur to identify and develop opportunities, which will significantly improve their business performance. Therefore, it is necessary to determine how much and what the contribution of entrepreneurial innovation is to two types of business performance - financial performance and innovation performance. The research was conducted on the example of 40 entrepreneurs in central Serbia who introduced at least one kind of innovation in their business. The paper aims to identify the contribution of entrepreneurial innovativeness to entrepreneurial business performance in central Serbia. To test the hypotheses, regression analysis was applied. The results indicate a positive contribution of entrepreneurial innovativeness to financial performance and innovation performance. Results also indicate the need for additional improvement of the innovative activities of the observed entrepreneurs.*

Keywords*: entrepreneurship, entrepreneurial innovativeness, innovation performance, financial performance*

JEL Classification: *O30, O39, L26*

INTRODUCTION

In scientific and economic circles, the sector of small and medium-sized enterprises (SMEs), including entrepreneurs, greatly contributes to socio-economic development (Al Mamun & Fazal, 2018; Pavlović, Rašković-Depalov, & Milovanović, 2023). Ndzana & Mvogo (2024) add that the growth dynamics of the SME sector are

becoming decisive for global economic development. The results of the development of the SME sector show that these companies create 90% of global value and employ 75% of the workforce (Ndzana & Mvogo, 2024). This sector has a great development potential that needs to be nurtured and further improved. What should be emphasized is that the performance of SMEs is significant for emerging countries, due to competitiveness in the international market (Grujić, 2023; Ndzana & Mvogo, 2024). Small businesses in emerging countries emphasize flexibility, better satisfaction, awareness of consumer needs, innovation, and creativity as their main competitive advantages.

Entrepreneurs and their firms compete with larger companies in a competitive environment through product innovation and product competitiveness (Ng & Kee, 2018; Ognjanović & Slavković, 2022). Innovativeness can be defined as the capacity to produce a valuable innovation based on which it is predicted whether the entrepreneur will be successful (Stauffer, 2016). Entrepreneurial innovativeness can, to some extent, improve the ability of the entrepreneur to identify and develop opportunities, which will significantly improve their business performance (Huang, Li, Wang, & Li, 2022). Accordingly, an entrepreneur is a person who solves problems, sets goals, and makes an effort to achieve them, and a person who is imaginative while looking for different approaches to improve performance (Anwar & Saleem, 2019). Consequently, the paper aims to identify the contribution of entrepreneurial innovativeness to entrepreneurial business performance in central Serbia.

Several research gaps have been identified in the literature. First, many studies have considered innovativeness as the most important entrepreneurial orientation (Al Mamun & Fazal, 2018), important for the success of a new business (Kropp, Lindsay, & Shoham, 2008). Previous research has highlighted various factors that affect innovation such as size, R&D investment and activity, teamwork, innovative company culture, entrepreneur personality, and technology adoption (Becker, Escoz Barragan, Huge sive Huwe, Ernst, & Strina, 2023). However, previous studies have not investigated in detail how entrepreneurial innovativeness fosters innovation development (Nguyen, Nguyen, & Nguyen, 2023). Another reason for studying this relationship is that the literature on entrepreneurship has proven that entrepreneurial success is significantly influenced by the entrepreneur's personality (Becker, Escoz Barragan, Huge sive Huwe, Ernst, & Strina, 2023). As the entrepreneur is the dominant decision-maker in the firm, the personality characteristics of the entrepreneur, especially innovativeness, are important for making appropriate decisions (Nguyen, Nguyen, & Nguyen, 2023). Accordingly, the paper will examine entrepreneurial innovation and how it affects entrepreneurial business performance. Second, previous research points to the contribution of entrepreneurial innovativeness to innovation performance (Nguyen, Nguyen, & Nguyen, 2023). It has been proven that entrepreneurial competence affects business performance (Rehman, Elrehail, Nair, Bhatti, & Taamneh, 2023), but there is little research on the role of entrepreneurial innovativeness as a driver of entrepreneurial performance (Huang, Li, Wang, & Li, 2022). Yodchai, Ly & Tran (2022) add that not enough is known about the relationship between creative thinking and entrepreneurial success. Accordingly, it is necessary to investigate the contribution of entrepreneurial innovativeness to business performance. Third, previous studies have dealt with business success factors mainly of large enterprises and multinational companies, while studies on SMEs in emerging countries are mostly limited (Ng & Kee, 2018).

This aspect of research especially gives value to the paper since the development potentials of developing countries are limited and the use of innovative opportunities is a way to become competitive in the market, even with companies from developed countries. Accordingly, the research should answer the following research questions:

- What is the contribution of entrepreneurial innovativeness to the entrepreneur's financial performance?
- What is the contribution of entrepreneurial innovativeness to the entrepreneur's innovation performance?

The contribution of the paper is twofold. First, the research analyzes entrepreneurial innovativeness as an important orientation of small and flexible companies, especially in emerging countries, which so far have not been recognized as creators of radical innovations. This orientation has not been sufficiently analyzed in the previous literature. Second, the study investigates the relationship between entrepreneurs' innovative orientation and business results, directly pointing to the importance of innovativeness as a means by which entrepreneurs can better position themselves in the market and increase their business performance. Previous research has focused on investigating this relationship, but mostly in large companies.

LITERATURE OVERVIEW

Innovation as entrepreneurship orientation

One of the key aspects of an entrepreneurial mindset is an entrepreneurial orientation that encompasses a wide range of actions by individuals to create, develop, and manage new ventures (Becker, Escoz Barragan, Huge sive Huwe, Ernst, & Strina, 2023). Entrepreneurial orientation "refers to the processes, practices, and decision-making activities used by entrepreneurs that lead to the initiation of an entrepreneurial firm" (Kropp, Lindsay, & Shoham, 2008, p.104). Many studies have looked at innovativeness as one of the key elements of entrepreneurial orientation (Al Mamun & Fazal, 2018; Kropp, Lindsay, & Shoham, 2008). Research shows that innovativeness is a major behavior of entrepreneurs (Jaziri & Miralam, 2023) which primarily depends on the knowledge, experience, and commitment of the entrepreneur in the value creation process (Rubel, Kee, & Rimi, 2023). Innovation "is required for product/market development in these environments to deal with the continuous change and uncertainty" (Kropp, Lindsay, & Shoham, 2008, p105). Orientation towards the development of innovation allows the entrepreneur to modify, regenerate existing ideas, and accept changes (Rubel, Kee, & Rimi, 2023) through the development of innovations. Research shows that entrepreneurial innovativeness stems from entrepreneurial competence (Ng & Kee, 2018) as well as entrepreneurial experience (Vaillant & Lafuente, 2019). Therefore, it can be concluded that the "innovative entrepreneur is the root of the uniqueness of entrepreneurial activities" that help him to progress and survive in the changing environment of emerging countries (Nguyen, Nguyen, & Nguyen, 2023, p.115).

From an innovation-based perspective, "entrepreneurs are seen as innovators who integrate organizational resources to create innovations toward pursuing market opportunities and firm performance" (Yodchai, Ly, & Tran, 2022, p.284). This also supports the human resource view according to which creative and innovative entre-

preneurs improve the operating results of their firms (Yodchai, Ly, & Tran, 2022). With the help of the resource-based view, creativity and innovation can be explained as individual, specific abilities that contribute to the creation of competitiveness for entrepreneurs (Al Mamun & Fazal, 2018). According to the resource-based view, Al Mamun & Fazal (2018) believe that innovation can improve business results.

We can define innovation from the aspect of the organization and the aspect of the individual. Innovative organizations are looking for "new opportunities and solutions that require experimentation and creativity in the invention of new products and services or improvement in technical aspects of existing products and services" (Al Mamun & Fazal, 2018, p.382). Ng & Kee (2018) view innovation as the overall innovative ability of an organization to produce new products for the market, by "combining strategic orientation with innovative behavior and process" (p.255). In addition, innovative organizations are also focused on building "technological leaders" firms on the market and developing new processes (Kropp, Lindsay, & Shoham, 2008).

Entrepreneurial innovativeness describes "innovative behavior, such as the daily effort to improve one's work procedures" (Rubel, Kee, & Rimi, 2023, p.1284). For Huang, Li, Wang & Li (2022), entrepreneurs' innovativeness is "how entrepreneurs support change and thus provide firms with a competitive advantage, including support for new products, services, and technology development" (p.2). Therefore, entrepreneurial innovativeness is "a psychological trait that refers to the perception of entrepreneurs in terms of possession, creation, adoption, or implementation of new ideas or solutions in combating existing problems within their" firms (Nguyen, Nguyen, & Nguyen, 2023, p.115).

Entrepreneurial firms must, on the one hand, innovate and add value to their products or services to improve business performance. On the other hand, the same firms must cooperate and focus on core competencies to achieve efficiency (Ng & Kee, 2018). Orientation towards innovative behavior is the only way for an entrepreneur to survive in a changing environment and to use its advantages - flexibility, better satisfaction of consumer needs, and innovation. Numerous studies indicate that the orientation of entrepreneurs towards innovation affects the survival and growth of entrepreneurial firms (Nguyen, Nguyen, & Nguyen, 2023), but also change social and economic structures (Huang, Li, Wang, & Li, 2022). Consequently, the role of entrepreneurial innovativeness in improving business performance will be further considered.

Entrepreneurial innovativeness and business performance

A creative entrepreneur leads the firm in such a way that it faces and effectively responds to various institutional challenges according to its entrepreneurial capabilities (Nguyen, Nguyen, & Nguyen, 2023). Long & Dong (2017) state that not all entrepreneurial opportunities are the same - the difference lies in the degree of innovation. To obtain satisfactory results, Ndzana & Mvogo (2024) suggest that effective management of innovation requires examining the relationship between the firm's innovation capacity and their performance.

Business performance is a "multidimensional construct that encompasses a firm's operational and financial outcomes" (Al Mamun & Fazal, 2018; Mitrović, Knežević, & Milašinović, 2021; Radivojević, Dimovski, & Mitić, 2023). Innovation performance and financial performance will be observed in the paper. Financial per-

formance can be defined as "the ability of an organization to successfully achieve its financial targets as measured against its outputs" (Ahmed, Hassan, & Magar, 2024). Innovation performance indicates the results of the entrepreneur's innovative abilities, i.e. the entrepreneur's ability to take advantage of perceived chances and opportunities on the market. Innovation performance includes "different components, in which developing new products is considered a primary factor because these activities reflect the interaction between firms and marketable outputs" (Nguyen, Nguyen, & Nguyen, 2023, p.117). The improvement and innovation in technology and processes are also an integral part of innovation performance (Nguyen, Nguyen, & Nguyen, 2023).

The results of previous research emphasize the importance of innovativeness in entrepreneurial ventures. It has been proven that innovation is influenced by: technology adoption (Becker, Escoz Barragan, Huge sive Huwe, Ernst, & Strina, 2023); personality traits of entrepreneurs (Becker, Escoz Barragan, Huge sive Huwe, Ernst, & Strina, 2023); "emotional intelligence, internal locus of control, entrepreneurial alertness, and entrepreneurial self-efficacy" (Jaziri & Miralam, 2023, p.1). Vaillant & Lafuente (2019) conclude that "practical experience is an essential prerequisite for entrepreneurial learning" (p.2882). Similar results are reached by Long & Dong (2017), emphasizing that successful entrepreneurial experience influences the initiation of new ventures, while relevant industry experience and innovativeness of entrepreneurial opportunities negatively influence the initiation of ventures. On the other hand, Kropp, Lindsay & Shoham (2008) conclude that innovativeness is not a decisive factor in starting a start-up. Additionally, Yodchai, Ly & Tran (2022) prove that the creative mindset leads to entrepreneurial success through innovative capability. It can be concluded that the orientation of entrepreneurs toward the creation of innovative capacities will create an organizational culture and learning, which will lead to sustainable business performance (Yodchai, Ly, & Tran, 2022).

The literature also points to the relationship between innovation orientation and the financial performance of entrepreneurship. Yodchai, Ly & Tran (2022) state innovation capability is a significant factor in the entrepreneur's business performance. Al Mamun & Fazal (2018) conclude that creativity and innovation have a positive effect on entrepreneurial competencies, which has a positive effect on the performance of entrepreneurs. Ndzana & Mvogo (2024) conclude that the formality of SMEs "positively moderates the relationship between innovation and the performance of businesses in the case of product and commercial innovations" (p.350). Ng & Kee (2018) prove the importance of the relationship between innovativeness and firm performance as well as between entrepreneurial and technical competence and innovativeness. Research by Davis, Marino & Vecchiarini (2013) shows that there is "a negative relationship between innovativeness and short-term financial performance" (p.147). The same results are reached by Shah & Ahmad (2019) stating that innovativeness does not lead to significant changes in SME performance in Pakistan. As the literature shows the different nature of the relationship between innovativeness and financial performance, it is necessary to examine the following research hypothesis:

H1: *Entrepreneurial innovativeness positively contributes to financial performance of entrepreneurs.*

The contribution of entrepreneurial innovativeness to innovation performance is also shown by the results of previous research. Yodchai, Ly & Tran (2022) state

that firms that develop innovation activities influence the growth of innovation performance. Innovativeness "reinforces and stimulates innovative behaviors that may yield new products, services, or processes" (Rubel, Kee, & Rimi, 2023, p.1285). Nguyen, Nguyen & Nguyen (2023) prove that the entrepreneur's education and ethnicity influence his innovation and have an indirect influence on innovation performance in SMEs in Vietnam. Rubel, Kee, & Rimi (2023) concluded that innovativeness influences employees to exhibit technology innovation performance. Jianga, Wanga, Zhangc & Liud (2023) concluded that individual motivation positively promotes innovation performance. They also concluded that "innovation climate moderates the relationship between innovative behavior and innovation performance" (Jianga, Wanga, Zhangc, & Liud, 2023, p.1). Considering the contribution of innovativeness to the creation of innovation performance, it is necessary to examine the following research hypothesis:

H2: *Entrepreneurial innovativeness positively contributes to the innovation performance of entrepreneurs.*

SAMPLE DESCRIPTION AND RESEARCH INSTRUMENT

Data collection, measurement, and sample description

The sample includes 40 entrepreneurs who did business in the territory of central Serbia in the first quarter of 2024. This region of Serbia was chosen because the reports (Statistical office of the Republic of Serbia, 2022) indicate the growth of the number of companies, the development of employment and the growth of changes in the last few years. Respondents had to meet one of the criteria (Ministry of Economy of the Republic of Serbia, 2021):

- That they have introduced at least one product/service innovation in their production program in the last three years;
- That they introduced at least one innovation in the business process in the last three years;
- That they have achieved cooperation with other companies or institutions regarding innovative activities in the last three years.

To collect the data needed for hypothesis testing, a questionnaire was used. A questionnaire was sent to 504 email addresses of entrepreneurs, of which 40 were returned, so the response rate is 7.94%.

The questionnaire consists of three parts. The first part of the questionnaire includes the socio-demographic characteristics of entrepreneurs and their firms needed to describe the observed sample. The second part of the questionnaire includes statements related to entrepreneurial innovativeness. Items for the innovation assessment are defined based on the paper of Anwar & Saleem (2019) and Al Mamun & Fazal (2018). The third part of the questionnaire consists of observed business performance - innovation performance and financial performance. Items for innovation performance are defined based on the paper of Mardani, Nikoosokhan, Moradi, & Doustar (2018) and Alalwan, Baabdullah, Mahfod, Jones, Sharma, & Dwivedi (2022). Items for financial performance are defined based on the paper of Khan, Nisar, Nasir, Nasir & Siddiqui (2022).

The sample was observed by criteria: company size, number of employees, and years of work experience of entrepreneurial. The sample is dominated by micro firms (77.5%), while small firms make up 20% of the sample and medium-sized firms 2.5% of simple. The largest number of observed entrepreneurs employ "from 1 to 5 employees" (62.5%), followed by entrepreneurs who employ "from 6 to 10 employees" (27.5%), and entrepreneurs with "over 11 employees" make up 10% of the sample. The largest number of observed entrepreneurs have more than 16 years of work experience in the business they are currently engaged in (60%). Next are entrepreneurs "from 11 to 15 years of work experience" (20%), "from 6 to 10 years of work experience" (15%) and "from 1 to 5 years of work experience" (5%). It can be concluded that this structure of respondents is suitable for research, since entrepreneurs with many years of work experience dominate.

RESULTS

Descriptive statistics

The results of descriptive statistics are shown in Table 1. The observed entrepreneurs rated the variable Entrepreneurial innovativeness on average (Mean=3.288). Innovation performance has a higher mean compared to Financial performance (Mean=2.975). The standard deviation is the highest for the value of Entrepreneurial innovativeness (St. Dev=1.189).

Table 1. Descriptive statistics

Variables	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	St. Error	Statistic	St. Error
Entrepreneurial innovativeness	3.288	1.189	-0.241	0.374	-0.880	0.733
Innovation performance	3.588	0.962	-1.141	0.374	1.213	0.733
Financial performance	2.975	1.164	-0.395	0.374	-0.493	0.733

Source*:* Author's research, 2024.

Skewness values have negative and positive values for observed variables, which is the same case with kurtosis values.

The normality of the distribution was testing by the Shapiro-Wilk test since the sample is smaller than 50 observed entrepreneurs. For the observed variables, the value of this test indicates a normal distribution of the data.

Correlation analysis

Correlation analysis is based on observing the direction and strength of the relationship between the observed variables. The results of the correlation analysis are shown in Table 2.

Table 2. Results of correlation analysis

Variables	Entrepreneurial innovativeness	Innovation performance	Financial performance
Entrepreneurial innovativeness	1		
Innovation performance	0.334*	1	
Financial performance	0.306*	0.643**	1

Source*:* Author's research, 2024.

The results of the correlation analysis indicate the presence of a strong, positive and statistically significant correlation between innovation performance and financial performance (ρ=0.643; p=0.000). A medium, statistically significant and positive correlation was observed between the dependent and independent variables. This means that the growth of entrepreneurial innovation conditions the growth of observed business performance.

Reliability analysis

Further analysis involves testing the reliability of the statements used. The assessment is based on the value of Cronbach's alpha coefficient, and the results are shown in Table 3. The recommended value of Cronbach's alpha coefficient for the observed findings should be greater than 0.7 (Nunnally, 1978).

Table 3. Reliability analysis

Variables	Value of coefficient Cronbach's alpha
Entrepreneurial innovativeness	0.774
Innovation performance	0.881
Financial performance	0.968

Source*:* Author's research, 2024.

Cronbach's alpha coefficient values for each variable individually range from 0.968 (Financial performance) to 0.774 (Entrepreneurial innovativeness). Such results indicate the reliability of all analyzed variables.

Regression analysis

The application of regression analysis implies the application of a test for checking multicollinearity and autocorrelation. To check multicollinearity, the Variance inflation factor (VIF) will be used, the allowed value of which is lower than 2.5 (Ramirez, Dieguez-Soto, & Manzaneque, 2021). For the observed regression models, the VIF is 1.446, which means that multicollinearity is not a problem for conducting regression analysis. Autocorrelation is monitored through the Durbin-Watson coefficient, which should have a value lower than 4 for the observed regression models. In the case of the first regression model, the DW is 1,588, while for the second it is 1,520, which means that this condition for conducting the regression analysis is also fulfilled.

Table 4 shows the results of the regression analysis for the impact of entrepreneurial innovativeness on financial performance. It can be concluded that hypothesis

H_1 is accepted, that is, entrepreneurial innovativeness positively contributes to the financial performance of entrepreneurs (p=0.053).

Table 4. Model 1 – Entrepreneurial innovativeness and financial performance

Independent Variables	Standard regression model		
	β	t-value	Sig.
Entrepreneurial innovativeness	0.306	1.981	0.053

Dependent variables: Financial performance
*Significant: ** $p \leq 0.01$; * $p \leq 0.055$*
DW =1.588
$R^2 = 0.306$
F = 3.925
p = 0.053

Source*:* Author's research, 2024.

The coefficient of determination (R^2) or the observed model is 0.306, which means that 30.6% of the variability of financial performance is explained by the regression model, while the rest is influenced by other factors. Based on the value of the β coefficient, it can be concluded that the improvement of entrepreneurial innovativeness by 1 unit of standard deviation leads to financial performance growth by 0.306 units.

Table 5 shows the results of the second regression model. Based on the presented results, it can be concluded that hypothesis **H_2 is accepted**, i.e. entrepreneurial innovativeness positively contributes to the innovation performance of entrepreneurs.

Table 5. Model 2 – Entrepreneurial innovativeness and innovation performance

Independent Variables	Standard regression model		
	β	t-value	Sig.
Entrepreneurial innovativeness	0.334	2.181	0.035

Dependent variables: Innovation performance
*Significant: ** $p \leq 0.01$; * $p \leq 0.05$*
DW =1.520
$R^2 = 0.334$
F = 4.756
p = 0.035

Source: Author's calculation, 2024.

The coefficient of determination (R^2) for the second observed model is 0.334, which means that 33.4% of the innovation performance variability is explained by the regression model, while other factors influence the rest. Based on the achieved value of the β coefficient, it can be concluded that the improvement of entrepreneurial innovativeness by 1 unit of standard deviation leads to the growth of innovation performance by 0.334 units.

DISCUSSION

The research results provided answers to the research questions. First, the study confirmed the impact of entrepreneurial innovativeness on the entrepreneur's financial

performance, which has also been proven in studies by Al Mamun & Fazal (2018) and (Ng & Kee, 2018). The obtained results indicate that entrepreneurial firms must be able to innovatively use tools, procedures and processes in their specialized fields in order to achieve satisfactory business results (Ng & Kee, 2018). These results are consistent with the conclusion of Ng & Kee (2018) that innovation is the most important tool used by entrepreneurial firms as well as the use of key competencies to produce superior performance. Valenza, Balzano, Tani & Caputo (2023) add that innovation is a "determinant element of corporate strategies as it stimulates more productive manufacturing processes and greater financial performances, and contributes to the creation of positive reputations among consumers" (p.90). The fact is that entrepreneurial firms are limited by time and resources but have the flexibility and agility to adapt and innovate. (Ng & Kee, 2018). To promote an innovative approach, entrepreneurs must invest in improving the skills of employees, promoting creative thinking, directing towards an innovative culture and learning orientation, in order to increase innovation and ultimately achieve better financial performance (Ng & Kee, 2018). Entrepreneurs should be careful in these activities because they cause a lot of costs and the financial results can sometimes be unsatisfactory due to improper commercialization of ideas and innovations (Shah & Ahmad, 2019).

The results of the study confirmed the second hypothesis - entrepreneurial innovativeness positively contributes to the innovation performance of entrepreneurs. Nguyen, Nguyen & Nguyen (2023) and (Rubel, Kee, & Rimi, 2023) came to the same results. Such results Nguyen, Nguyen & Nguyen (2023) explain that entrepreneurs with a high level of innovation can create an open atmosphere in companies, perform work activities in a creative and innovative way. Innovative entrepreneurs are "characterized by high level of openness and extrovert (Nguyen, Nguyen, & Nguyen, 2023, p.126), which is also the driver of the creation of new ideas. Entrepreneurs with higher innovation motivation may be more enthusiastic to participate in innovation and more willing to carry out innovative activities to achieve good results (Jianga, Wanga, Zhangc, & Liud, 2023). Along with the development of entrepreneurial motivation, other employees are also encouraged to apply innovative practices, to share new knowledge and improve team performance (Jianga, Wanga, Zhangc, & Liud, 2023). With the development of entrepreneurial motivation, entrepreneurs improve their abilities and achievements in research and development, have more positive perceptions about innovation, implement more innovative behavior, which is positively reflected in innovation performance (Jianga, Wanga, Zhangc, & Liud, 2023).

PRACTICAL IMPLICATIONS

The results of the research can be useful, first of all, to entrepreneurs, since they indicate a moderate degree of development of innovativeness as one of the forms of entrepreneurial orientation. This orientation should be strengthened in the coming period. Without innovation, seeking new opportunities and improving products and processes, small businesses can hardly survive. Secondly, these results should be an alarm for all business associations, in the sense that they should find adequate mechanisms that will encourage the feasibility and financing of innovative entrepreneurial projects.

RESEARCH LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The limitations of the research are twofold. First, sample size is a limiting factor. However, the paper analyzes only innovative entrepreneurs - firms that introduced one of the following three types of innovation: product/service innovation, business process innovation, or cooperation with other innovative companies. This criterion significantly reduces the number of firms that can be part of the sample. The second limitation refers to the components of entrepreneurial innovativeness. The research would have been more comprehensive and would have indicated the innovativeness limitations if it had included the components of entrepreneurial innovativeness. However, the literature review did not reveal that this variable is observed through specific components.

Future research could be based on the observation of entrepreneurial innovativeness through the appropriate components. It would be useful to analyze the impact of entrepreneurial innovativeness on the dimensions of innovation performance - innovation product/service and process innovation. Also, it would be convenient to analyze the orientation of entrepreneurs towards radical or incremental innovations and, based on that, determine what is more dominant and profitable in the entrepreneurial sector of Serbia.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

ECONOMIC ASPECTS OF THE CHARACTER AND WORK OF IVANA BRLIĆ MAŽURANIĆ IN THE FUNCTION OF DEVELOPMENT OF COMPETITIVE CULTURAL AND TOURIST PRODUCTS OF THE TOURIST AREA "SLAVONSKI BROD - POSAVINA"

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Abstract: *Ivana Brlić-Mažuranić is the brand of the tourist area "Slavonski Brod-Posavina", and her name and work are a frequent motive for the arrival of tourists, and the key distinguishing element on the basis of which this destination can differentiate itself from the competition. Analyzing the results of a large number of primary research conducted by the Zagreb Institute for Tourism during the preparation of marketing plans for the tourism development, as well as trends on the global tourism market, it was found out that the name and work of this Croatian writer could be the starting point for more intensive development of various forms of cultural tourism, including heritage, literary tourism, event and creative tourism. The aim of this paper is to determine which of these forms of tourism should the most be invested in, and which of the mentioned tourist products could bring the greatest economic benefits. As part of this, after analyzing the existing situation, the primary research, using the survey method, was carried out, in order to determine the attitudes of tourists and local residents regarding the perspective of particular cultural-tourism products based on Ivana's name and work. The results of the research showed that the views of the respondents regarding the perspective of certain cultural products are fairly evenly distributed, and therefore each of these products is to a lesser or greater extent in the function of the arrival/longer stay of visitors in the destination. The conclusion drown from there was that cultural tourism needs to be developed in different directions and within each policy area, various activities should be implemented to intensify the arrival of tourists motivated by culture; improve the conditions of their stay, as well as achieve economic benefits on the part of the holders of cultural and tourist activities.*

Keywords: *Ivana Brlić Mažuranić, cultural- tourism product, cultural tourists, Slavonski Brod, Posavina*

JEL classification: *M31, O18, R11*

INTRODUCTION

Cultural tourism can be defined as an activity in which the primary motivation of visitors is to learn, discover, experience and consume tangible and intangible cultural attractions/products in a tourist destination. These attractions/products refer to a set of distinctive material, intellectual, spiritual and emotional features of a society that include art and architecture, history and cultural heritage, culinary heritage, literature, music, creative industries and living cultures with their lifestyles, value systems, beliefs and traditions (WTO, 2017).

In Europe, the double definition of the European Association for Tourist and Leisure Education (ATLAS), which conducts research on cultural tourism in Europe for the needs of the European Union, is most often applied. The conceptual definition includes motivational and experiential elements, thus defining cultural tourism as all trips that include visits to cultural attractions outside the permanent place of residence, with the aim of acquiring new knowledge and experiences that meet the cultural needs of the individual. According to the technical definition, however, cultural tourism trips are all trips that include visits to cultural tourist attractions, from historical sites to artistic and cultural events, to visits to museums and theaters, made outside the place of residence (Richards, Cultural Attractions and European Tourism, 2001).

In any case, today cultural heritage includes both tangible and intangible goods (Timothy, 2020), and cultural tourism are tourist activities that take place in places and destinations with cultural heritage (ICOMOS, 2022). At the same time, it should also be noted that the cultural resources of a destination exist primarily because of its own citizens, because culture enriches their daily life, defines their identity and gives them a sense of continuity between the past, present and future (Tomljenović, Cultural tourism, 2006).

In the 1970s, cultural tourists were considered to be a small number of better-educated and affluent people with a pronounced preference for culture and art, attracted mainly to elite cultural attractions and events (McKercher & Du Cros, 2002), while today the market of cultural tourists is very heterogeneous, and the travel motives of certain market segments of cultural visitors are different (Lončarić, Marketing in tourism of Slavonia and Baranja, 2012). The same in a business sense can represent a big challenge for the cultural sector, because this sector is increasingly faced with a chronic lack of financial resources for the maintenance of cultural heritage and the financing of cultural creativity, so involvement in tourism is becoming an increasingly attractive business option for this sector (Tomljenović, Cultural tourism, 2006). In other words, cultural tourism should be seen as an important potential source of tourist growth (Richards, 2003) at the level of management policy, including the level of management in tourist communities and cultural institutions, because cultural attractions and events in the ever-increasing generate tourist consumption (Richards, 2018), and lead to economic benefits, both in terms of the growth of visitors, and in terms of their longer stay in the destination (du Cros, 2007).

When it comes to the tourist region of Slavonia, which is located in the territory of the Republic of Croatia, the analysis of physical indicators published by the State Statistical Office of the Republic of Croatia shows that it is the most underdeveloped Croatian region in terms of tourism. Despite this, a certain number of Slavonian tourist attractions, including attractions related to cultural and historical heritage, have international importance (Boranić-Živoder, i dr., 2019 b). Thus, in the Brod-Posavina County, the Brod Fortress with the Tamburitza Museum and the Ružić Gallery (Boranić-Živoder, i dr., 2019 a) has been singled out as a cultural attraction of international importance (Boranić-Živoder, i dr., 2019 a), which has been continuously renovated and new facilities are introduced to it (Boranić Živoder, i dr., 2022).

Although in the area of the tourist area "Slavonski Brod-Posavina", which territorially occupies the area of the city of Slavonski Brod and the municipalities of Bukovlje, Gornja Vrba and Podcrkavlje, cultural tourism is not represented to the same extent as business, transit and shopping tourism (Tomljenović & Boranić Živoder, 2023), there is an increasing number of tourists, both organized and individual, whose motive for staying in the destination is culture. Therefore, the Action Plan for the development of cultural tourism in the destination for the period 2024 -2030 was drawn up in November 2023., and it promotes a proactive approach through the development of four key products: heritage tourism, literary tourism, event tourism and creative tourism (Tomljenović, Tokić, & Vodanović Lukić, 2023).

For all the mentioned cultural products, one of the key backbones of further development is the character and creativity of the great Croatian writer Ivana Brlić-Mažuranić, who wrote most of her fairytales in Slavonski Brod, which can significantly contribute to better positioning of the destination "Slavonski Brod-Posavina" on the tourist markets. This is also confirmed by the slogan "Sail into a fairy tale" associated with Ivana Brlić Mažuranić, which is a component of the destination's visual identity and, based on a series of previously conducted primary research, has been implemented since 2011 (Lončarić, 2014).

What is currently insufficiently examined is the extent to which the comparative advantages of the destination "Slavonski Brod-Posavina" resulting from Ivana's stay and literary creation in Slavonski Brod have been used, or whether the direction in which further investments should go has been defined.

Therefore, the subject of the research carried out within this work are precisely the selective forms of cultural tourism whose development is possible in the destination, and for which the name and work of Ivana Brlić-Mažuranić are the starting point, because these elements are the most important key distinguishing elements of the integral tourist product of the destination. In this sense, the aim of the subject research was to determine which of the possible selective forms of cultural tourism should be invested in the most in the upcoming medium-term period, and, which of the mentioned tourism products in the cultural sector could bring the greatest economic benefits to the local community. When it comes to the motive of the research, the emphasis is on finding out the views of different target segments, including the local population, on this issue.

In this sense, this research aims to prove the scientific basis of the following hypothesis: The motives for visiting cultural attractions and consumption of cultural contents in the destination „Slavonski Brod-Posavina" by different market segments

are various, and therefore each of the development activities which are being carried out in the segment of heritage tourism, literary tourism, event tourism and creative tourism should be in the function of the arrival/longer stay of visitors in the destination, regardless of the main motive of their current stay. Therefore, cultural tourism in this destination needs to be developed in different segments, including heritage tourism, literary tourism, event tourism and creative tourism, and within each of the mentioned areas different activities should be carried out, all in the function of intensifying the arrival of tourists motivated by culture; improving the conditions of stay of this category of tourists, and also achieving economic benefits on the part of the cultural and tourist activities in the destination.

This paper provides an overview of the relevant literature in the field of cultural tourism, presents the research methodology, explains the documentation base for conducting primary research, establishes limitations, explains the research results, and gives an overview of the possibility of applying the research results in practice.

LITERATURE REVIEW

One of the most cited authors in the field of cultural tourism is certainly Greg Richards, author or co-author of a number of scientific papers on this topic, some of which were also used as sources during the writing of this paper.

More recent research on this topic was conducted by M. Al-Ababneh and M. Masadeh (Creative cultural tourism as a new model for cultural tourism, 2019). These authors introduce the concept of "creative tourism" which is developing in both urban and rural areas and increasingly replaces traditional "cultural tourism", what is especially important for destinations that do not have a rich cultural heritage, and base their cultural-tourism development on "intangible elements". M. Galvagno and S.C. Giaccone (Mapping Creative Tourism Research: Reviewing the Field and Outlining Future Directions, 2019) defines creative tourism as a form of cultural tourism whose development is based on the tradition and customs of the local population and the involvement of tourists in creating experiences; S. M. Cabeca (Post-Pandemic Tourism: Opportunities for Creative Tourism, 2022) points to the desire of cultural tourists to connect with the local community, while B. McKercher and H. du Cros (Cultural Tourism: The partnership between tourism and cultural heritage management, 2002) emphasize the need to actively manage the experiences of tourists motivated to come by culture. While P. Remoaldo et al. (Profiling the participants in creative tourism activities: Case studies from small nd medium sized cities and rural areas from Continental Portugal, 2020) emphasize the possibilities of combining the content of creative tourism with the content of other forms of tourism which are the main motive of arrival tourists to the destination, V. Cuffy and B. B. Nair (Events Tourism: A critical debate for the 21st century, 2021) emphasize the importance of "cultural events tourism".

Renata Tomljenović, author or co-author of a number of scientific papers on this topic, including the chapter "Cultural tourism" in the scientific book "Croatian tourism: blue, white green" from 2006, and a number of strategic and action plans of tourism development of the region of Slavonia and the region of Brod-Posavlje (Tourism master plan for the city of Slavonski Brod, 2010); (Action plan for tourism development in Slavonski Brod., 2011); (Action plan for adapting tourism management in the crisis situation caused by the C19 pandemic, 2020); (Strategic marketing plan for

tourism in Slavonia with a branding plan for the period 2019-2025., 2019 b); (Tourism Marketing Plan of Brod-Posavina County 2019-2025., 2019 a); (Tourism Development Strategy and Marketing Plan for Brod-Posavina County until 2030., 2022); (Destination Slavonski Brod-Posavina: Analysis of the situation with strategic guidelines, 2023); (Destination Slavonski Brod-Posavina: Action Plan for the Development of Cultural Tourism 2024-2030, 2023).

This author has researched that, except in the case of well-known and market-profiled cultural attractions, the most frequent visitors to most cultural and historical sights and events are those who do not choose the destination of their trip based on the cultural offer, but will consume it if it is available in the destination (Tourism master plan for the city of Slavonski Brod, 2010). According to R. Tomljenović, within the tourist product of cultural tourism, it is possible to identify four interdependent groups of products, namely: Cultural heritage, Festivals and events, Literature and Creativity (Tomljenović, Tokić, & Vodanović Lukić, 2023).

Papers published on this topic within the framework of international scientific meetings, i.e. in scientific journals, were also studied. Thus, B. Z. Poljašević and colleagues (Business and digital competencies in creative industries: analysis of study programs in Bosnia and Herzegovina and Slovenia, 2020) single out education as a key factor in creative industries; H. Lajšić (Current situation, chances and challenges for the development of human resources in the field of culture of the Republic of Serbia, 2017) explains the process of globalization in the creative sector; I. Matečić (Specific Characteristics of the Tangilbe Cultural Heritage Valuatian Processing Tourism, 2016) elaborates the process of cultural heritage valuation in tourism, while T. S. Vlahović Mlakar and Đ. Ozretić Došen (Brand Experience Research in Hospitality and Tourism - Review and Future Directions, 2022) emphasize the "experience" in the destination as a crucial success factor in all segments of tourism.

When it comes to authors studying the possible development of cultural tourism in the region of Slavonia, L. Lerga and colleagues (The influence of cultural heritage on the development of Slavonia*s, Baranja*s and Srijem*s tourism, 2021) analyze the possibilities of developing cultural tourism in the entire region of Slavonia, and B. K. Gigić (Population perception of creating the brand of the city of Osijek with an emphasis in the field of culture, 2022) investigates the possibilities of branding the city of Osijek as a tourist destination through cultural heritage.

METHODOLOGY AND EMPIRICAL DATA

On the occasion of conducting research on the topic of the possible development of cultural tourism products in the destination "Slavonski Brod-Posavina", questionnaires that were used consisted of the questions for which the starting point was the study "Action plan for the development of cultural tourism in the area of the destination "Slavonski Brod-Posavina" from November 2023, made by the Zagreb Institute for Tourism.

Chart 1. Four interdependent groups of cultural products of the destination "Slavonski Brod-Posavina"

Source: (Tomljenović, Tokić, & Vodanović Lukić, Destination Slavonski Brod-Posavina: Action Plan for the Development of Cultural Tourism 2024-2030, 2023)

As can be seen from Chart 1, when it comes to cultural tourism, the author of the study envisages the possibility of developing four interdependent groups of cultural-tourism products whose development is possible in the area of the destination "Slavonski Brod-Posavina", including the following segments: cultural heritage; festivals and events; literature and creativity.

The same concept was applied in the subject primary research conducted by the authors of the paper, with the name and work of Ivana Brlić-Mažuranić as one of the key cultural and touristic attractions of the destination.

In question number 1, the respondents were supposed to rank, according to priorities, using grades from 1 (the most perspective tourist product) to 4 (the least perspective tourist product), the cultural and tourist products in the destination for which the starting point is the creative work of Ivana Brlić Mažuranić, including festivals and events; literature; creativity and cultural heritage. The authors of the research provided the necessary explanations under the first research question regarding the activities involved in each of the mentioned products.

In questions 2 to 4, it was investiged the respondents' attitude towards individual activities in each of the mentioned segments, and these activities had to be ranked from 1 (the most perspecitve activity) to 4 or 8 (the least perspective activity), depending of the number of offered activities. Thus, respondents within the "festivals and events" segment, considering the priorities, assessed the importance of the following activities: performance of theatrical performances and musical-stage magics on the theme of Ivana Brlić Mažuranić continuously throughout the year; enriching the content of the April cultural event "In the fairy tale world of Ivana Brlić-Mažuranić"; organizing theater meetings and film festivals; organizing costume balls. Within the "literature" segment, they determined the priority of the following activities: creation of digital and creative maps; organizing literary events on the theme of Ivana's works, including promotions and book signings, literary evenings, commemorations and reading of Ivana's fairy tales with the involvement of storytellers; literary tourist tours, including Brlić

House, locations with the sculptures of characters from Ivan's fairy tales, Dragutin Tadijanović's Memorial Home and locations mentioned in Ivan's fairy tales; introduction of special standards for catering establishments. Furthermore, in the "creativity" segment, grades were awarded to activities related to: organizing creative workshops of reading, writing, modeling and making souvenirs; organizing art colonies; participation of visitors in living history programs with costumed characters from Ivan's fairy tales and placing the city of Slavonski Brod to international cultural routes. Finally, in the „cultural heritage" segment, activities related to the enrichment of the permanent exhibition in the Brlić House; painting the walls of the school of Ivana Brlić Mažuranić with motifs from Ivana's fairy tales; purchase of the summer house of the Brlić family in Brodski Vinogorje by the City of Slavonski Brod; setting up a diorama for taking photos with motives of the writer; setting up a permanent exhibition dedicated to the Brlić family in the Museum of Brodsko Posavlje; further realization of the project of setting up sculptures with characters from the writer's fairy tales to external locations; realization of the project of arranging and marking the hiking trail "fairytale paths" along the slopes of Dilj Gora, as well as the setting up the new equipment to the picnic area „Forest of Stribor" in the settlement of Podvinje in the city of Slavonski Brod.

The research was conducted on a sample of 563 respondents, including visitors to cultural events (exhibitions, performances, book promotions, poetry evenings, creative workshops, etc.) that took place during March and April 2024 in the Brlić House and in the Slavonski Brod City Library (share 33.39%); individual and organized tourists, i.e. participants of the International Scientific Meeting "Ivana Brlić Mažuranić in the new millennium" and participants of the study trip of the principals of primary and secondary schools from the city of Zagreb (share 9.77%) and students of the University of Slavonski Brod, including those who have a residence outside the tourist destination "Slavonski Brod - Posavina" (share 56.84%).

RESULTS AND DISCUSSION

The results of the research are shown in the charts below, with a note that certain limitations stem from the fact that not all respondents answered all the questions from the questionnaire, and that there were cases of assigning the same grade to more than one activity, regardless of priority, by individual respondents.

In addition, one of the limiting factors was the relatively small sample of 563 respondents and the small number of target segments (three segments), among which there were no target groups motivated to come to the destination by some other incitement, excluding culture.

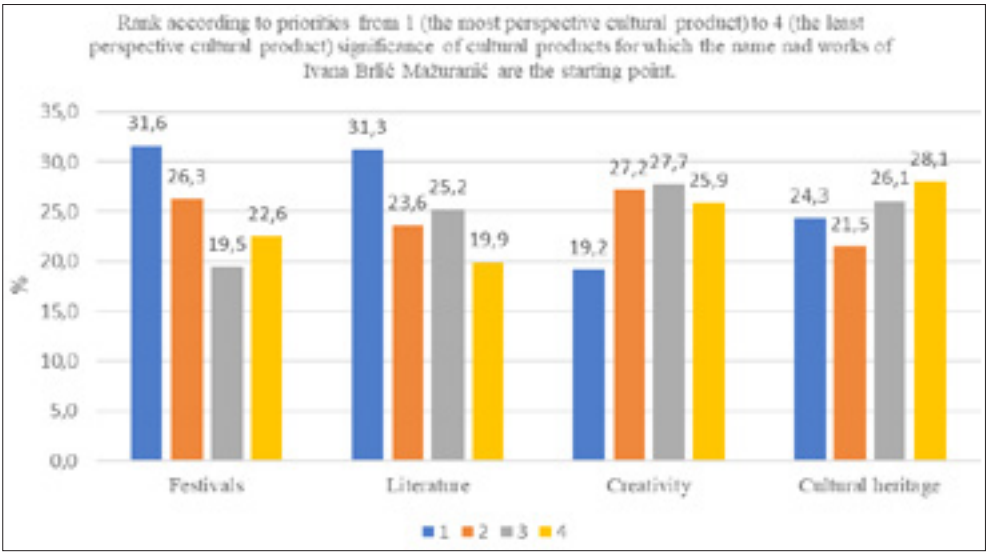

Chart 2. Significance of cultural products for which the name and works of Ivana Brlić Mažuranić are the starting point

Source: Research results, 2024.

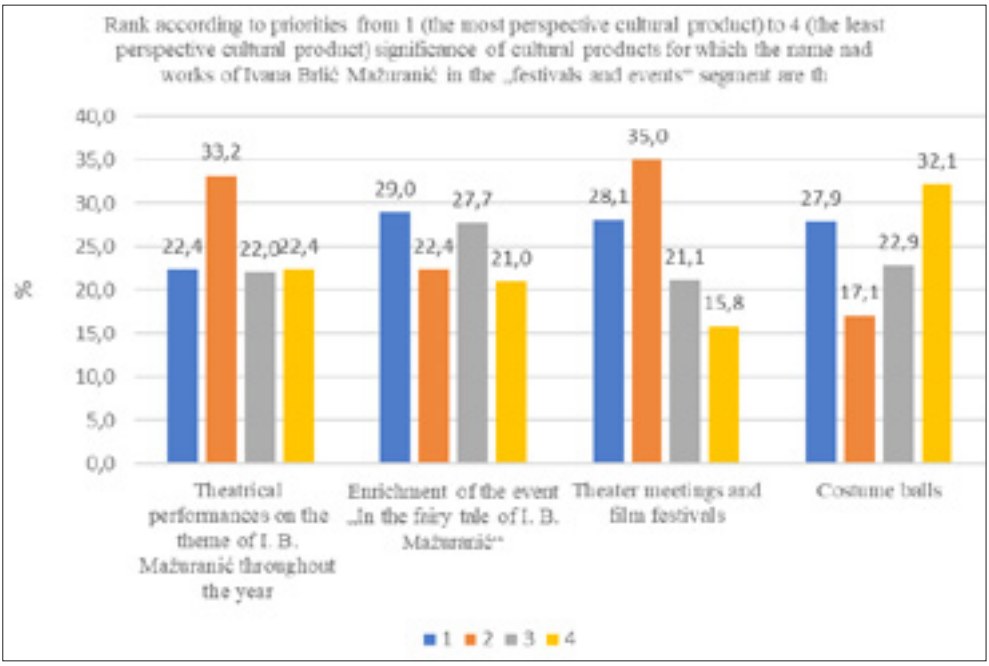

Chart 3. Significance of cultural products for which the name and works of Ivana Brlić Mažuranić in the "festivals and events" segment are the starting point

Source: Research results, 2024.

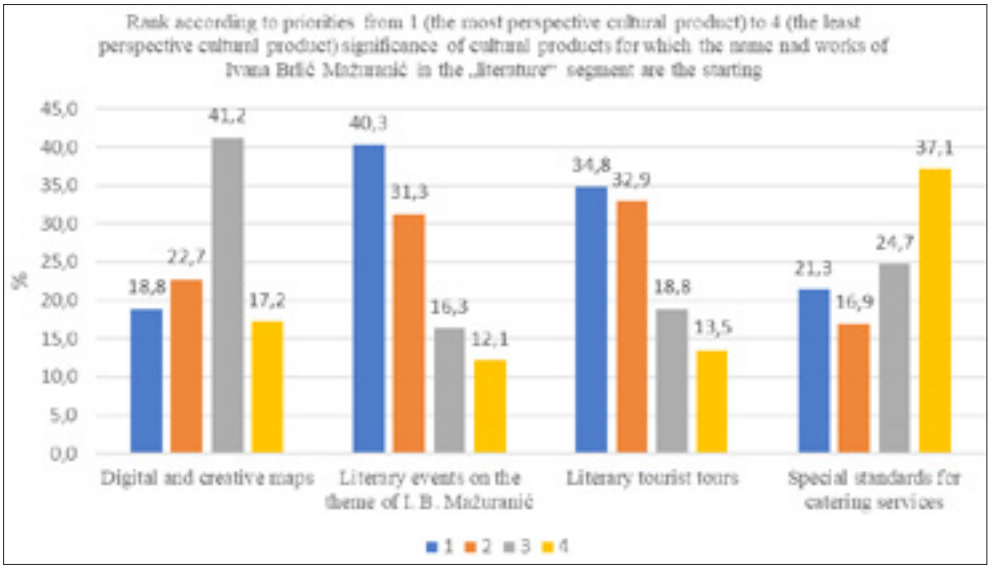

Chart 4. Significance of cultural products for which the name and works of Ivana Brlić Mažuranić in the "literature" segment are the starting point

Source: Research results, 2024.

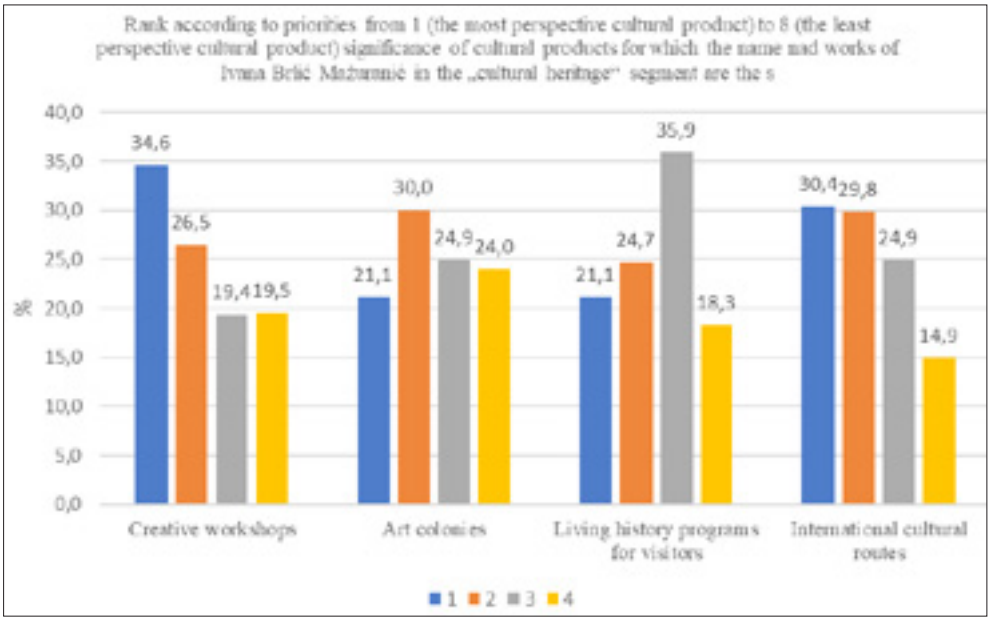

Chart 5. Significance of cultural products for which the the name and works of Ivana Brlić-Mažuranić in the "creativity" segment are the starting point

Source: Research results, 2024.

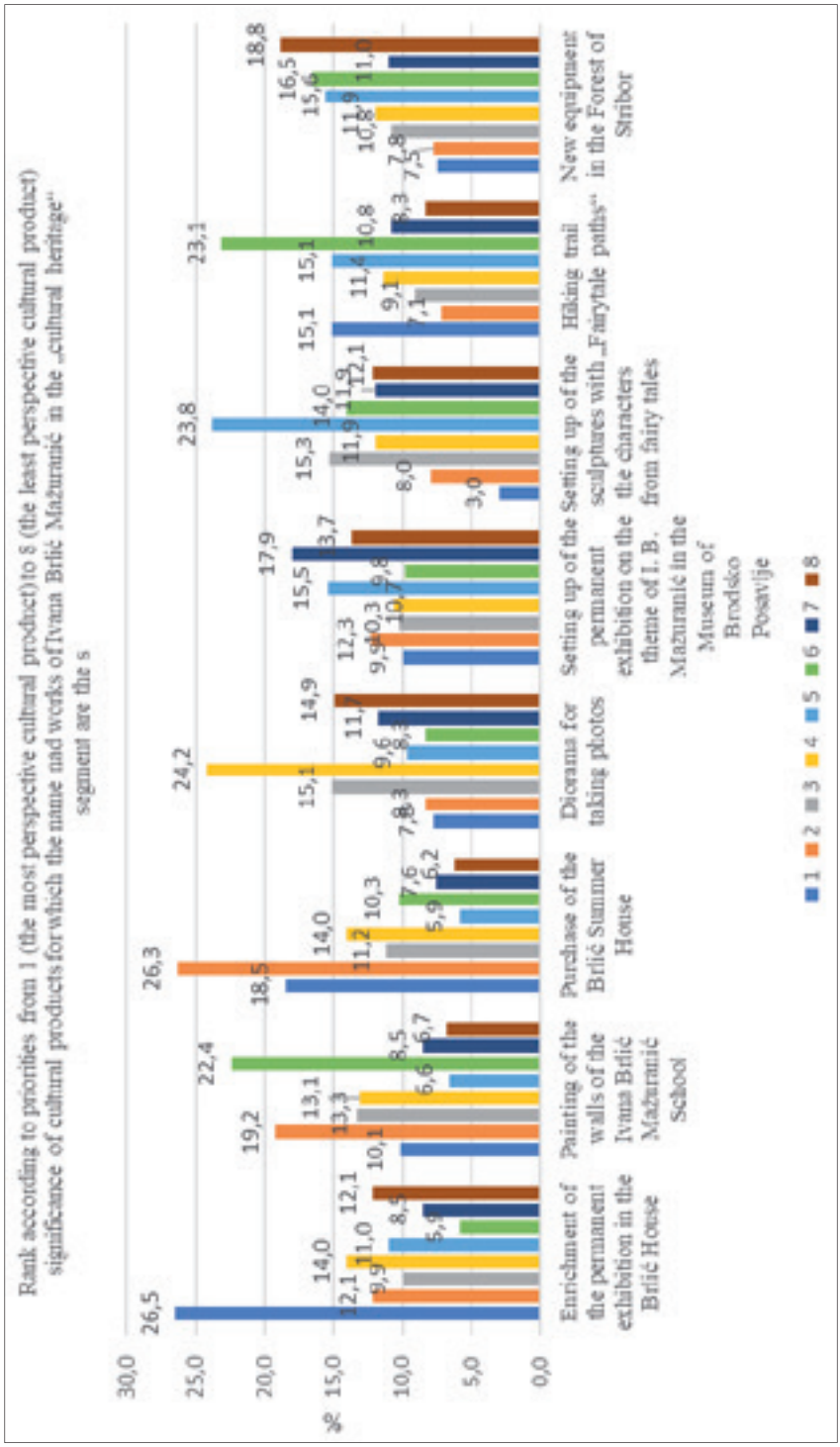

Chart 6. Significance of cultural products for which the name and works of Ivana Brlić Mažuranić in the "cultural heritage" segment are the starting point

Source: Research results, 2024.

From the analysis of the research results shown in Chart 2, it follows that the respondents' opinions regarding the perspective of cultural products were quite evenly dispersed, with the fact that "festivals and events" were rated as the most perspective cultural product, because this product category was given the highest grade by 31.6% of respondents, while "literature" was rated the highest by 31.3% of the respondents. In contrast, the largest number of respondents, 28.1% of them, gave "cultural heritage" the lowest grade in terms of perspective, while 25.9% of them chose "creativity" as the most unperspective cultural product.

Further analysis of the research results, related to the "festivals and events" segment, which is shown in Chart 3, revealed that "enrichment of the content of the cultural event "In the world of fairy tales of Ivana Brlić Mažuranić" is the most perspective area of activities for 29.0% of respondents. Furthermore, it was also found out that almost the same number of respondents, 28.1% of them, decided to give the highest grade in terms of perspective to "organizing theater performances and film festivals", and for almost the same share (27.9%) of respondents the most perspective cultural product in this segment was "organizing costume balls".

Chart 4 shows the results of the research related to the "literature" segment, with the fact that as many as 40.3% of respondents in this segment rated "literary events" as the most perspective cultural product. In contrast, the largest number of respondents, 37.1% of them, gave the lowest grade regarding the perspective to "encouraging the introduction of a special standards for the so-called literary hotels and literary cafes, concerning the decoration elements, availability of Ivana's works for reading etc.".

Considering the "creativity" segment, as can be seen from the Chart 5, for the largest number of respondents, 34.6% of them, the most perspective cultural product was "organizing creative workshops", while for 30.4% of them, the product with the highest perspective was „placing the city of Slavonski Brod to international cultural routes". In this segment, the respondents, 24.0% of them, rated "organizing art colonies" with the lowest grade in terms of perspective.

Chart 6 shows the results of research in the "cultural heritage" segment. As can be seen from it, 26.5% of respondents gave priority to "enriching the permanent exhibition in the Brlić House", and there was a large percentage of those (23.8%) who primarily supported "the continuation of the project of setting up sculptures with characters from fairy tales of Ivana Brlić Mažuranić to outdoor locations in the city of Slavonski Brod". On the other hand, the largest number of respondents, 18.8% of them, gave the lowest grade regarding the perspective of cultural products to the activities on "setting up the new equipment to the picnic area " Forest of Stribor" in the settlement of Podvinje in the city of Slavonski Brod".

By conducting a further analysis of the research results, and that by analysing attitudes of individual target segments, certain exceptions concerning the perspective of cultural products by certain groups were determined. For example, it is interesting to note that as many as 28.7% of visitors to cultural events organized by the Slavonski Brod Art Gallery and the Slavonski Brod City Library rated „creativity" as the most perspective cultural product, unlike the other two target groups.

When it comes to the "festivals and events" segment, students showed a significantly different attitude from the other two target segments, as even 38.4% of them gave the highest grade in terms of perspective to "organizing costume balls".

Regarding the "literature" segment, a different attitude about the perspective of cultural products among the target groups was noticed by "tourists". In contrast to the other two groups, as many as 41.8% of them considered "literary tourist tours" to be the most perspective cultural product, while as many as 60.0% of them rated "introducing special standards for hospitality establishments" as a completely unperspective cultural product.

Analyzing the attitudes of individual target groups within the "creativity" segment, it was found that only the target group "tourists" considered „living history programs with costumed characters from Ivana Brlić Mažuranić's fairy tales" as a highly perspective cultural product (36.4% of respondents gave this activity the highest grade), while the majority of respondents from the other two groups, 39.4% of them from the "group of students", i.e. 35.6% of them from the "group of visitors of cultural events", on their list of priorities ranging from 1 (the most perspective cultural product) to 4 (the least perspective cultural product), assigned to this activtiy the grade 3.

An additional analysis was also carried out in the "cultural heritage" segment, and it was found that in this case too, the attitudes of the target group "tourists" differ from the attitudes of the other two groups. Along with "enriching the permanent exhibition in the Brlić House" as a priority (which was chosen by 40.0% of the respondents), as many as 34.5% of them considered "setting up the new equipment to the picnic area "Forest of Stribor" as a priority cultural product, which is in contrast to the attitude of the other two target groups (students and visitors to cultural events) who rated this product as unperspective. In contrast, "the continuation of the realization of the project of setting up sculptures with fairy tale characters by Ivana Brlić Mažuranić" was considered a priority cultural product for only 9.1% of respondents from the target group "tourists", while in the case of the other two target groups, this percentage was above 20,0%.

Through further analysis of the research results, it was also realized that among all cultural products, in the „literature" segment, literary events on the subject of Ivana's works including promotions and book signings, literary evenings, commemorations and readings of Ivan's fairy tales with the involvement of fairy tale tellers, were marked as the most perspective, because 227 of a total of 563 respondents (40.3%) expressed such an opinion. In contrast, the majority of respondents, as many as 37.1% of them, marked „introducing special standards for catering facilities", also in the "literature" segment, as the least perspective activity.

CONCLUSION

Numerous primary researches and analyzes realized by the Zagreb Institute for Tourism as part of the preparation of strategic marketing documents for the tourism development of the destination "Slavonski Brod-Posavina" have shown that the most developed selective forms of tourism in this destination are business, transit and shopping tourism, although continuously the number of tourists whose motive for coming to the destination is culture also increases, as well as those who come to the destination primarily motivated by other reasons, but stay here longer for the sake of culture, achieving tourism consumption in the cultural sector as well. The results of the research done by numerous scientists dealing with this issue have shown that cultural resources, including material and immaterial goods, are primarily in the function

of meeting the cultural needs of the local population. Nevertheless, including cultural sector in the tourist offer is also of a great importance for the prosperity of this sector, concerning the chronic lack of financial resources intended for the maintenance of cultural heritage and the development of cultural creativity. In this paper, after conducting primary research, the perspective of certain cultural products whose development is possible in the area of the tourist destination "Slavonski Brod-Posavina" was analyzed, including a range of different activities in four segments: heritage tourism, literary tourism, event tourism and creative tourism. The aim was to determine which of possible selective forms of cultural tourism should be invested in the most, during the coming medium-term period, that is, which of the mentioned tourist products in the cultural segment could bring the greatest economic benefits to the local community. For this purpose, the attitudes of different target segments, including the local population, on this issue were investigated. The results of the research showed that the views of the respondents regarding the perspective of cultural products are fairly evenly distributed and that therefore each of these products is to a lesser or greater extent in the function of the arrival/longer stay of visitors in the destination, regardless of the basic motive of their current stay in the destination. In this sense, the scientific hypothesis has been proven that the motives for visiting cultural attractions and consumption of cultural contents in the destination by both local residents and guests with a place of residence outside the destination are different, and therefore each of the development activities carried out in the segment of heritage tourism, literary tourism, event tourism and creative tourism are in the function of arrival/longer stay of visitors in the destination, regardless of the main motive of their current stay in the same. It was also recognized and proved that cultural tourism has to be developed evenly in different directions, including heritage tourism, literary tourism, event tourism and creative tourism, and within each of the mentioned areas, different activities should be implemented, all in the function of intensifying the arrival of tourists motivated by culture; improving the conditions of stay of this category of tourists, but also achieving economic benefits on the part of the holders of cultural and tourist activities in the destination. Despite the limitations resulting from the fact that some respondents failed to answer all the questions from the questionnaire; that there were recorded cases of assigning an identical grade to several or all products, regardless of priority, by individual respondents, and that the research used a relatively small sample of 563 respondents, consisting of only three target segments (excluding the target group whose arrival in the destination is not motivated by culture), the results of this research could be used in practice by stakeholders involved in the cultural and touristic development of the destination. This primarily refers to the City of Slavonski Brod, which owns most of the cultural properties as well as the locations where the activities will be carried out, and which disposes of the big budget, including EU funds, for the financing of significant constructions works. In addition, the research results should be used in practice by all other holders of cultural and tourist activities in the destination area, such as cultural institutions owned by the City and Slavonski Brod and Brod-Posavina County, amateur theaters operating in the destination area, tourist guides, producers of traditional souvenirs and their sections within economic associations that are registered in the county, tourist boards, ecological associations, but also providers of catering services in the destination, including accommodation

and food services, primarily related to the way of decoration of the catering establishments in the spirit of "literary hotels and cafes".

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

DEVELOPMENTAL OPORTUNITIES FOR DIFFERENT TYPES OF TOURISM IN BANJA SLATINA

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***Abstract**: This paper aims to point out the possibilities of tourism development and the current position of Banja Slatina on the tourist market, pointing out the exceptional tourist position and variety of tourist opportunities. Also, the goal is to point out various highly attractive opportunities, which can attract tourist demand, and the need to appreciate them in their complexity and the complexity of relationships and phenomena that arise during tourist movements. The analysis of tourist resources determined the benefits and comparative advantages, as well as the weaknesses and disadvantages of Banja Slatina as a tourist destination, presented by SWOT and portfolio analysis.*

For the purposes of the research, a survey was conducted among the resident population regarding the favorable environment, information and interest of household owners in rural tourism. In doing so, the method of description and analysis was used, and for the purposes of comparing survey results from 2003 and 2014, the method of comparison was used. The research results indicate that, regardless of the passage of time of 11 years, there is still a moderate level of interest of the Slatina population in providing this type of tourist service.

***Keywords:** Banja Slatina, tourism, tourist motives, tourist development, spa tourism*

***Jel classification:** Z32*

INTRODUCTION

In addition to the indisputable fact that the oldest and most important form of tourism in spa towns is health tourism, during the last decades, in order to attract as many tourists as possible, and thus achieve economic benefits, traditional spa resorts are becoming modern health and recreational centers as well as centers t

hat nurture and provide various types of tourist services, such as: congress, cultural, event, sports, transit, etc. It is a path that requires the involvement of all structures of society, private and public sector, experts from different fields, medicine, economy,

tourism, marketing, ecology, sociology, informatics. The achieved and planned volume of activities in the tourist destination requires the need for tourism planning, defining the infrastructure needed for the planned growth of the destination, quality control and environmental protection (Popescu, 2011). Therefore, effective management plays a key role in the development of all forms of tourism. Rational use and preservation of tourist resources, their evaluation through planned and sustainable development of tourism, construction and renovation of tourist capacities, introduction of modern attractive tourist content and programs, high level of service quality, investment in knowledge and expertise, solving ownership problems, good destination management, strengthening marketing activities, are among the key generators of tourist destination management (Vilić & Dujaković, 2015)

Spa tourism is based on the use of thermal and mineral waters, for the purpose of treatment, rehabilitation and recreation. The largest volume of tourist traffic in the Republic of Srpska, measured by the number of overnight stays, is achieved in spas. And yet, except Banja Vrućica, all other spa centers are of secondary importance, where the guest structure is mainly made up of rehabilitation patients, whose stays are financed from the funds of the Republic of Srpska Health Insurance Fund. All the more, a detailed analysis of the total potential related to the possibilities of various types of tourism should contribute to overcoming the stated situation. Accordingly, the goal of the research is to determine all the relevant potential that has or can have an impact on the development of tourism in Slatina. In this sense, the first goal represents the need to point out the possibilities of better utilization of resources to current and future administrative structures and policy holders of tourism development in Slatina.

The work is based on a detailed analysis of the potential developmental opportunities for various forms of tourism, which are supplemented by survey research, and the final form of the current capabilities of Banja Slatina regarding the developmental opportunities for various forms of tourism supported by a SWOT and portfolio analysis.

LITERATURE REVIEW

On the world market, the offer of spas is dynamically changing, developing and enriching every day. Each spa tries to find something in its offer that will set it apart from other spas and attract a larger number of visitors (Fontanari & Kern, 2003). The spa offer is primarily based on treatment and rehabilitation programs, because the use of these types of health-tourism products and services is supported by domestic or foreign health funds (Bennett, King, & Milner, 2004). That's why health tourism is one of the main forms of tourism, and its importance is particularly pronounced in environments that have a high awareness of the connection between good health and physical activity (Szromek & Pollock, 2022).

Accommodation is also an important segment of spa tourism. Accommodation facilities in the spa destination are increasingly enriching their traditional medical facilities by providing comprehensive wellness facilities and rejuvenation tourist packages. (Medina-Muñoz & Medina-Muñoz, 2013).The distance and connection of the spa destination with larger cities as a significant generator of tourist demand for spa services, as well as the speed and comfort of reaching the destination largely determines the competitiveness of the spa destination (Lee, Ou, & Huang, 2009). Local

resources used in spa tourism can make the local community more sustainable, given that the whole community can benefit through new jobs and the development of services. (Marković, 2019)

Accordingly, spa tourism and wellness should be in line with global trends and clients' wishes, in order to provide them with a stay that will stimulate them to repeat the pleasant experience (Zrnić, Đoković, Košutić, & Mašić, 2021).

With the above in mind, we would like to point out the underutilization of the wide range of possibilities for the development of tourism in Banja Slatina, in order to affirm and improve the overall tourist offer.

RESEARCH METHODOLOGY

The research findings presented in this study include data collected through empirical research, conducted during 2023, in the form of field research and surveys, in Banja Slatina. During cabinet data collection, primary and secondary data sources and literature from the field of tourism development were used. The surveys whose data were used in this work were conducted using the PAPI method, i.e., examination by direct communication with the residents of Banja Slatina and key stakeholders for a certain type of tourism. The purpose of survey research is related to the collection of concrete data by the resident population in order to obtain relevant attitudes and opinions, which are related to the development of tourism, but also to the improvement of the overall life in Slatina. During data processing, the following methods were used: descriptions, analyses, comparisons, generalisations and classifications.

RESEARCH RESULTS

Spa Slatina is located in the southern part of Laktaši municipality, fifteen kilometers north-east of Banja Luka. The position of Banja Slatina as part of the tourist offer of the region (Krajina) implies consideration of comparative advantages, which primarily relate to the proximity of the largest broadcasting center of Banja Luka. An important aspect of Banja Slatina's touristic and geographical position is the traffic connection with the environment as well as the connection with remote and interesting areas. When we talk about Banja Slatina, it should be said that there are various aspects that can attract tourist demand. The aforementioned fact imposes the need to appreciate the complexity of relationships and phenomena that arise during tourist movements. The tourist development of Banja Slatina should be enabled by numerous tourist motives with high attractiveness, and a particularly favorable tourist and geographical position.

Spa tourism. According to its physical and chemical properties, the water of Banja Slatina belongs to the category of calcium-magnesium bicarbonate, sulfate, carbonic acid hyperthermy (Complete physical and chemical analysis of mineral water from the bath in Banja Slatina, 2017). The beneficial healing effect of this water on rheumatic diseases (inflammatory, degenerative and extra-articular rheumatism), post-traumatic conditions, chronic urogenital and cardiovascular diseases has been confirmed for decades. Considering the existing natural factors, as well as tradition, spa tourism was and will remain the leading segment in the tourist offer of the Slatina spa. However, in this segment of the offer, it is necessary to constantly improve the services, because the competition is modernizing, on the one hand, and the clientele is becoming more and

more demanding, on the other hand. Given the still pronounced seasonality of tourist traffic in Banja Slatina, in order to obtain relevant attitudes related to the possibilities of tourism development, a survey was conducted among the resident population for the purposes of this work in the area of the urban part of Slatina. It is a group of 30 respondents, among whom there were economists, bankers, officials, pensioners and workers. Respondents of predominantly mature age responded to questions related to the general environment of life in Slatina by assessment, namely: 1 = very dissatisfied; 2 = dissatisfied; 3 = neutral; 4 = moderately satisfied; 5 = completely satisfied. The results of the survey are shown in Table 1.

Table 1. Survey of the resident population on the general environment of life in Banja Slatina

Questions:	**Responeses**				
Average age	Men – 58 godina		Women – 54 godine		
Number of visitors	1 = 13%	2 = 16%	3 = 46%	4 = 22%	5 = 3%
Accommodation quality	1 = 0%	2 = 12%	3 = 52%	4 = 30%	5 = 6%
Offer of local food	1 = 15%	2 = 18%	3 = 49%	4 = 18%	5 = 0%
Local transport quality	1 = 3%	2 = 14%	3 = 68%	4 = 15%	5 = 0%
Connection with urban centers	1 = 6%	2 = 11%	3 = 59%	4 = 18%	5 = 6%
Characteristics of ecological conditions	1 = 6%	2 = 28%	3 = 42%	4 = 15%	5 = 9%
Courtesy of the locals	1 = 0%	2 = 12%	3 = 32%	4 = 38%	5 = 18%
Cultural and other events offered	1 = 44%	2 = 36%	3 = 17%	4 = 3%	5 = 0%
Souvenir accessibility	1 = 68%	2 = 23%	3 = 9%	4 = 0%	5 = 0%

Source: Authors, 2023.

As can be seen from Table 1, the respondents gave quite different answers and observations, while on certain questions, such as the evaluation of the cultural offer of Slatina and the possibility of purchasing souvenirs, they had fairly unified views. In addition to the precisely formulated questions presented in Table 1, the respondents commented and suggested possibilities related to the improvement of the overall environment in Slatina, and the comments related to: the need to form an info-center and a tourist bureau in Banja Slatina, then, the formation of a taxi service, improvement of environmental conditions, bad tourist propaganda of the destination, the need to build new accommodation facilities, the construction of a congress hotel, the revitalization of the spa park, the construction of footpaths, etc.

Wellness. Next to the spa facility in Slatina is a wellness center intended for spa users as well as other users. Visitors to the Slatina wellness center have at their disposal: recreational indoor pool, steam and Finnish sauna, pool and tubs with healing thermo-mineral water, jacuzzi, peloidal baths, Finnish sauna with aromatherapy, anti-cellulite program with modern devices, anti-cellulite program as part of carbo-treat-

ment to relax the body from everyday stress. We also offer various types of manual massages: antistress massage of the whole body with aromatic oils, antistress massages (general and by region), reflex foot massage, sports massages (by region and general after training and intense activity), massage with hot volcanic stones, and anti-cellulite massage (https://www.zotovicbl.com/page.php?id=76, 2023)

Sports and recreational tourism. This type of tourism should represent one of the most significant types of tourist traffic, which indicates the importance of its better organization and more efficient inclusion in the integral tourist product of the wider area of Banja Slatina. The area of Banja Slatina is rich in green areas where, among other things, the spa park (recently drastically devastated) stands out, which by its overall characteristics represented a valuable object of natural heritage. Urban greenery, along with forest complexes and agricultural landscape, form a unique system, which in the spatial organization represents an impressive cohesive material. Greenery in the urban area, in addition to aesthetic and compositional values, has a wider significance, which is particularly related to the biological and ecological aspects of environmental management. The urban plan drawn up by the Banjaluka Urban Institute (1986) provided "locations and urban-technical conditions for the construction of a recreation center in Slatina - Phase I". As part of the conceptual plan, the construction of a pool for non-swimmers, a children's pool, a playground, four sports fields, a trim track, a shooting range, etc. is foreseen. (UrbanInstitute, 1986). It should be said that the Institute for Physical Medicine and Rehabilitation "Dr. Miroslav Zotović" organized the presentation of the conceptual design of the Spa Complex Slatina project in August 2022. According to the conceptual solution, the complex will cover about 100,000 m^2 of buildings and 84,000 m^2 of park areas. It is planned to build a Central Pavilion with catering facilities, a congress hall and a viewpoint, then a hotel with wellness facilities and an indoor swimming pool (/www.rtrs.tv/, 2023).In addition to the above, a therapeutic park with well-maintained paths, accompanying facilities and sports fields, facilities for medical rehabilitation, a covered parking lot and a central garage, as well as a technical pavilion and a central kitchen, were designed. Here, we should especially point out the possibility of using constant water temperature in indoor pools and extending the tourist season throughout the year.

Excursion tourism. Certain forest complexes undoubtedly represent an exceptional excursion and recreation potential. Forest Park "Slatina" is bounded on the south and southeast sides by the asphalt road Banjaluka-Slatina-Klasnica, on the northwest by the Ercegovačka River, and on the west and east by private properties. It occupies an area of 45ha, and is overgrown with a tall forest of beech, hornbeam and common hornbeam. This object of natural heritage has the function of an urban Park-Forest of a recreational nature. The area of the "Slatina" Forest Park is protected as an area with sustainable use of natural resources and intended for the implementation of health and preventive programs, education, rest and recreation. The works on the arrangement of the "Slatina" Forest Park are still in progress, but the walking paths are already open. About 10 km of trails, 12 rest areas, 8 bridges and approximately 70 benches were built on an area of 358 dunums of forest (/www.rtrs.tv/, 2023) Part of the walking paths are covered with tartan flooring. However, due to the poor quality of the tartan, signs of

rapid deterioration are observed. The same can be said for the marginal parts of the paths that are lined with wooden material, and are also exposed to rotting. By improving this natural treasure, visitors, in addition to forest paths for rest and walking, can expect sports, recreation and rest facilities such as: a therapeutic garden, outdoor gyms, sports fields, trim tracks, children's playgrounds and other facilities. The Old Church complex occupies an area of 40ha, and is located northwest of the settlement of Slatina. The stands of oak and beech forest in this locality are of good quality and have significant excursion and recreational potential. In order to bring it to its intended purpose, it is necessary to take certain measures and interventions of a technical and investment nature. To the southwest of the settlement of Slatina is the Complex Stjepan glava. It is a hill covered with forest. From the elevation 387-Stjepan glava, there is a view of the valley of Slatinski potok, Banjaluka, the low mountain Crni vrh, and a view of the villages of Zalužane and Trn. The area of the complex is 30ha. Access is possible from the road Banjaluka-Slatina-Klasnica. The forest complex can serve as a viewpoint, but also as a suburban park-forest. In addition to forestry operations, it is necessary to arrange access paths to the top and provide views towards Slatina and Banja Luka. In addition to the above, it is necessary to implement biotechnical measures in order to increase the stability of the ecosystem with excursion-recreational purpose, which refers to: carrying out selective logging with the aim of sustaining the forest ecosystem; stabilization of pedestrian routes with the aim of reducing the anthropogenic impact on biocenosis; creation of young plantations with the aim of landscape reconstruction; treatment of diseased and damaged trees, then installation of billboards, routing of ecopaths, arrangement of viewpoints, installation of various warning signs, etc.

Eco tourism. It is about visits to relatively untouched natural areas of nature and the promotion of their protection, with little negative impact on visitors and provision of socio-economic benefits for the resident population (Ceballos-Lascurain, 1996). As with the "excursion tourism" segment, this type of tourist offer in Slatina is characterized by high potential quality. This finding is particularly evident in the fact that the area of the "Slatina" Forest Park is protected as an area with sustainable use of natural resources. However, although ecotourism is dominantly associated with protected areas, considering that they contain the greatest ecotourism potential, this type of tourism can also be activated in areas that are not in the protection regime, respecting the key principles of ecotourism destinations.

Event tourism. Banja Slatina and its surroundings represent an extremely valuable natural entity. However, event tourism has not yet been fully affirmed through the organization of cultural, entertainment and other events. The events that took place, or are still taking place, are: "Strawberry Days", "Beer Days", "Slatina Assembly" and "Tourist Days of Slatina". The "Strawberry Days" event is the only one that is still held regularly from year to year, with an uncertain perspective, because the increasing competition for strawberry producers from Slatina is represented by producers from areas with intensive production on large areas. Appreciating that the production of quality strawberries, in addition to spa services, was the trademark of this area, the question remains open - in what way it is possible to stimulate producers to return production to the previous level. In this way, the manifestation itself would get its true meaning.

Hunting tourism. A good tourist-geographic position, a relative abundance of fauna, and an intact ecological balance provide solid conditions for the development of hunting tourism. In order to expand the tourist offer of Slatina, hunting and fishing tourism could potentially be activated by organizing trips for tourists to visit hunting grounds "Crni Vrh", "Kozara", "Bardača". Exhibitions of exhibits and trophies of shot game would contribute to the popularization of hunting tourism. However, there are certain limiting factors that characterize this type of activity, which are related to: poaching; inadequate structure of game in hunting grounds; insufficient nutrition in the off-vegetation period; construction of infrastructural facilities and housing units, which disrupts the peace in hunting grounds, etc. Otherwise, hunting tourism should be conceived in such a way as to attract certain segments of demand, but also to make it accessible to spa guests as a complementary content of their stay in the spa.

Countryside tourism. A tourist village is a village where tourists occasionally stay during holidays, vacations or weekends, in order to temporarily return to nature and the natural way of life. Most often, these villages are visited by residents of big cities, for whom the village is a touristic cultural framework, in which life takes place, different from their everyday life in noisy overpopulated cities (Ostojić, 2002). In order to determine the interest of certain households in rural tourism, a survey was conducted on two occasions in the area of the local community of Slatina (Slatina and Malo Blaško). The first survey was conducted in 2014, among household owners who potentially met the minimum requirements for engaging in this type of tourism. The aforementioned survey results showed that there was a respectable level of interest among the rural population in engaging in this type of business. The reasons were related to the existence of the economic crisis and the possibility of additional means of livelihood (Milinković & Crnogorac, 2014)

For the purposes of this paper, after ten years, a new survey was conducted (year 2023), with the same concept and question content, with the fact that 13 respondents gave their opinion on the new questionnaire, unlike the first questionnaire, when 24 household owners were questioned. In the mentioned period of less than a decade, part of the respondents who were surveyed in 2014 no longer wanted to give an opinion on this issue, and some moved abroad. The survey questionnaire consisted of 12 basic questions, thematically divided into two groups, where the first group is related to personal data and general information about rural tourism (Table. 2.), and the second concerns the interest of household owners in engaging in this type of activity (Table 3.). Spatially, six respondents are from Gornja Slatina, four from Babić brdo and three from Mali Blaško.

Table 2. Comparative analysis of surveys (in %) from 2023 and 2014 (in brackets) (personal data and general information about rural tourism)

Educational background	Members (number)	Source of income	Personal knowledge abous countryside tourism	Local values of Slatina	Personal tourism offer
Elementary school 8% (17%)	Less than four 69% (40%)	State owned company 38% (29%)	Not enough 0% (8%)	People and traditions 0% (4%)	Accommodation and food 84% (51%)
High school 69% (68%)	From four to six 31% (54%)	Agriculture 31% (54%)	Partially 77% (72%)	Village only 0% (4%)	Involvement of tourists in rural affairs 0% (4%)
College 23% (15%)	More than six 0% (6%)	Personal business 31% (17%)	Completely 23% (20%)	Nature 15% (22%)	Offer of various products 8% (12%)
				Total 85% (80%)	Total 8% (33%)

Source: (Milinković & Crnogorac, 2014; Milinković & Sredojević, 2023)

Looking at the comparative analysis of Table 2, it is noticeable that in a period of less than ten years there have been certain changes in the attitudes of the respondents. The decrease in the number of respondents with elementary school, and the increase with higher or higher education, is a real consequence of the spirit of the times in which we live. However, a pronounced change in the number of members within households is noticeable, where the number of surveyed households with less than four members increased by almost 20%, while those with more than six members are no longer among those surveyed. Also, there is a significant (especially for a survey of this type) decline in households for which agriculture is a source of income. Awareness of rural tourism has remained at the same level and is generally still insufficient. Certainly, the self-perception of the quality of the local offer related to this type of tourism, where its totality occupies more than 80%, is impressive. The decline in the quality of the personal offer to tourists should also be sought in the fact that the population is increasingly abandoning agricultural production, and one of the reasons for this is, in addition to psycho-social and climatic disturbances, which during the last decade have partially or completely made quality agricultural production impossible.

Table 3. Comparative analysis of polls (in %) from 2023 and 2014 (in brackets) (interest of household owners in rural tourism)

Socialisation of tourists	Benefits for the household	Conditions for rural tourism	Investments for the adaptation of the household	Readiness for education	Origin of guests
Yes 31% (69%)	Finances 100% (63%)	Yes 38% (41%)	I am ready 54% (42%)	Yes 85 % (87%)	Foreign 38% (62%)
No 69% (31%)	Druženje 0% (8%)	Partially 62% (59%)	I would wait for others 23% (21%)	No 0% (13%)	Domestic 0% (24%)
	Employment0% (29%)	No 0% (0%)	I am not sure 23% (37%)	I am not sure 15% (0%)	It is fine either way 62% (38%)

Source: (Milinković & Crnogorac, 2014; Milinković & Sredojević, 2023)

Analyzing Table 3, which deals with the issues of household owners' interest in engaging in rural tourism, we first observe a pronounced difference in terms of readiness for the active inclusion of potential tourist clientele in the life of a rural household (socialization). The reasons why even 69% of the respondents express their reluctance to socialize potential clientele can be found, among other things, in the reduction of the scope of agricultural activity of the respondents. Also, a very important indicator is the expectation of benefit, where the respondents during the second survey unanimously marked financial benefit as a priority, while socializing and even employment as offered answers remained in the background. To invest in the adaptation of their household, in case a program for the development of tourism is offered, about 50% of respondents said affirmatively during both surveys, which represents a satisfactory result. A very high percentage of 85% of the respondents wants to be further educated, while in the past decade there has been a kind of change of attitude in the decision to accept domestic or foreign guests, because this time a smaller percentage of respondents was ready to host exclusively foreign clientele. The aforementioned change of attitude on this issue can be traced to the fact that part of the respondents who during the previous survey expressed a desire to host foreign clientele, have since moved abroad, as a result of which, as we have already stated, the number of respondents in the second survey is smaller. In general, we can conclude that there is still a moderate level of interest of the Slatina population in providing this type of tourist service.

Congress tourism. This type of tourism ranks among the most profitable types of tourism, due to high non-boarding consumption and tourist traffic outside the main season. Unfortunately, it should be noted that this type of tourism is the biggest omission and shortcoming in Banja Slatina. Especially, because Banja Slatina has certain prerequisites, which give it comparative advantages for this type of tourism in the Republic of Srpska (closeness to the largest city center - Banja Luka, excellent tourist-geographical position, ambience, etc.). This approach necessitates the construction of a new hotel with a modern and modernly equipped congress hall. In terms of content, gatherings could be organized in the fields of: medicine, tourism, ecology, sports and recreation, then scientific, political and other gatherings.

DISCUSSION

Tourist motives with their components influence the attractiveness and selection of a tourist destination. Analyzing tourist motives, as well as the development of infrastructure, we obtain potential resources for placing the destination on the tourist market. In accordance with the above, and in accordance with the presented assessments of the development possibilities of various forms of tourism, it is possible to produce an orientation portfolio model for Banja Slatina, which refers both to the current state of the tourist offer, and to anticipated action in terms of improving tourism in the future (Tab. 4.).

Table 4. Portfolio-model of Banja Slatina

		IMPORTANCE OF THE MISSION		
		Great Importance	**Middle**	**Low Importance**
QUALITY	**High**	Spa tourism (TM* – H) Decision: 1. Increase capacity 2. Improve the quality	Excursion tourism (TM – H) Decision: 1. Attract clientele into the design project, improved quality	Eco tourism (TM – M) Decision: 1. Same as Excursion tourism
	Middle	Wellness (TM – H) Decision: 1. Magnify multiple times 2. Increase quality	Sports and recreational tourism (TM – H) Decision: 1. Build quality holding capacity	Event tourism (TM -L) Decision: 1. Design events and improve existing ones
	Low	Congress tourism (TM-H) Decision: 1. Significantly expand capacities with quality service	Countryside tourism (TM – L) Decision: 1. new investments required and promotion	Hunting tourism (TM – L) Decision: 1. In the current circumstances, significant results cannot be expected

* Market opportunities: H - high, M - medium, L - low

Source: (Milinković & Sredojević, 2023)

The analysis of resources determines special benefits and comparative advantages for the development of tourism. Environmental analysis analyzes the overall circumstances in which the development of tourism in the destination takes place (Jovičić, 2002). In this way, the strengths, weaknesses, opportunities and threats for the tourist destination are determined - SWOT analysis.

Strengths:

- Favorable tourist-geographic position
- A wealth of natural motifs
- Complementary cultural motives
- Environmental protection
- Proximity to the city of Banja Luka, as the largest broadcasting center in the Republic

- Motive rich and heterogeneous environment

Weaknesses:
- Seasonality of tourist traffic
- Lack of tourism management
- Disintegrated offer
- Insufficiently identifiable tourist product
- Long absence from the main tourist streams
- Lack of high category hotels for congress tourism
- Financial problems

Possibilities:
- Unification of all types of tourist offer
- Relatively broad issuing market
- Penetration into new markets
- Stronger positioning in the market
- Year-round business
- Development of tourism on rural farms
- Tourist offer at the regional level

Threats:
- Unstable political situation
- Strengthening of competitive destinations
- Failure to apply the principles of sustainable development
- Lack of financial resources in public budgets
- Departure of quality personnel
- Stretching suitable managerial structures
- Inconsistency of the provided service with the expectations of tourists

The previous analysis showed that Banja Slatina has strong assets as a tourist destination. However, it also has certain weaknesses, as well as a wide range of opportunities with very serious threats. Precisely such detailed analyzes should help define strategic development goals more easily. As we could see, the most significant comparative advantage of Banja Slatina (tourist-geographic position) has never been properly valued. In addition, a large number of opportunities for the development of various forms of tourism still remain unused. However, in addition to all of the above, the development of tourism must be strictly controlled. Precisely, the expansive and uncontrolled development of tourism during the past few decades, accompanied by many unwanted ecological, social and cultural consequences, imposed the need for the concept of sustainable development. As we know, sustainability can only be achieved by managing resources in such a way that they can be self-sustaining to the extent that they are used. Only in this way can the resources serve future generations.

FINAL CONSIDERATIONS

In the narrower area of the Banja Luka region, Banja Slatina represents one of three spas (Slatina, Laktaši, Srpska toplice), with a similar medical-rehabilitation

function, but with certain comparative advantages compared to the others. This, above all, refers to the landscape and ambient characteristics of Banja Slatina, as well as the possibility of developing various forms of tourism. The medicinal properties of the thermal mineral waters of this spa are quite wide ranging, and refer to: rheumatoid, cardiovascular, gynecological and even neurological diseases, which according to medical statistics are very common diseases.

In terms of tourist demand, Banja Slatina can permanently count on excursionists in addition to medical-rehabilitation and preventive services. Other specific segments of tourist demand would make up a smaller part of the market potential. Considering the natural potentials, tourist-geographic position, existing as well as potential capacities, in the future Banja Slatina should play a very significant role in the development of tourism and recreation in the wider area. Primarily because it is located near Banja Luka and the demand for services is increasingly directed towards the type of rehabilitation and recreational services that Slatina can provide with its natural and anthropogenic resources.

Limiting factors of development are related to: inadequate presentation of existing contents, insufficient adaptation of the infrastructure to tourist purposes, lack of investment in new contents, lack of creativity in designing tourist contents, insufficient involvement of the local community in relation to stimulating activities and administrative facilities. In general, the tourist offer of Banja Slatina still lags significantly behind the offer of the leading spa tourist center in Republic of Srpska - Banja Vrućica.

Respecting the objective conditions and possibilities of Banja Slatina, it can be concluded that they represent a quality basis for further development. These conditions indicate that in the future development of Banja Slatina should develop in the direction of more intensive development of tourism in general. According to the above, the tourist economy in Banja Slatina should represent the basis for other economic activities, especially small businesses and domestic handicrafts, bearing in mind that the existing natural conditions allow other activities to develop on the basis of the development of health tourism in Slatina, which will have a positive impact on increasing employment of the population, keeping it in the area and preventing the depopulation of the area.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

THE EFFECT OF DIMENSIONS OF BRAND PERSONALITY ON ACTUAL AND IDEAL SELF-IMAGE CONGRUENCE: EVIDENCE FROM STARBUCKS COFFEE BRAND

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Abstract: *The purpose of this study was to examine the simultaneous impact of brand personality dimensions on actual and ideal self-image congruence in a sample of Starbucks coffee shops.The data were gathered via an online survey of 471 customers of Starbucks coffee shops in Türkiye. Structural equation modelling was employed for the purpose of data analysis. It has been observed that excitement, which is a dimension of brand personality, has a positive effect on actual self-image congruence. Similarly, the sophistication dimension of brand personality has been found to positively affect ideal self-image congruence. Therefore, it can be said that while Starbucks customers tend to show their actual self-image congruence with the excitement dimension of brand personality, they tend to show their ideal self-image congruence with the sophistication dimension of brand personality. This study represents an inaugural attempt to demonstrate the impact of brand personality dimensions on self-image congruence within the context of branded coffee shops. The results contribute to the growing body of knowledge regarding the relationship between brand personality dimensions and ideal and actual self-image congruence, which is still in its infancy in academic literature.*

Keywords: *Brand Personality, Actual Self-Image Congruence, Ideal Self-Image Congruence.*

JEL classification: *M31*

INTRODUCTION

A discernible shift in consumption patterns has been observed, whereby there has been a shift away from a rational, utilitarian approach towards an experiential or emotional orientation (Czinkota et al., 2021). One of the most illustrative examples of this shift is the substantial rise in the demand for coffee (particularly branded varieties), which is consumed by approximately one-third of the global population. Coffee is one

of the most consumed beverages globally, with production occurring in over 70 countries (Samoggia & Riedel, 2019). It is evident that the demand for coffee shops, which represent one of the primary locations for coffee consumption and serve as social hubs where consumers seek community outside of their immediate circles, has increased globally (Ren et al., 2023). Furthermore, in Türkiye, branded coffee shops, which offer a variety of coffee beverages and are situated in urban centres, have emerged as prominent socialisation spaces in recent years. This has occurred concurrently with a notable increase in coffee consumption in Türkiye, driven by the proliferation of national and international coffee shop chains (Şahin, 2023; Bayındır & Çalışkan, 2022).

The Starbucks coffee shop brand is the most renowned, with over 38,038 stores operating in 83 countries worldwide (Statista, 2024b) Starbucks is the 31st most valuable of the 500 global brands, with an approximate economic value of 38 billion dollars (Moon et al., 2023b). Türkiye also plays an important role in Starbucks' global operations, ranking second in Europe after the United Kingdom with 676 stores (Statista, 2024a). It is of significant interest to both practitioners and academics to gain insight into the factors that have contributed to the remarkable success of the Starbucks brand. In this context, the Starbucks brand has attracted the attention of many academics, with numerous studies conducted on the Starbucks brand including variables such as brand equity (Susanty & Kenny, 2015; Ren et al., 2023), brand image (Tu & Chang, 2012; Areiza-Padilla & Taulet , 2023), brand trust (Moon et al., 2023a), brand symbolism, brand evangelism (Osmanova et al., 2023), and brand love and brand loyalty (Polat & Çetinsöz, 2021). Nevertheless, an examination of the existing literature on the Starbucks brand reveals a dearth of studies on brand personality (Lin & Huang , 2012; Nabila & Albari, 2024) and a similarly limited corpus of research on self-image congruence (hereafter SC) (Anjani & Dewi, 2021). Moreover, no study has yet been identified that examines the impact of brand personality on SC within the Starbucks context. Nevertheless, brand personality has been identified as a crucial antecedent of SC (Su & Reynolds, 2017; Kim, 2023; Sop & Kozak, 2019; Nguyen et al., 2023). Given the significant impact of SC on a range of consumer behaviours, from brand choice to brand loyalty (Wu et al., 2020; Liu et al., 2012; Li et al., 2020), it is valuable to examine this variable in conjunction with brand personality, which is a key antecedent. In the context of developing highly competitive coffee brands in Türkiye's dynamic and challenging competitive environment, empirical research examining the relationship between brand personality and SC represents a significant academic, practical and meaningful challenge.

The concept of brand personality can be defined as the process of associating and reconciling human characteristics with a brand (Aaker J. , 1997). The concept of brand personality is of pivotal importance in the understanding of consumer behaviour and the success of a brand (Babu & LavanyaLatha, 2018). It has attracted significant attention from both an academic and a practitioner perspective. SC can be defined as the alignment between the consumer's perception of a product, store, or brand and their own self-image(Kressmann et al., 2006). It is hypothesised that human characteristics can provide insight when evaluating a brand, and that brand personality emerges as a result of people seeking a connection and consistency between the brand images they adopt and their own images. In this context, brand personality is developed for consumers to express their actual or ideal self, and is defined as the array of human

features that consumers ascribe to a brand (Aaker J. , 1997). The aforementioned statements and explanations are consistent with the tenets of Sirgy's (1982) self-congruence theory. Self-congruence theory postulates that individuals engage in the evaluation and analysis of products, services, or brands in a manner that is consistent with the defining characteristics and aspects of their self-concept (Sirgy, 1982). Our study is based on this perspective and it is important to examine brand personality as a potential antecedent of SC. Despite recent research into the effect of brand personality on SC in the tourism sector (Su & Reynolds, 2017; Kim, 2023; Nguyen et al., 2023; Sop & Kozak, 2019), the number of studies in other sectors remains limited (Hellemans et al., 2023). Furthermore, an absence of studies examining the interrelations between these variables has been identified in the context of coffee shops, which has experienced exponential growth both globally and within Türkiye in recent years. The present study will contribute to the existing literature by addressing this gap and elucidating the relationship between these two variables, which are still in their infancy. Accordingly, the objective of this study was to examine the simultaneous impact of brand personality dimensions on actual and ideal self-congruence. The following sections of the study comprise a review of the relevant literature and hypotheses development, followed by the methodology, data analysis and findings. Finally, the article ends withthe conclusion section.

LITERATURE REVİEW AND HYPOTHESES DEVELOPMENT

Brand personality

Aaker (1996) posits that the concept of brand personality can be understood as a distinctive assemblage of brand-related memories that are shaped through the relationship that is established with the target audience. Aaker, basing his approach on the concept of personality, has reduced the concept of brand personality to five dimensions: sincerity, sophistication, competence, rudgedness and excitement. The dimensions of sincerity are represented by characteristics such as honest, down-to-earth, wholesome and cheerful. The dimensions of excitement are represented by characteristics such as spirited, daring, imaginative and up-to-date. The dimensions of competence are represented by characteristics such as intelligent, reliable and successful. The dimensions of sophistication are represented by characteristics such as upper-class and charming. Finally, the dimensions of rudgedness are represented by characteristics such as outdoorsy and tough (Aaker J. , 1997).

Brands are evaluated as if they were living beings, chosen as if they were friends, and loved as if they were human (King, 1970). The presence of brand personality traits in the brand, which are consciously perceived and evaluated positively by the consumer, serves to facilitate the decision-making process (Tran et al., 2023; Toldos-Romero & Gómez, 2015; Rup et al., 2021). Moreover, brand personality traits contribute to an increase in consumer trust and loyalty towards a brand, thus facilitating the formation of a robust and enduring relationship between the brand and the customer (Bouhlel et al., 2011; Valette-Florence & Valette-Florence, 2020; Villagra et al., 2021). Additionally, brand personality enables differentiation from competitors (George & Anandkumar, 2018) and facilitates adaptation to diverse cultural contexts (Aaker et al., 2001). In other words, brand personality contributes to the value of the brand in a number of ways and affects the brand itself.

Self-congruence theory and SC

Sirgy's (1982) self-congruence theory suggests that when an entity (e.g. a brand) is perceived to enhance or confirm a person's self-concept, the person in question exhibits more positive attitudes and behaviours towards that entity. In accordance with the self-congruence theory, consumers utilise brands as a means of accentuating specific elements of their identity, as a means of demonstrating their affiliation with a particular group, and as a symbol of status (Zhu et al., 2019). The self-congruence theory posits that the congruence between a brand image and an individual's self-concept encourages positive behaviour in brand choice (Sirgy, 1985). Accordingly, self-congruence theory posits that self-concept exerts a significant and pervasive influence on consumers' decisions regarding products and services (Wilkie & Rao Hill, 2022). Self-congruence is comprised of four distinct dimensions: actual, ideal, social, and ideal social. The actual self can be defined as the consumer's real self, that is, how they perceive themselves. The ideal self can be defined as the self that the consumer aspires to be. The social self can be defined as how they believe they are perceived by others. Finally, the ideal social self can be defined as how they would like to be perceived and regarded by others (Sirgy, 1982). However, the majority of studies addressing SC in its dimensions (Hellemans et al., 2023; Hosany, 2016; Usakli & Baloglu, 2011; Ibrahim & Najjar, 2008) have examined the self-concept in two dimensions, namely actual and ideal. These two types of SC are most commonly used and have received the strongest empirical support. Accordingly, in this study, the concepts of real and ideal self were analysed in the same way. SC can be defined as the alignment between the consumer's perceptions of a product, store, or brand and their own self-image (Kressmann et al., 2006). Indeed, this definition may be regarded as an accurate representation of actual self-congruity (Hosany, 2016; Yen & Mai, 2020). Additionally, SC is referred to in the literature as self-congruity. This concept has been demonstrated to affect a number of factors, including the consumer's brand choice and loyalty (Wu et al., 2020; Li et al., 2022; Liu et al., 2012). The congruence that emerges in line with the connection between the product preferences that overlap with the identity desired by the individual and the image of these products is called the ideal SC. This concept is shaped according to the characteristics of the person the consumer desires to be (Choi & Rifon, 2012). In the context of the ideal SC, the individual may tend to consume certain well-known brands to reflect his/her preference for goods and services that are compatible with his/her exemplary or imaginary personality (Sirgy, 2015; Li et al., 2020). In addition, it is not uncommon for consumers to have discrepancies between their ideal self and their real self. In this context, the pursuit of self-transcendence and personal growth serves to increase self-esteem and thus motivates the individual to strive for an ideal self-concept (Sirgy et al., 2000).

Implications of brand personality for SC

The most widely used definition of brand personality, conceptualised and expanded on the level of self-concept, is that proposed by Aaker (1997). This definition is related to the people approach and the striving to achieve brand-consumer relationships based on a set of beliefs about the brand and its desired identity (Leflot et al., 2010). In making a choice between brands, individuals differentiate themselves from others by selecting those that align with their personalities (Aaker J. , 1997). It is proposed by

researchers that human characteristics inform brand evaluation, with brand personality emerging as a result of individuals seeking a connection and consistency between their own images and the brand images they adopt. In this context, brand personality is produced for consumers to express their actual or ideal selves. The term is defined as the collective set of human characteristics ascribed to a brand by consumers (Aaker J. , 1997). There is a relationship between the brand personality and the consumer image (Parker, 2009; Aaker J. , 1997). These statements and explanations are consistent with the self-congruence theory proposed by Sirgy(1982). The self-congruence theory posits that individuals evaluate and analyse services, products or brands in accordance with the characteristics and aspects that define their self-concept (Sirgy, 1982). Malär et al. (2011) posit that brand personality that is in alignment with consumers' self-concepts has a positive impact on consumers' psychology, and that consumers will continue their relationship with the brand as long as this alignment persists. Moreover, it is essential to recognise that the various dimensions of brand personality do not exert a uniform influence on consumers. Indeed, each dimension has a distinctive impact on consumers (Louis & Lombart, 2010). Consequently, the various dimensions of brand personality are not equally associated with self-congruence (Parker, 2009; Su & Reynolds, 2017). In light of the aforementioned arguments, it is necessary to examine the impact of each dimension on SC separately.

A number of empirical studies have demonstrated the impact of brand personality on SC. It has been demonstrated that the dimensions of brand personality, namely sincerity and excitement, exert a positive influence on SC (Su & Reynolds, 2017). In his research on global hotel companies, Kim (2023)demonstrated that brand personality has a positive effect on both real and ideal SC. The impact of brand personality on ideal SC was more pronounced than its influence on actual SC. In their study of the Facebook brand, Hellemans et al. (2023). demonstrated that emotionality and responsible brand personality dimensions exert a positive influence on both real and ideal SC. In their study on Vietnamese tourists, Nguyen et al. (2023) examined the impact of brand personality dimensions on SC. The results indicated that brand personality in all dimensions positively affects SC, with the excitement dimension showing the greatest effect. Usakli and Baloglu (2011) examined the impact of brand personality dimensions on SC in the Las Vegas sample. They found that, with the exception of competence, all dimensions of brand personality positively influenced real SC. In addition, all dimensions except contemporary were found to affect the ideal SC. In the study conducted by Sop and Kozak (2019) on five-star hotels, it was demonstrated that brand personality has a positive impact on SC. In alignment with the aforementioned explanations, this study proposes the following hypotheses for examination within the structural model:

H1 : Each Starbucks brand personality dimension hasits own benefits in estimating actual SC.

H2 : Each Starbucks brand personality dimension has its own benefits in estimating ideal SC.

See Fig. 1 for study's research model.

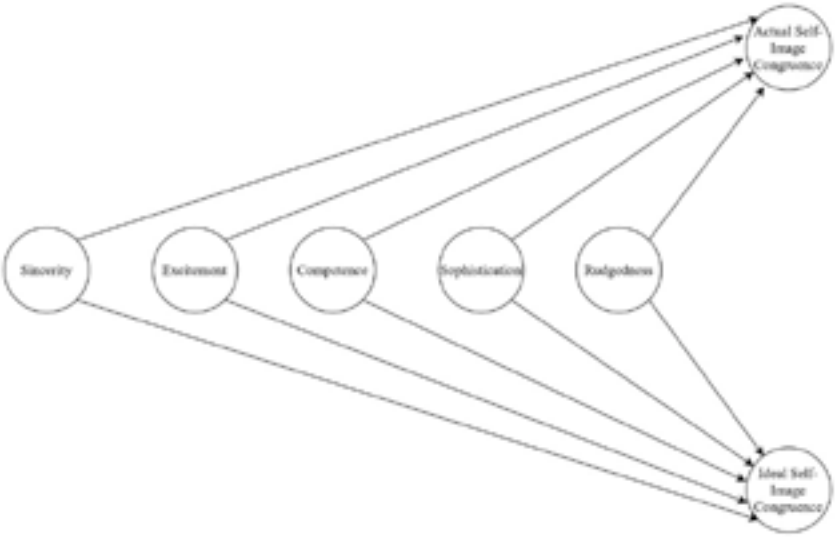

Figure 1. Research model

Source(s): Created by authors

METHOD, DATA ANALYSİS AND FİNDİNGS

Measurement, sampling and data collection

The study employed an online survey methodology, targeting individuals who follow the official Starbucks coffee social media accounts in Türkiye. All participants in the study are customers who visit Starbucks coffee shops with a frequency of at least once or twice a month. The respondents were required to provide information regarding their socio-demographic characteristics, including gender, age, educational attainment, monthly household income, and the frequency with which they visit Starbucks coffee shops. A total of 30 questions were asked, 25 questions regarding brand personality and SC. In this study, the scales developed by Aaker (1997) for brand personality and the scales developed by

Rabbanee et al. (2020) for actual SC and ideal SC were used. A 5-point Likert-type scale was used for measure the degree of agreement with real and ideal SC items. Brand personality items were asked as follows: "Please visualize Starbucks coffee as if it is a person in your mind, and mark the following statements according to their degrees (1-5)"

Table 1: Measurement items

Construct	Dimension	Item No	Measurement items	Source
Brand Personality	Sincerity	SN 1	Down-to-earth	(Aaker, 1997)
		SN 2	Honest	
		SN 3	Wholesome	
		SN 4	Cheerful	
	Excitement	EX 1	Daring	
		EX 2	Spirited	
		EX 3	Imaginative	
		EX 4	Up-to-date	
	Competence	CM 1	Reliable	
		CM 2	Intelligent	
		CM 3	Successful	
	Sophistication	SP 1	Upper-class	
		SP 2	Charming	
	Rudgedness	RD 1	Outdoorsy	
		RD 2	Tough	
Actual SC	-	AS 1	The personality of Starbucks coffee is consistent with how I see myself.	(Rabbanee et al., 2020)
		AS 2	The personality of Starbucks coffee is a mirror image of me.	
		AS 3	People who use Starbucks coffee are similar to how I see myself.	
		AS 4	People who prefer Starbucks coffee are identifiable with me at present.	
		AS 5	The image of a typical Starbucks coffee user is highly consistent with how I see myself.	
Ideal SC	-	IS 1	The personality of Starbucks coffee is consistent with how I would like to be.	(Rabbanee et al., 2020)
		IS 2	The personality of Starbucks coffee is a mirror image of the person I would like to be.	
		IS 3	People who use Starbucks coffee are similar to how I would like to see myself.	
		IS 4	People who prefer Starbucks coffee are identifiable with my ideal self-image.	
		IS 5	The image of a typical Starbucks coffee user is consistent with how I would like to see.	

Note(s): SN (Sincerity), EX (Excitement), CM (Competence), SP (Sophistication), RD (Rudgedness), AS (Actual Self-İmage Congruence), IS (İdeal Self-İmage Congruence)

Source(s): (Aaker J. , 1997; Rabbanee et al., 2020)

The universe of the research includes all Starbucks coffee shops customers in Türkiye. As can be seen in Table 2 below, the sample consists of 213 women, 258 men and 471 individuals aged 18 and above who are customers of Starbucks coffee shops in

Türkiye. The research employed an online survey methodology, disseminating a link to the target population via the official Starbucks coffee social media accounts.

Table 2: Respondent attributes

		Frequency	Percentage %	Cumulative Percentage
Gender	Male	258	54,8	54,8
	Female	213	45,2	100
	Total	471	100	
Age	18-30	331	70,3	70,3
	31-45	92	19,5	89,8
	46-55	29	6,2	96,0
	56-65	7	1,5	97,5
	66 and above	12	2,5	100,0
	Total	471	100	
Educational qualification	Secondary school	105	22,3	22,3
	High School	114	24,2	46,5
	Undergraduate	216	45,9	92,4
	Master	23	4,9	97,2
	Doctorate	13	2,8	100,0
	Total	471	100	
Monthly income (TL)*	0-17.000	13	2,8	2,8
	17.001-37.000	85	18,0	20,8
	37.001- 57.000	160	34,0	54,8
	57.001-77.000	118	25,1	79,8
	77.001-97.000	67	14,2	94,1
	Over 97.000	28	5,9	100,0
	Total	471	100	
Frequency of going to Starbucks coffee shops	1 and 2 per month	126	26,8	26,8
	once a week	87	18,5	45,2
	2 and 3 weeks	138	29,3	74,5
	4 and 5 weeks	86	18,3	92,8
	Diary	34	7,2	100,0
	Total	471	100	

*1 US Dollar is equivalent to 33 Turkish Lira (TL)

Source(s): Created by authors

The majority of participants in the sample group were male (54.8%). When the age factor was considered, the age group with the highest representation was 18-30 years old (70.3%). Subsequently, the 31-45 age group constituted 19.5% of the sample, while the 46-55 age group accounted for 6.2%. The 66-plus age group and over repre-

sented 2.5% of the sample. It was established that the lowest level of participation was 1.5% in the 56-65 age group. This indicates that the majority of participants are young people. An examination of the educational qualifications of the participants reveals that 45.9% are undergraduate students, 24.2% have completed high school, 22.3% have obtained a secondary school qualification, 4.9% are master's graduates, and finally, 2.8% are doctorate graduates. The participants were customers who visited Starbucks coffee shops at least once or twice a month.

Data analysis and findings

In the research, the structural equation model was estimated using the Partial Least Squares (PLS-SEM) method with the Smart PLS 3(Ringle et al., 2015) statistical program. The initial step was to conduct tests of the scale's validity and reliability. In this context, the Cronbach alpha coefficient was employed to assess internal consistency reliability (Hair et al., 2017), while factor loadings were used to evaluate item reliability (Hair et al., 2010). Additionally, the Heterotrait-Monotrait (HTMT) Criterion, cross-loadings, and the Fornell-Larcker Criterion values for discriminant validity (Hair et al., 2017; Henseler et al., 2015) were examined. Furthermore, the average variance values for convergent validity (Fornell & Larcker, 1981) were also considered. Subsequently, the Partial Least Squares method was employed for the estimation of the structural equation model.

Table 3: Factor loadings, cronbach's alpha and ave values

Variables	Item	Factor Loading >0.5	Average Variance Extracted-AVE>0.5	Cronbach's alpha (>0.7)
Sincerity	SN 1	**0,895**	**0,792**	**0,796**
	SN 2	**0,795**		
	SN 3	**0,868**		
	SN 4	**0,802**		
Excitement	EX 1	**0,791**	**0,853**	**0,894**
	EX 2	**0,893**		
	EX 3	**0,889**		
	EX 4	**0,793**		
Competence	CM 1	**0,894**	**0,788**	**0,794**
	CM 2	**0,876**		
	CM 3	**0,793**		
Sophistication	SP 1	**0,898**	**0,812**	**0,896**
	SP 2	**0,828**		
Rudgedness	RD 1	**0,738**	**0,747**	**0,822**
	RD 2	**0,803**		

Actual SC	AS 1	**0,891**	**0,818**	**0,894**
	AS 2	**0,785**		
	AS 3	**0,895**		
	AS 4	**0,867**		
	AS 5	**0,888**		
Ideal SC	IS 1	**0,797**	**0,793**	**0,898**
	IS 2	**0,866**		
	IS 3	**0,824**		
	IS 4	**0,907**		
	IS 5	**0,898**		

Source(s): Created by authors

Table 4: Cross loadings

	Sincerity	Excitement	Competence	Sophistication	Rudgedness	Actual SC	Ideal SC
SN1	**0,895**	0.586	0.553	0.522	0.647	0.442	0.597
SN2	**0,795**	0.609	0.559	0.635	0.655	0.542	0.397
SN3	**0,868**	0.490	0.661	0.538	0.658	0.341	0.401
SN4	**0,802**	0.690	0.563	0.648	0.628	0.541	0.501
EX1	0.690	**0,791**	0.461	0.631	0.557	0.343	0.393
EX2	0.492	**0,893**	0.665	0.635	0.558	0.445	0.497
EX3	0.670	**0,889**	0.466	0.549	0.643	0.440	0.402
EX4	0.575	**0,793**	0.572	0.641	0.647	0.543	0.394
CM1	0.558	0.571	**0,894**	0.563	0.547	0.436	0.399
CM2	0.650	0.560	**0,876**	0.684	0.540	0.537	0.418
CM3	0.660	0.675	**0,793**	0.562	0.643	0.434	0.398
SP1	0.527	0.541	0.572	**0,898**	0.426	0.426	0.426
SP2	0.639	0.649	0.675	**0,828**	0.532	0.631	0.323
RD1	0.620	0.654	0.681	0.623	**0,738**	0.426	0.418
RD2	0.612	0.699	0.643	0.692	**0,803**	0.383	0.394
AS1	0.439	0.438	0.426	0.423	0.431	**0,891**	0.558
AS2	0.433	0.439	0.441	0.434	0.440	**0,785**	0.561
AS3	0.548	0.449	0.436	0.426	0.441	**0,895**	0.551
AS4	0.337	0.448	0.440	0.421	0.440	**0,867**	0.545
AS5	0.436	0.435	0.423	0.419	0.429	**0,888**	0.554
IS1	0.405	0.404	0.409	0.429	0.396	0.458	**0,797**
IS2	0.390	0.393	0.502	0.418	0.387	0.558	**0,866**
IS3	0.503	0.302	0.407	0.427	0.395	0.561	**0,824**
IS4	0.395	0.398	0.307	0.523	0.391	0.598	**0,907**
IS5	0.400	0.329	0.504	0.424	0.491	0.556	**0,898**

Source(s): Created by authors

Table 5: Fornell-larcker criterion values

	EX	AS	IS	SP	SN	RD	CM
EX	0,924						
AS	0,547	0,904					
IS	0,600	0,660	0,891				
SP	0,647	0,430	0,426	0,901			
SN	0,662	0,443	0,400	0,635	0,890		
RD	0,690	0,441	0,393	0,631	0,627	0,864	
CM	0,699	0,438	0,407	0,676	0,562	0,649	0,888

Source(s): Created by authors

As can be seen in Table 3 above, item reliability was ensured since all factor loadings were higher than 0.5. Internal consistency reliability were provided since Cronbach's Alpha values for the variables were higher than 0.7, and Convergent validity were provided because the average variance values were higher than 0.5 (Hair et al., 2017). Two criteria were used for discriminant validity. The first of these is cross-loading (table 4). According to this criterion, the factor loading of the variable under which an expression is included must be higher than the factor load of other variables. The second is the Fornell-Larcker criterion (table 5). The values are compared with the values of other variables and the diagonal values are expected to be the largest. When examined in this direction, it can be seen that discriminant validity is achieved.

Table 6: Results ofstructural equation model

Path	β	S.S.	T value	P value
Sincerity ->Actual SC	-0,056	0,195	0,215	0,415
Sincerity -> Ideal SC	0,334	0,417	0,665	0,253
Excitement->Actual SC	0,349	0,224	2,185	0,048
Excitement -> Ideal SC	-0,236	0,484	0,368	0,357
Competence ->Actual SC	-0,054	0,147	0,281	0,389
Competence-> Ideal SC	-0,237	0,318	0,757	0,225
Sophistication ->Actual SC	0,057	0,150	0,321	0,374
Sophistication-> Ideal SC	0,620	0,179	3,308	0,000
Rudgedness->Actual SC	0,159	0,141	1,107	0,134
Rudgedness-> Ideal SC	-0,056	0,167	0,154	0,439

Source(s): Created by authors

The PLS results of the structural model are shown graphically in Figure 2 below.

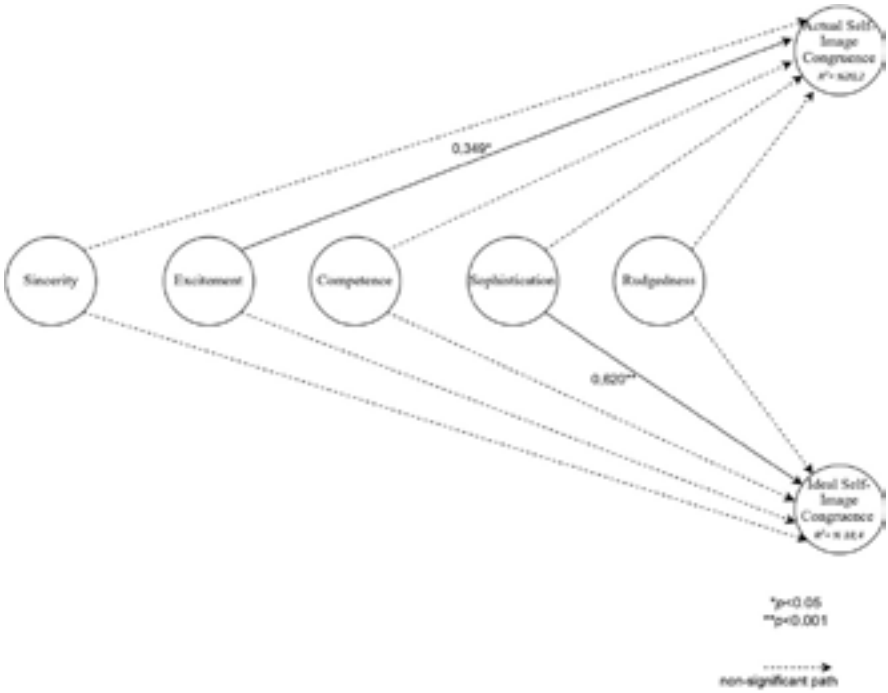

Figure 2. PLS results of the structural model

Source(s): Created by authors

The brand personality dimension, excitement affects the actualSC positively (β = 0.349 t = 2.185 p <0.05). In addition, sophistication, another dimension of brand personality, positively affects ideal SC (β = 0.620 t = 3.308 p <0.001).Therefore, it can be said that the H1 and H2 hypothesis are partially accepted. 20.2% of the variance in the actual SC variable and 18.4% of the variance in the ideal SC variable were explained.

CONCLUSION

Theoretical implications

Despite recent applications (Su & Reynolds, 2017; Hellemans et al., 2023; Nguyen et al., 2023) the effects of brand personality dimensions on SC remain an understudied topic. This study represents the inaugural attempt to demonstrate the impact of brand personality dimensions on SC, with branded coffee shops serving as the illustrative example. The global consumption of coffee and the number of branded coffee shop chains are both increasing. The global coffee shop chain Starbucks, which is the most well-known and successful in the world, has made a significant contribution to the growth of the coffee shop market. Türkiye also occupies a notable position in terms of the number of Starbucks coffee shops, and it is a country where both national and global coffee chains are experiencing growth. Additionally it is important to examine consumers' SC, which affects many factors from brand choice to loyalty (Liu et al., 2012; Wu et al., 2020; Li et al., 2020), together with brand personality, which is one of its significant antecedents. The effect of brand personality on SC in the tourism sector has been the subject of recent investigation in the literature (Su & Reynolds, 2017;

Kim, 2023; Nguyen et al., 2023; Sop & Kozak, 2019). However, the number of studies in other sectors is limited (Hellemans et al., 2023), and there are no studies on coffee shops. Accordingly, the objective of this study was to examine the impact of brand personality dimensions on actual and ideal SC among Starbucks coffee shop customers in Türkiye.

The findings of this study indicate that excitement, a dimension of brand personality, has a positive effect on actual SC. Furthermore, it has been observed that another dimension of brand personality, namely sophistication, has a positive effect on ideal SC. Consequently, as the level of excitement associated with the Starbucks brand among customers increases, so too does the degree to which customers associate the Starbucks brand with their own personal identities. Similarly, as the level of sophistication ascribed to the Starbucks brand by its customers increases, so too does the degree to which customers associate the Starbucks brand with their ideal selves.

A synthesis of the results of this study and the relevant literature reveals two fundamental elements. Firstly, the dimensions of brand personality exert varying effects on SC, with some exerting no effect whatsoever. Similar results have been reported in other studies (Nguyen et al., 2023; Usakli & Baloglu, 2011). The second noteworthy element is that brand personality, or a specific brand personality dimension, exerts disparate effects on actual and ideal SC. Similarly, other studies in the literature have yielded comparable results (Kim, 2023; Nguyen et al., 2023). It is hypothesised that this result is caused by the fact that consumers reconcile brand personality dimensions in different proportions in their actual and ideal SC. The aforementioned differences can assist organisations in determining the dimensions of brand personality that should be prioritised in order to enhance consumer SC. Furthermore, the impact of brand personality dimensions varies across studies. For example, Usakli and Baloglu (2011) found that, with the exception of competence, all dimensions of brand personality had a positive effect on actual SC, while all dimensions except contemporary had a positive effect on ideal SC. The findings of this study indicate that excitement has a positive influence on actual SC, while sophistication has a positive influence on ideal SC. The observed difference in results may be attributed to the fact that consumer characteristics vary across sectors and brands.

Practical implications

It is anticipated that the findings will offer novel insights into the nascent market of branded coffee shops and may have significant implications and recommendations for both academic researchers and experts in the fields of brand personality and SC. The findings of this research indicate that customers of Starbucks tend to demonstrate their actual SC with the brand personality excitement dimension, whereas they tend to demonstrate their ideal SC with the brand personality sophistication dimension. In light of these findings, it would be prudent for those responsible for the stewardship of the Starbucks brand to direct their attention towards the dimensions of excitement and sophistication. By identifying the attributes that evoke the excitement dimension, the Starbucks brand can be enhanced to align more closely with the actual self-concept of its customers. Similarly, by emphasising the elements that exemplify the sophistication dimension, the brand can be elevated to better reflect the ideal self-concept of its customers. As previously stated, excitement brand personality is associated with attributes

such as spirited, daring, up-to-date and imaginatine. The concept of sophistication is associated with characteristics that may be perceived as charming and upper-class. In light of the aforementioned characteristics, it is evident that these are the key areas that require attention in the development of the Starbucks coffee brand. It is essential that these features be emphasised in all aspects of the brand. It is therefore essential to concentrate on the products themselves, the service experiences offered, the characteristics of the staff, the atmosphere created in the stores, and other relevant elements. As a consequence of these endeavours, consumers' SC will be enhanced. Furthermore, the results of both actual and aspirational SC can assist the brand in identifying potential customers within the context of market research. It may also be recommended that the Starbucks brand create specialised departments with the objective of implementing improvements to its current brand personality, with a view to further enhancing customers' real and ideal SC. It is further recommended that other branded coffee shops conduct their own market research on the subject and identify the features that should be the focus of their attention.

Limitations and future work

In light of the findings and limitations of the study, recommendations can be put forth for future research. It is recommended that future studies consider including a larger proportion of middle-aged people in the sample, given that the majority of participants in this study were young individuals. Furthermore, it would be beneficial to expand the geographical scope of the selected sample group beyond Türkiye to encompass other countries. Finally, it would be recommended that future studies examine other brands as well.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

CHALLENGES OF MIGRATION OF STUDENTS IN EASTERN CROATIA

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Abstract: *The purpose of this research is to describe student's intentions of migration and their satisfaction with life in the home country and also the factors that are important for staying in Croatia. Research also investigate how sociodemographic characteristics are connected to student's intention of migration from Eastern Croatia. The differences between gender, age, household income, place of residence, average grade in the previous part of the study, student status and close friends/family members live abroad were examined. This research was conducted on 420 students in Eastern Croatia during January and April 2023. Data was analyzed using SPSS and descriptive statistical analysis and Mann Whitney and Kruskal Wallis test. Research results identified that gender, place of residence, average grade in the previous year of the study, close friends/family members live abroad didn't have significant impacts on the intention of migration. Age, household income and student's status have significant impacts on the intention of migration. The results also recognized that most respondents are satisfied with life in Croatia and believe that Croatia is better than other countries.*

Keywords: *demographic characteristics, migration, Slavonia & Baranja*

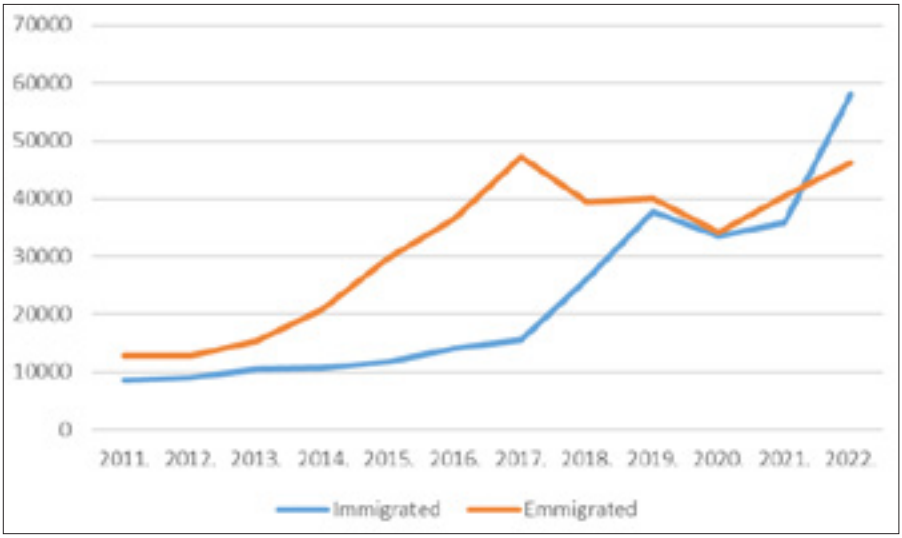
JEL classification: *J60*

INTRODUCTION

The gap between the underdeveloped and the developed part of the globalized world is growing. With globalization, migration is becoming an increasingly important factor shaping the global economy. In the developed world, it is impossible not to notice how much the term migration has started to be used in everyday speech, especially in the 21st century. Although the Republic of Croatia is traditionally a country of emigration, previous emigration and the current state of emigration has a strong impression on Croatian society. Since 2008, when the economic crisis started, Croatia has been experiencing large emigrations (Croatian Bureau of Statistics, 2023.) and with Croatia's accession to the European Union 2013., a new negative phase in its

demographic development began (Strmota, 2020.) This last emigrant wave perhaps is also the most unfavorable so far because it takes place in the circumstances of the accelerated aging of the population, natural decline and reduced fertility and total depopulation. What is particularly worrying is the high youth unemployment rate and the low share of the highly educated in the total percentage of the Croatian population.

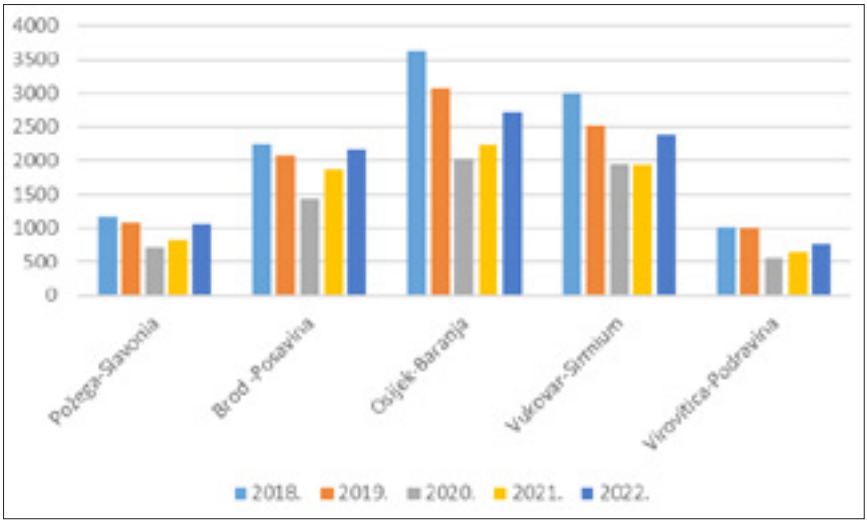
According to the latest data from the National Bureau of Statistics, Croatia remains without its own population, which is shown in the following graph.



Graph 1. Relationship of emigration and immigration in Croatia

Source: authors according to (Croatian Bureau of Statistics, 2023.)

The graph shows that in the period between 2011 and 2022, about 375, 555 people left Croatia. As for the age structure of emigrants, "the largest share in 2022 is the population aged 20-39 (44,1%)" (Croatian Bureau of Statistics, 2023.), which indicates the fact that the majority is made up of young people. In the 2022. after years and years Croatia had a positive net migration (11 685). The reason for this is the large number of immigrants, even 19.3% persons arrived from Ukraine. A large proportion of authors like (Mesarić Žabčić, 2021.) consider that Croatian population will continue to decline, with expected further demographic decline especially including the emigration of the young people or (Jerić, 2019.) who believes that Croatia will lose 20% of its population in the next thirty years. Precisely for these reasons, it is necessary to develop new economic, pension, educational and other policies that will affect demographic changes. (Petreska, Prodanova, & Kocarev, 2023.) especially emphasize education (quality, efficiency and reputation) and that students should be able to recognize their education as beneficial for their professional future in the country. The following graph shows the emigration from Eastern Croatia region.



Graph 2. The emigration from counties of Eastern Croatia

Source: authors according to (Croatian Bureau of Statistics, 2023.)

The graph shows international emigration of the population of Eastern Croatia which includes five counties: Pozega-Slavonia County, Brod-Posavina County, Osijek-Baranja County, Vukovar- Sirmium County and Virovitica- Podravina County. There has been a slight increase in emigrants in the last 3 years in all counties. The situation in Eastern Croatia (Slavonia and Baranja), which used to be one of the richest Croatian regions, is much worse than in the rest of the country. The main characteristics are the sale of land, houses, poverty, agricultural production falls and disappears and emigration of the population. Demographer (Živić, 2017.) states that compared to other Croatian counties, this part is populated below average and the overall depopulation will continue and will take on more drastic proportions.

The main purpose of this work is to investigate why people move out of the area of Eastern Croatia, as well as why they stay in this area. Based on the above-mentioned considerations, this paper raises several research questions related to propensities to migrate. The mentioned research questions are:

How important are sociodemographic characteristics when intending to go abroad?

What encourages the local population to leave or keeps them staying in the county?

How the local population sees Croatia, as a desirable or undesirable place to live in?

In accordance with the aim and research question of the research, the following hypotheses were defined:

H1: Gender affects migration intention.

H2: The place of residence affects migration intention.

H3: Age affects migration intention.

H4: Socioeconomic status affects migration intention.

H5: Student status affects migration intention.

H6: The average grade in the previous part of the studies affects migration intention.

H7: Close family members/friends living abroad affects migration intention.

The results of this research can be used to discover ways mitigation of emigration.

LITERATURE REVIEW

Research on the migration has a long history. However, causes focused on the study of demographic change is expanding. Although most of the existing research deals with migration intention, a smaller number of researches pay attention to other sociodemographic characteristics that can also have an impact on migrations. In Croatia, so far there is no research on students from Eastern Croatia on the connection between socio-demographic characteristics and the intention to migrate.

E. Lee's theory says that there are pull and push factors in migration. (Lee, 1966.) Push and pull factors for the intention to migrate are the topic of many authors. The most common push factors for leaving the country are work opportunities and environment, political situation (Ružić, Jurčević, Ramljak, & Luchetti, 2023.), greater possibility of finding a job and the possibility for better incomes (Mrvica Mađarac, 2018.) corruption (Kurecic, Kokotovic, & Haluga, 2023.) (crime, poverty while among the attractive factors stand out are better prospects in employment, improvement of material status and, accordingly, better living conditions and a better future for individuals and families. (Perić Pavišić, Šakić, & Rihtar, 2022.) (Ivandić, 2021.) proved there is a relationship between net migration or migration abroad and tourism activity. It is evident from previous research that the migration of people from Croatia is mainly influenced by economic and social factors. (Draženović, Kunovac, & Pripužić, 2018.) showed that both economic and noneconomic factors are relevant for emigration decisions.

Furthermore, despite widespread dissatisfaction with the socio-political situation in Croatia, a non-negligible share of Croats chooses to stay here. Despite the large number of studies on emigrants, the number of works examining the reasons for staying or returning to the Republic of Croatia is smaller. (Kavain, 2022.) lists the most attractive factors: Family, Familiar surroundings, staying for a change, climate, friends... also some foreign authors proved that family ties, nostalgia and wanting to 'give something back' to their home country. (King & Gëdeshi, 2023.)

When talking about youth migration, there are large number of scientific research data on intentions migrations (Begović, Lazović-Pita, Pijalović, & Baskot, 2020.), (Adamović & Mežnarić, 2007.), (Potočnik & Adamović, 2018.)

Research often deals with students' issues. Factors influencing the migration intention among university students have been investigated by numerous authors (Relja, Reić Ercegovac, & Čerenić, 2015.), (Hallberg Adu, 2019.), (Orosová, Benka, Hricová, & Kulanová, 2018.), (Milić, Vuksan-Ćusa, Jakab, & al., 2023.), (King & Gëdeshi, 2023.), (Ojo, Oladejo, Afolabi, & al., 2023.) In all above-mentioned research most respondents had the intention to migrate abroad after graduation.

Although most authors examine the push and pull factors of the intention to migrate, some authors investigate the connection between sociodemographic charac-

teristics and the intention to migrate. (Relja, Reić Ercegovac, & Čerenić, 2015.) examined the attitudes of 400 students from Split and Sarajevo about the intention to go abroad, and the results showed that gender, level of study and city of study, and level of education are not statistically significant in relation to the intention of young people to go abroad. Also, research of (Mrvica Mađarac, 2018.) showed that with regard to the attitudes towards migration of the surveyed village and city residents, no statistically significant differences were found. (Milić, Vuksan-Ćusa, Jakab, & al., 2023.) Observed there are no statistically significant differences in gender about intention to migrate. Foreign authors like (Kase, 2017.) found that social demographic factors - age, sex, marital status, religion, education, job, residency status, and social relation have no correlation and influence on individual decision to migration.

On the other hand, results of other authors noticed a positive correlation between migration intensions and socio-demographic characteristics. (Orosová, Benka, Hricová, & Kulanová, 2018.) explore emigration intentions among 375 Slovak university students and their findings shown that more males than females having emigration intentions. (Ferreira, Rapos, Tavares, & Correia, 2020.) equally confirmed a tendency to emigrate were mostly men. (Goštautaitė, et al., 2018.) proved that emigration intensions are linked to socio-demographic (age, gender, family situation). (Özkan, Eryılmaz, & Ergün, 2023.) results revealed that intentions to migrate were related to gender, employment status, the language spoken at home, owning a property in the host country, accommodation conditions and education level. The strongest correlates for intentions to migrate speaking level, the number of children, and family income. (Saar, 2016.) concluded that socio-demographic variables such as gender, age, ethnicity, family status and socio-economic status are still relevant for migration intentions.

METODOLOGY

Sample of respondents

The study instrument was adapted from a validated survey previously used to assess migration intentions of students in Eastern Croatia conducted between January 1th, 2023 and April 1th, 2023. Data were collected from 420 students in five counties of Slavonia & Baranja: Pozega-Slavonia County, Brod-Posavina County, Osijek-Baranja County, Vukovar- Sirmium County and Virovitica- Podravina County. This area was chosen because of the large number of people who leave every day in search of a better life, mostly young people. The survey had the following sections: sociodemographic characteristics, intention to migrate, attitudes towards Croatia and attitude of staying in Croatia. Attitude towards Croatia was assessed using 4 questions with responses on a 5-likert scale and attitude of staying in Croatia was assessed using 7 questions with responses on a 5-likert scale. Each response was scored as follows: strongly agree=5, agree=4, neutral=3, disagree=2 and strongly disagree=1.

Sample variables

Independent variables are: in this study, 7 background variables were included, namely: gender, age, household income, place of residence, average grade in the previous year of the study, student status, close friends/family members live abroad.

Dependent variables are: intention to migration

Data processing methods

Data was analyzed using SPSS and p value <0.05 was considered statistically significant. The Kolmogorov-Smirnov test was used to test the normality of the distribution. Of the non-parametric tests, the Mann Whitney test was used to examine the differences in results between two independent groups of subjects and the Kruskal Wallis test to check the differences in results between several groups of subjects.

RESULTS AND DISCUSSION

Table 1. Sociodemographic characteristics

Characteristics		Total (N)	%
Gender	Male	138	32,86
	Female	282	67,14
Age	18-30	352	83,80
	31-40	42	10
	41-50	25	6
	51-60	1	0,23
Household income	< 700 €	37	8,81
	700–1000 €	78	18,57
	1001–1500 €	116	27,62
	1500–2500 €	129	30,71
	> 2500 €	60	14,29
Place of residence	Town	243	57,86
	Village	177	42,14
Student status	Full-time	288	68,57
	Part- time	132	31,43
Close friends/family members live abroad	Yes	321	76,43
	No	99	23,57
Average grade	2	17	4,05
	3	198	47,14
	4	180	42,86
	5	25	5,95
County	Pozega-Slavonia	50	11,90
	Brod-Posavina	177	42,14
	Osijek-Baranja	82	19,52
	Vukovar- Sirmium	70	16,66
	Virovitica- Podravina	41	9,76

Source: author

Table 1 shows a higher proportion of women and a younger population. Most students have fairly good monthly household incomes, 30% have income from 1500-2500 € and 27,62 % have 1001–1500 €. Only 8,81 % have less than 700 €. Even 76,43 % of all respondents have close friends or family members live abroad. Most of the

respondents (47,14 %) have an average grade good (3) and 42,86 % have an average grade very good (4). About 57,86% of the respondents lived in town and 42,14% live in village. A large proportion of students are full-time students (68,57%). Respondents come from five counties of Slavonia and Baranja.

Table 2. Descriptive statistics for emigration intention

Variable	M	Min	Max	K-S p
Intention to stay in Croatia	3,77	1,00	5,00	p < ,01
Emigration abroad	1,60	1,00	5,00	p < ,01

Source: author

Table 2. shows the descriptive statistics for migration intention. One sample Kolmogorov-Smirnov normality test was performed. Distributions for all observed variables differ from normal ($p<0.05$) and non-parametric methods will be applied for statistical analysis.

In order to answer the problem of this survey, which is related to the examination of the sources of dissatisfaction/satisfaction with life in Croatia among students from Slavonia and Baranja, the respondents were asked four questions.

Table 3. Descriptive indicators measuring variables of satisfaction with life in Croatia

Variable	M	Median	Mode	Min	Max	SD	Skew	KURT	STD. ERR
Croatia is better than most other countries.	2,95	3,00	3,00	1,00	5,00	1,07	0,07	-0,57	0,05
I am satisfied with life in Croatia	3,33	3,00	4,00	1,00	5,00	1,05	0,46	-0,35	0,05
All people have equal chances to achieve their own goals.	2,32	2,00	2,00	1,00	5,00	1,08	0,62	-0,23	0,05
Knowledge and ability are valued in Croatia	2,34	2,00	2,00	1,00	5,00	0,98	0,39	-0,40	0,05

Source: author

Table 3. shows that the respondents mostly agree with the statement "they are satisfied with life in Croatia", which indicates a low tendency to emigrate. Respondents think that Croatia is still better than most other countries considering that the result is above the middle of the scale. However, it is believed that they are divided on the statement "all people have equal chances to achieve their own goals" and "knowledge and ability are valued in Croatia" because the results are approximately equal a little below the middle of the scale. The obtained value of the Cronbach's alpha coefficient is .799 and confirms the consistency in the answers of the respondents through different scales, which indicates that the reliability can be considered acceptable. Life satisfaction is often considered a mechanism that leads to migration decisions. The links between negative life satisfaction people and intentions to emigrate have also been examined in various foreign research (Ivlevs, 2015.), (Otrachenko & Popova, 2014.), (Karabchuk, Katsaiti, & Johnson, 2022.) These findings show the importance of life satisfaction as a strong predictor of the migration intention.

Table 4. Descriptive indicators measuring variables of attitude of staying in Croatia

Variable	M	Median	Mode	Min	Max	SD	Skew	KURT	STD. ERR
Housing issue resolved	4,35	5,00	5,00	1,00	5,00	0,87	-1,58	2,88	0,87
Safe workplace	4,49	5,00	5,00	1,00	5,00	0,75	-1,78	4,01	0,75
Family	4,48	5,00	5,00	1,00	5,00	0,83	-1,85	3,41	0,83
Friends	4,07	4,00	5,00	1,00	5,00	1,01	-0,92	0,06	1,01
Love for the homeland	3,20	3,00	2,00	1,00	5,00	1,29	-0,08	-1,16	1,29
Country security	4,08	4,00	5,00	1,00	5,00	0,99	-1,06	0,73	0,99
The beauty of the land	3,66	4,00	4,00	1,00	5,00	1,16	-0,57	-0,51	1,16

Source: author

Table 4. shows that the respondents mostly agree that safe work place is the most factor for intention to stay in Croatia than family, housing issue resolved and friends. Respondents at least agree with love for the homeland and the beauty of the land.

With regard to the research questions, it can be said that the creation of circumstances which facilitate issues such as the initial housing issue and financial situation which includes safe workplace after the completion of University will helped young and highly educated people to stay in the Republic of Croatia, which is in line with the research that conducted (Borozan & Barković Bojanić, 2015.) the economic situation. Young people in Croatia often struggle with solving their housing issue. It is difficult to secure long-term apartment rentals for young people due to the unregulated market and while buying one's own house or apartment for the current generation is increasingly becoming impossible due to the rise in real estate prices. Many researches confirm that migration intentions decrease where importance is placed on being with family. (Cairns, 2014.) According to (Eurostat, 2021.) Croatia is at the very top of Europe in terms of the percentage of young people who still live with their parents, with an average age of 33.3 years.

Mann-Whitney U tests were used to investigate the attitudes of the students going abroad with regard to gender, place of residence, student status, close family members living abroad. Mann-Whitney U tests were used since the dependent variable is ordinal with a distribution that deviates significantly from normal.

Table 5 shows that conducted tests did not reveal significant differences with regard to gender, place of residence or close family members living abroad.

Table 5. Results of Mann-Whitney U tests for testing differences in migration intention

Variable	Independent variable		U	z	p
Intention to stay in Croatia	Gender	male female	17441,500	-1800	,072
	Place of residence	town village	21119,500	-,328	,743
	Student status	full-time part- time	13203,500	-5,243	**,000**
	Close friends/family members live abroad	yes no	14090,000	-1,778	,075

Emigration abroad	Gender	male female	17872,500	-1,580	,114
	Place of residence	town village	20565,500	-,891	,373
	Student status	full-time part- time	15045,000	-3,995	**,000**
	Close friends/family members live abroad	yes no	15823,500	-,073	,942

Source: author

With regard to age, socioeconomic status, average grade in the previous part of the studies, Kruskal Wallis tests was applied.

Table 6. Results of Kruskal Wallis tests for testing differences in migration intention

Variable	Independent variable		H	df	p
Intention to stay in Croatia	Age	18-30 31- 40 41-50 51 -60	22,627	3	**,000**
	Household income	< 700 € 700–1000 € 1001–1500 € 1500–2500 € > 2500 €	9,988	4	**,041**
	Average grade	2 3 4 5 5	5,301	3	,151
Emigration abroad	Age	18-30 31- 40 41-50 51 -60	15,706	3	**,001**
	Household income	< 700 € 700–1000 € 1001–1500 € 1500–2500 € > 2500 €	10,092	4	**,039**
	Average grade	2 3 4 5	3,803	3	,284

Source: author

Table 6 shows that conducted tests did not find significant differences with regard to average grade, while there is a significant difference with regard to household income and the variable of staying in Croatia (p< ,041) and going abroad permanently (p< ,039). There is also significant difference with regard to age and the all three variables.

A summary of the results of the hypothesis verification is presented in Table 6.

Table 7. A summary of the results of the hypothesis

Hypothesis	Result
H1: Gender affects migration intention.	rejected
H2: The place of residence affects migration intention.	rejected
H3: Age affects migration intention.	accepted
H4: Socioeconomic status affects migration intention.	accepted
H5: Student status affects migration intention.	accepted
H6: The average grade in the previous part of the studies affects migration intention.	rejected
H7: Close family members/friends living abroad affects migration intention.	rejected

Source: author

Hypothesis 1 is rejected. Comparing data from the National Bureau of Statistics in 2022. and the results obtained in research, there were more men (61.9%) which is not consistent with the result that gender didn't have significant differences. Hypothesis 2 is also rejected. The place of residence does not affect migration intention which is in line with the previous research (Mrvica Mađarac, 2018.), (Chan, Cheung, Chong, & al., 2022.) However, it is not in accordance with the research which has proven that European young people living in urban areas are more likely to migrate than those living in rural areas. (Williams, Calvin, Hania, & Gang, 2017.) Hypothesis 3 is accepted. The findings are in line with another study that found age, play a significant role in shaping migration intentions. (Abdelwahed, Goujon, & Jiang, 2020) Hypothesis 4 is accepted. Precisely this variable has been investigated and proven by many authors. (Aslany, Carling, Mjelva, & Sommerfelt, 2021.), (Özkan, Eryılmaz, & Ergün, 2023.) Hypothesis 5 is accepted. Today's world demands that young people develop knowledge, skills and competences that, upon completion of their studies, to be useful in the existing labor market. Hypothesis 6 The average grade in the previous part of the studies affects migration intentions rejected which is not consistent with the research that showed that education affect migration intention. (Borgonovi & Pokropek, 2019.)

Hypothesis 7 Close family members/friends living abroad affects migration intention is rejected and this result is not in line with the research of (Gödri & Gábor, 2017.), (Aslany, Carling, Mjelva, & Sommerfelt, 2021.) or (Santric-Milicevic., et al., 2015.) which said that household members living abroad significantly increased chances for migration or close family members abroad can aspire to migrate in order to be reunited with those family members.

CONCLUSION

The reality is that everyone wants to migrate to a place with a higher standard of living and a better job opportunity.

The research obtained data indicated a weak trend of student's willingness to migrate. The majority of students nevertheless expressed their desire to stay in Cro-

atia which is in line with their vision of Croatia. Unexpectedly, most respondents are satisfied with life in Croatia and believe that Croatia is better than other countries. As expected, respondents who share an optimistic view of Croatia's future showed a lower probability of intention to migration.

As for the reasons for staying they put safe work place, family and housing issue resolved ahead of love and the beauty for the Croatia. Despite this result, it is extremely important to continuously analyze the needs of young people and develop opportunities for them through the joint action of all key stakeholders at the national and local level.

The results further show that there are no significant statistical differences between gender, place of residence, average grade in the previous year of the study and close friends/family members live abroad and intention to migration. On the other hand, there are significant statistical differences between age, household income, student's status and intention to migration.

The importance of this topic is in understanding the reasons for emigration, but also in looking at unequal spatial, economic and sociodemographic development of Croatian regions, where the unfavorable conditions of the outflow of the population were mentioned should be investigated in order to possibly try to improve these conditions in counties mentioned above.

By creating better opportunities for young people, they will be encouraged to stay in Croatia, with a competitive status in the European environment. This work contributes to provide information on the connection between sociodemographic characteristics and migration intention and information about satisfaction with life in Croatia.

The conducted research also has certain shortcomings that could be corrected removed in future research. The research was conducted on students from the counties of Eastern Croatia, so the results of the research do not necessarily apply to Croatia. Future research can extend the analysis to other counties and countries in the region. The results can then be compared between different Croatian regions as well as between Croatia and other countries.

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MEASURING TRUST IN SHARING ECONOMY AND EVALUATING THE EFFECT OF TRUST ON SHARING INTENTION ACROSS TWO CULTURES

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Abstract: *The purpose of this study was to examine the influence of the trust of product/service providers in sharing economy platforms on renting intention, the potential mediating effect of consumer trust, and the moderating role of culture on renting intention. The authors collected survey data from 823 respondents in total, including 416 Turkish and 407 Russian individuals. To test the relationships among study variables, the authors analyzed the data using structural equation modeling. The results of the analyses showed that the perceived personal safety system and perceived review system have an effect on trust in the sharing platform, but the perceived property security system has no effect on trust in the sharing platform. In addition, the trust in the sharing platform mediated the effect of perceived personal safety system and perceived online review system on trust in consumers, but it did not mediate the effect of perceived property safety system on trust in consumers. The results indicated that trust in the sharing platform affects renting intention, but trust in consumers does not affect sharing intention. Finally, the results revealed that culture does not have a moderating role in the relationship between trust in the sharing platform and trust in consumers. Platform operators should improve their trust mechanisms. Marketers should consider trust as one of the main issues when determining their strategies as it can provide competitive advantage. In addition, policymakers should also produce policies that incentivize platforms in activities that increase trust. The article provides important theoretical and practical insights into understanding and improving the trust affecting the renting intention in the context of the sharing economy.*

Keywords: *Sharing Economy, Trust, Culture, Intention, Renting*

JEL Classification: *M31.*

INTRODUCTION

While the phenomenon of sharing is so old that it dates back to the history of humanity, it can be said that the concepts of sharing economy and collaborative consumption are phenomena brought about by the digital age (Belk, 2013). The emergence of the sharing economy is associated with many factors. Developments in information technology tools and mobile technology, globalized economic activities, crises, and economic behaviors that create ecological awareness can be given as examples (Sedkaoui & Khelfaoui, 2020). Developments in the social and technological fields of mobile phones and the Internet have played a major role in the rapid popularisation of the sharing economy (Buczynski, 2013). The concept of the sharing economy can be explained as systems in which individuals share inert, commercial, and non-commercial resources and assets on online platforms through real sharing, pseudo-sharing, or collaborative consumption (Belezas & Daniel, 2023). With this economy, which is essentially based on common use, individuals experience the advantages of accessing products through bartering, renting and borrowing, while saving money, time and place. Apart from these, individuals also have environmental benefits by adopting an approach that serves environmental consciousness such as usage efficiency, waste reduction, production of better quality products, and so on (Botsman & Rogers, 2010). It is possible to observe businesses (Airbnb, Uber, etc.) that focus on consumer needs and provide services in almost every sector (Wirtz, So, Mody, Liu, & Chun, 2019) Thanks to the sharing economy, interpersonal platforms that have become widespread in a very short time have reached an economic size worth billions of dollars in global markets (Teubner & Flath, 2019). Since transactions in the context of the sharing economy are interpersonal, both mutual trust and the trust provided by the platform (guarantees such as insurance) are of great importance. For example, sharing a room, car or food involves risks in terms of both physical and economic damage in the context of trust (Schor, 2016). Business strategies developed by taking into account the trust sensitivities of individuals with such risks, physical and systemic disadvantages will facilitate individuals to trust and share (PWC, 2015). Another factor that is effective in consumer behavior is culture. Cultural knowledge offers businesses the opportunity to create and maintain healthy relationships with individuals from different cultures (Hall, Covarrubias, & Kirschbaum, 2018). Therefore, culturally aware businesses can adapt to global markets more quickly, be more productive, and generate higher profits from their activities (Moosmüller, 2017). It can be said that Hofstede's studies pioneered the theories developed to understand the concept of culture (Nazim & Wajidi, 2016). Hofstede examined culture in dimensions (Hofstede, 2011) and stated that these dimensions provide useful results such as understanding intercultural differences and individual behaviors, problem solving and cooperation with other cultures (Van Assen, Van den Berg, & Pietersma, 2009). Although the behavior of individuals differs according to culture, it should not be forgotten that other issues also have a share in this issue. To make sense of individual behaviors, Ajzen established the theory of planned behavior (TPB) (Ajzen, 1991) which is widely used (Yuriev, Dahmen, Paille, Bioral, & Guliilumie, 2020). Ajzen (1991) argued that intention is the antecedent of behavior and intention is determined by perceived behavioral control, attitude, and subjective norms.

Considering the relationship between individuals' sharing behavior and trust

and the impact of culture here, the following research questions come to the fore in this study: what is the level of trust of individuals towards digital sharing platforms and consumers in terms of renting? Do these affect the renting intention? Does culture have a moderating effect on this effect? In the research, we propose the theoretical extension of the renting intention in the context of trust and culture. In this context, this research serves the theoretical development in terms of revealing the relationship between renting intention, trust, and culture. Besides, empirical evidence reveals the relationship between trust, culture, and renting intention. In other words, the research provides theoretical and practical insights into how individuals perceive trust, its relationship with renting intention, and the moderating role of culture in this relationship.

In the following sections of the article, theoretical information on the sharing economy, trust, culture, and TPB are presented. Then, following the development of hypotheses, data analysis and presentation of findings are presented. In the last section, the findings are discussed and the theoretical and practical contributions are presented.

LITERATURE OVERVIEW

Sharing Economy and Trust

Since decades ago, it is possible to observe that social behavior has changed in terms of daily consumption. People are involved in collaborative production and consumption projects in business and social life without family members. This has led to a new approach to the economy, which includes the spirit of cooperation and solidarity and is called "the collaborative economy" or "sharing economy" (Sedkaoui & Khelfaoui, 2020). Individuals are increasingly using collaborative consumption and traditional sharing takes on a new form through bartering, lending, gifting, renting, technology and groups of friends. The collaborative consumption approach enables individuals to realize the benefits of accessing products and services instead of owning them and to save place, time and money. This approach provides significant environmental benefits, such as increasing usage efficiency, reducing waste, and preventing pollution from overproduction and overconsumption (Botsman & Rogers, 2010). While sharing is an old phenomenon dating back to the history of humanity, the concept of collaborative consumption and sharing economy are phenomena that have emerged with the digital age (Belk, 2013). With the developing technological and cultural/social networks, it has become commonplace to share in ways and scales that were not possible in previous times (Buczynski, 2013). It is predicted that the volume of transactions to be carried out within the scope of the sharing economy will reach 600 billion dollars by 2027 (Yahoo Finance, 2022). The sharing economy is also referred to as the collaborative economy, gig economy, platform economy, peer-to-peer (P2P) economy, on-demand economy, and even Uberised economy (Hatzopoulos, 2018). Schor (2016) states that it is almost impossible to provide a definition for this concept that reflects common usage due to its diversity and surprising boundaries drawn by users.

Table 1: Definitions of The Sharing Economy

References	Definitions
(Botsman & Rogers, 2010)	Traditional sharing, trade, lending, renting, gifting, bartering, technology, and peer-to-peer communities.
(Owyang, Tran, & Silva, 2013)	An economic model in which ownership and access are shared between companies, enterprises, and people.
(Stephany, 2015)	The value of making underutilized assets accessible online on behalf of the community.
(Di Amato, 2016)	An economic system in which assets or services are shared between private individuals for free/fee via the internet.
(Nguyen, Rintamäki, & Saarijärvi, 2018)	A platform-based business model where consumers are directly engaged in creating/exchanging/sharing products or services that utilize underutilized resources.
(Çaprak & Ayazlar G., 2021)	Exchanging of elements that have socio-economic and environmental value but are idle through digital platforms and their utilization where they are needed.

Source: Prepared by authors

Based on the definitions in Table I, the sharing economy can be defined as "A system in which products/services with social, environmental, cultural and economic value are exchanged and consumed collaborative among individuals through digital sharing platforms and product/service efficiency is increased in social, environmental, cultural and economic terms" (Akdemir & Fırat, 2022).

Individuals have difficulty trusting different individuals due to some obstacles arising from differences in language, culture, etc. (Riles, 2020) but sharing platforms can facilitate sharing by providing information about users through processes such as ratings and comments (Frenken & Schor, 2019). Sharing platforms can monitor users' behavior and punish users who pose a threat to consumer welfare and satisfaction (Stemler, 2016). (Wang, Asaad, & Filieri, 2020) stated that technical antecedents such as system, service and information quality provided by the platform; economic antecedents such as monetary rewards and privacy assurance antecedents such as privacy policy are effective on trust in the sharing platform. Since transactions on platforms take place among individuals, the main focus of platforms should be on maintaining trust (Teubner & Dan , 2018).

Three types of measures are observed in the mechanisms developed to ensure trust on digital sharing platforms. These are; measures for users' personal life security, measures for how users perceive each other, and measures for the security of users' property and funds (Li & Wang, 2020). Through sharing platforms, individuals interact face-to-face (e.g. when handing over the key to car/room renting). This points to the trust needed during sharing, namely the importance of a personal security system (Möhlmann, 2016). Another trust-building mechanism is secure payment and property insurance measures to provide products and funds to providers. To reduce risk and uncertainty and ensure security, platforms have developed many mechanisms to ensure trust, such as product/service insurance and bilateral evaluation/rating mechanisms among individuals (Pavlou & Gefen, 2004). In addition to these, Airbnb, for example, covers medical expenses in case of injuries, damage to valuables, refunds in cases of

booking cancellation, etc. (Reinhold & Dolnicar, 2018). It is not possible to observe the attitudes and behaviors of individuals before sharing. For example, in Airbnb, if you want to get information about the provider, you look at the provider's online review scores/visuals about the house. This shows the importance of the online review system (Ert, Fleischer, & Magen, 2016). The user review service of the platforms facilitates a positive attitude of individuals in terms of trust (Meyer, 2016). (Fang, et al., 2014) stated that the service of evaluating inter-user transactions offered by platforms increases inter-user trust. To summarise; considering the intensive interaction among many stakeholders in the context of the sharing economy, it can be said that users' trust and risk perceptions can play a key role in the success and sustainable development of collaborative consumption (Gu, Zhang, Lu, & Song, 2021).

Culture and Sharing Intention

Culture can provide theoretical and practical insights into understanding the differences in norms and values that exist among societies (Briley, 2009). In addition, culture determines behaviors that establish bonds, motivate and lay the groundwork for trust to develop (Alston, 2014). Culture is a phenomenon that manifests itself in the perceptions, beliefs, values, traditions and behaviors of individuals as well as in objects and the physical environment (Pandey, 1990). (Kluckhohn, 1951) defined culture as a system of historically derived, explicit and implicit designs of life that tend to be shared by all or specially designated members of a group. Culture affects perception, communication and identity. For this reason, two individuals exposed to the same sensory stimuli may perceive these stimuli differently. This situation may lead to misunderstandings and conflicts. Establishing trust-based relationships and increasing the level of intercultural communication can reduce the possibility of misunderstanding and help alleviate conflicts (Hinner, 2019). From an economic point of view, cultural knowledge can provide some potential benefits for businesses, such as easy adaptation to global/local markets, high productivity and profit, and high talent acquisition (Moosmüller, 2017).

When the literature is reviewed, it is observed that culture is examined in many fields, but Hofstede's theory of cultural dimensions is widely used in terms of providing great convenience for researchers to know cultural differences by evaluating them in the national context. Nazim and Wajidi (2016) stated that Hofstede was a pioneer in formally linking work values and social values. Hofstede et al. (2011) defined national culture as the characteristics that distinguish the people of a country from other countries and explained culture in dimensions such as power distance, uncertainty avoidance, individualism, masculinity-femininity, and long-term orientation. With Michael Minkov's "World Values Study", the dimension of indulgence was added to the cultural dimensions. Power distance is the level at which less powerful members of businesses and organizations accept and expect an unequal distribution of power among individuals (Hofstede, Hofstede, & Minkov, 2010). Individualism refers to the extent to which the identity of individuals belonging to a particular culture is shaped essentially by individual choices and achievements or by the groups to which they belong (Smith, Dugan, & Trompenaars, 1996). Masculinity-femininity is a society's social attribution of roles to the genders (Hofstede, 1984). Uncertainty avoidance is the tolerance of members of a culture to feel comfortable/uncomfortable in unstructured

situations (Hofstede & Usunier, 2003). While long-term orientation refers to the choices people make about their efforts, focusing on the past, present or future, indulgence encompasses the satisfaction of the control of human desires related to the enjoyment of life (Hofstede, Dimensionalizing Cultures: The Hofstede Model in Context, 2011). Many studies showing that individual behaviors differ from culture to culture are available in the marketing literature. (Djekic, et al., 2021; Samaha, Beck, & Palmatier, 2014; Han & Kim, 2019)

(Fishbein & Ajzen, 2011) stated that effective results cannot be obtained in solving social problems without understanding the factors that determine individual behaviors. The Theory of Planned Behaviour (TPB) proposed by Ajzen is one of the most common frameworks used to examine the behavior of individuals (Yuriev, Dahmen, Paille, Bioral, & Guliilumie, 2020). This theory is a continuation of the Theory of Reasoned Action (TRA), but the TPB differs from TRA in the sense that perceived and actual control over the performance of a behavior is also taken into consideration (Ajzen, 1985). According to both TPB and TRA, it is assumed that individuals generally exhibit rational behaviors and that intention is the most important determinant in performing a behavior (Ajzen, 2005). TPB assumes that intention has three independent determinants: attitude (level of positive/negative evaluation of the behavior), subjective norm (perceived social pressure regarding the behavior), and perceived behavioral control (perceived ease/difficulty in performing the behavior). The high level of these three determinants affects the intention to perform the relevant behavior at a high level (Ajzen, 1991).

TPB focuses directly on whatever the determinant of behavior is and can be applied to any behavior of interest to the researcher. TPB is also accompanied by some established methodological tools. They are used to obtain validity and reliability measures of these theoretical constructs. In addition, TPB provides a conceptual framework for thinking about the determinants of the behavior under investigation and provides a clearly stated structural model (Ajzen, 2020). In the literature, it is possible to come across many studies showing the trust-intention relationship (Permatasari & Mardhiyah, 2020; Wang, Ngamsiriudom, & Hsieh, 2015; Asti, Handayani, & Azzahro, 2021).

METHODOLOGY

Hypothesis Development

It has been argued that the main determinant of consumer willingness to buy in online purchasing transactions is trust (Ogbanufe & Kim, 2020). The study examining consumer trust concluded that factors such as brand awareness, service quality, safety, and word-of-mouth communication affect trust (Falahat, Lee, Foo, & Chia, 2019). (Fernández-Bonilla, Gijón, & De la Vega , 2022) stated that e-trust is a determining factor in online purchasing and encourages the use of all digital resources. In another study, it was concluded that laws regulating security, warranty, privacy, website information, customer service, and protection of consumer rights in online transactions affect trust (Chawla & Kumar, 2022). (Bylok, 2022) stated that trust in websites positively affects young consumers' intention to make online transactions. (Zahara, Rini, & Sembiring, 2021) stated that the effect of seller reputation on trust is positive, and online customer reviews also have a positive effect on trust. In another study, it was concluded that user ratings and online reviews affect trust (Cheng, Su, & Yang, 2020).

Various online mechanisms have been developed for those who rent their products and services on sharing economy platforms. These can be categorized into three types in terms of their role in trust-building measures: trust-building measures to address personal life safety risks, measures to protect property/fund security, and measures to address users' views of potential consumers. Perceived personal safety system (PERS), perceived property safety system (PROS), and perceived online review system (POR) each affect trust in sharing platform (TSP) (Li & Wang, 2020). In this regard, the following hypotheses were proposed:

H_1: The PERS has a significant effect on TSP.

H_2: The PROS has a significant effect on the TSP.

H_3: The POR has a significant effect on TSP.

In recent years, interest in the role of trust in business behavior has increased due to its potential impact on reducing transaction costs (Lyon, Mšllering, & Saunders, 2012). In the literature, studies show that trust in platforms has an impact on consumers' decision-making processes. Before exemplifying these studies, it is worth noting that some studies examining trust in providers are also available in the literatüre (Cheng, Fu, Sun, Bilgihan, & Okumus, 2019; Yu, Zang, & Yang, 2019). (Zhu, Mou, & Benyoucef, 2019) concluded that individuals' trust levels affect their purchase intentions on online platforms. (Kong, Wang, Hajli, & Featherman, 2020) stated that information quality and transaction security provided by platforms positively affect user trust. (Lukito & Ikhsan, 2020) concluded that perceived risk has a negative effect on online trust and repurchase intention and online trust affects repurchase intention. It has also been found that the information provided to users by sharing platforms for recommendation purposes and verification information for providers has a positive impact on consumers' purchasing decisions (Xu, Zeng, & He, 2021). In this regard, the following hypotheses were proposed:

H_4: TSP has a significant effect on TC.

H_{5a}: TSP has a mediating effect on the relationship between PERS and TC.

H_{5b}: TSP has a mediating effect on the relationship between PROS and TC.

H_{5c}: TSP has a mediating effect on the relationship between POR and TC.

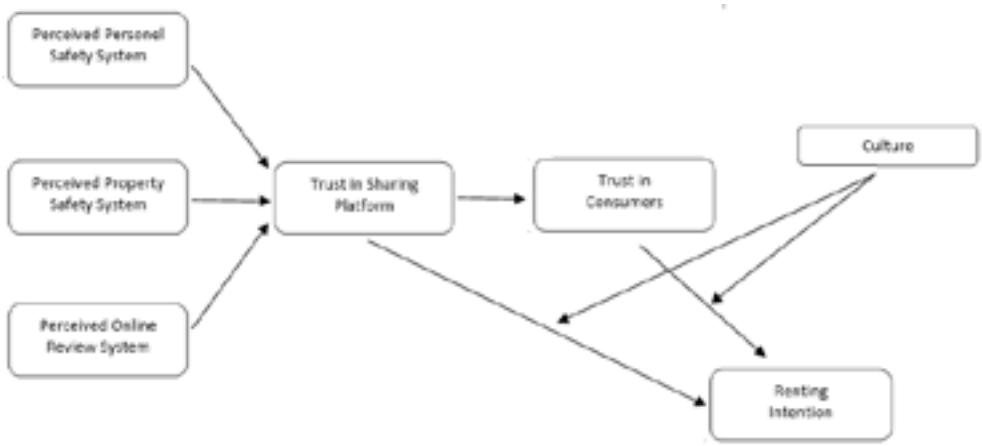
It is possible to say that intention can be affected by many different antecedents (Chopdar, Lytras, & Visvizi, 2023), but in our study, there is an approach based on trust and culture. Many researchers, academics and theorists have highlighted the important role that culture can play in the trust-building process. Many studies demonstrating the relationship between culture and trust can be observed in the literatüre (Liobikienė, Mandravickaitė, & Bernatonienė, 2016; Hallikainen & Laukkanen, 2018). A study conducted with participants from the United States of America (US) and China concluded that interpersonal trust influences intention (Qin, 2020). In a study using data from American and Indian participants, it was observed that trust differed according to culture (Chathoth, Mak, Sim, Jauhari, & Manaktola, 2011). In another study conducted in South Korea with participants from the US, it was also observed that trust perceptions differed according to culture (Jin, Park, & Kim, 2007). The study, which involved participants from Germany, England and Wales, found that participants' perceptions of trust differed (Van Der Schee, Braun, Calnan, Schnee, & Groenewegen, 2007).

In the literature, it is possible to find many studies showing that trust relates to intention to use. (Heggde & Shainesh, 2018) concluded in their study that trust

in the platform is related to the intention to use. (Chen, Lai, & Lin, 2014) concluded that trust in consumers and trust in the sharing platform affect sharing intention. (Li & Tsai, 2022) found that trust in the sharing platform influenced the intention to continue using the sharing platform. In a study investigating the intention of Italian and Spanish individuals to participate in the sharing economy system, it was observed that it differs according to culture (Perfili, Parente, Grimaldi, & Morales-Alonso, 2019) (Perfili et al., 2019). Another study also observed the influence of culture on German and Polish individuals' perceptions of trust, convenience and risk and their adoption of e-shopping intentions (Kowalczuk, 2016). (Urbonavicius & Sezer, 2019) found that culture influences the sharing intentions of Turkish and Lithuanian individuals. The moderating effect of culture and the mediating role of trust were observed in a study examining consumers' intention to buy (Ng, 2013). The moderating role of culture has been observed in other studies on trust (Hur, Kang, & Kim, 2015). Although the relationship between trust and purchase intention in e-commerce has been examined in many studies, the emergence and rapid development of the sharing economy has renewed the level of interest in this relationship (Furner, Drake, Zinko , & Kisling, 2022). In this regard, the following hypotheses were proposed:

H_{6a}: TSP has a significant effect on Renting intention (IR).
H_{6b}: The effect of TSP on IR differs according to culture.
H_{7a}: TC has a significant effect on IR.
H_{7b}: The effect of TC on IR differs according to culture.

Figure 1: Research Model



Source: Figure by authors

RESEARCH METHOD

Research Sample

The research population consists of participants of Turkish and Russian nationality (living in Turkiye or visiting Turkiye for tourism purposes). The reason for including Russian participants in the research is that they are the nation that visits Turkiye the most (Tursab.org, 2023) (TURSAB, 2023). The research used a purposive sampling method. The purposive sampling technique is one of the non-probability

sampling techniques. It is mainly used when the population is very large and random selection is impossible. It can provide convenience to the researcher when resources, time, and labor are limited (Etikan, Musa, & Alkassim , 2016). Data were collected online for Turkish participants and both online and physical surveys for Russian participants. To collect online data from participants, we accessed their accounts on sharing economy communities such as Uber and Airbnb on social media platforms such as Facebook and Instagram. To collect data from Russian participants, we contacted Russian associations and language schools in Turkiye and tried to reach their members and students through an online survey. In addition, physical surveys were used to reach Russian participants who were visiting Turkiye for tourism purposes. Users of sharing economy platforms such as Uber and Airbnb, or individuals who are not users of such platforms but have information about them, were included in the study. The research data were collected online (using Google Forms) and physically between March 2021 and November 2022 using the survey technique. The research reached a total of 912 participants (447 Turkish, and 465 Russian). Incorrect or randomly marked surveys were removed from the collected surveys and 823 total surveys (416 Turkish, 407 Russian) were found suitable for use in the analyses. Exploratory factor analysis (EFA) and reliability analysis were used to determine the validity of the measures based on the data obtained from the participants. The results of the pilot test were evaluated and no problems with the measures were found. Table II shows the descriptive statistics of the participants.

Table 2: Descriptive Statistics of Participants

		Turkish		Russian	
		Percentage	**Number**	**Percentage**	**Number**
Gender	**Female**	%38,9	162	%60,7	247
	Male	%61,1	254	%39,3	160
Age groups	**18-25**	%16,8	70	%10,8	44
	26-35	%52,2	217	%35,9	146
	36-45	%24,5	102	%35,1	143
	46-55	%4,6	19	%13,3	54
	56-65	%1,9	8	%4,9	20
Education Level	**Primary School**	%2,4	10	%0	0
	High School	%16,8	70	%7,4	30
	Collage	%4,1	17	%45,5	185
	Undergraduate degree	%49,3	205	%22,9	93
	Master's degree	%20,4	85	%22,1	90
	PhD	%7	29	%2,2	9

Source: Prepared by authors

Measures

The survey used a 7-point Likert scale and asked participants to indicate their level of agreement with the statements. The survey includes a total of 19 items. The measurement tool in (Li & Wang, 2020) and (Hawlitschek, Teubner, & Weinhardt,

2016) studies were used to measure the variables of this study, namely perceived personal safety system (PERS), perceived property safety system (PROS), perceived online review system (POR), trust in sharing platform (TSP), trust in consumers (TC), and Renting intention (RI). Table III shows the number of items and the reliability coefficient of each variable in both Turkish and Russian samples.

Table 3: Reliability Coefficients

Variables	Cronbach's Alpha value		Number of items	References
	Nation (Turkish)	Nation (Russian)		
PERS	0,769	,845	3	Li and Wang, 2020
PROS	0,813	,894	3	
POR	0,914	0,843	3	
TSP	0,825	0,830	4	
TC	0,858	0,862	3	
RI	0,916	0,903	3	Hawlitschek et al., 2016

Source: Prepared by authors

All items in the measures were originally developed in English. They were therefore translated into Turkish and Russian using standard translation-back-translation procedures (Brislin, 1970). For each country, we used two translators who were familiar with the English-speaking culture and with the language of the target culture. One of the translators did the translation of the items from English into the language of the target country. These items were then interpreted by a second translator, who then retranslated the items back into the target language. Any discrepancies were discussed with the researchers and the translators, and this provided a greater opportunity for a final agreement to be reached on the translation.

Data Analysis

The study used structural equation modeling (SEM) and analyses were performed using SmartPLS 4. There are several considerations when using SmartPLS. Partial Least Square (PLS)-SEM is a promising method with great potential, especially for researchers working in marketing and management information systems disciplines (Hair, Ringle, & Sarstedt, 2011). SEM facilitates the examination of phenomena that are difficult to observe, such as consumer attitudes, perceptions, and intentions (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). It is more suitable for models with fewer samples and more complex structures (Hair, Sarstedt, Ringle, & Mena, 2012). In addition to working with very small and very large samples, it easily combines formative and reflective constructs. It is also recommended for the measurement of complex models that are exploratory and include many constructs and indicators (De Souzabido & Da Silva, 2019).

Research Findings

The descriptive statistics and the relationships between variables for the whole sample are shown in Table IV. According to the values in the table, the relationships between the variables are positive and significant.

Table 4: Correlation Analysis Results

Variables	$\bar{x}$	σ		TSP	TC	PERS	PROS	POR	RI
TSP	5,3086	1,15581	R	1					
TC	4,9218	1,26720	R	,571**	1				
PERS	5,3050	1,23382	R	,581**	,528**	1			
PROS	5,0919	1,30807	R	,516**	,498**	,669**	1		
POR	5,3090	1,21547	R	,528**	,469**	,580**	,587**	1	
RI	4,7740	1,77360	R	,373**	,245**	,322**	,331**	,403**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
N (person)= 823
Source: Prepared by authors

To analyze the research model, validity and reliability analyses were first performed. In this context, internal consistency reliability and convergent validity were evaluated (Hair, Ringle, & Sarstedt, 2011).

Table 5: Validity and Reliability Values

Variables	Items	Factor Loadings	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Explained (AVE)
PERS	PERS 1	0.787	0.816	0.814	0.594
	PERS 2	0.720			
	PERS 3	0.802			
PROS	PROS 1	0.925	0.865	0.867	0.686
	PROS 2	0.766			
	PROS 3	0.784			
POR	POR 1	0.853	0.881	0.881	0.712
	POR 2	0.843			
	POR 3	0.835			
RI	RI 1	0.945	0.911	0.914	0.781
	RI 2	0.943			
	RI 3	0.749			
	RI 4	0.753			
TSP	TSP 1	0.808	0.837	0.837	0.563
	TSP 2	0.730			
	TSP 3	0.708			
TC	TC1	0.854	0.865	0.865	0.682
	TC 2	0.780			
	TC 3	0.841			

Source: Prepared by authors

It was found that the factor loadings related to validity and reliability in Table V were greater than 0.70 for each item and therefore no item was removed from the scales. In addition, the AVE, CR, and Cronbach's alpha values are greater than the threshold values (CR ≥ 0.70, AVE ≥ 0.50 and Cronbach's alpha ≥ 0.70). As Cronbach's alpha and CR values are greater than the threshold values, it can be said that the internal consistency reliabilities of the measures were good. In addition, as the factor loadings and AVE values are greater than the threshold values, it can also be said that convergent validity was established.

Discriminant validity was also checked. Accordingly, the Heterotrait-Monotrait Correlation Ratio (HTMT coefficient) of the statements was analyzed.

Table 6: HTMT Coefficients

Variables	PERS	PROS	POR	RI	TSP	TC
PERS						
PROS	0.793					
POR	0.681	0.672				
RI	0.371	0.374	0.450			
TSP	0.704	0.609	0.617	0.431		
TC	0.625	0.575	0.537	0.277	0.668	

Source: Prepared by authors

(Henseler, Ringle, & Sarstedt, 2015) state that HTMT coefficients should theoretically be less than 0.90 for distant structures and less than 0.85 for close structures. As seen in Table VI, all of HTMT coefficients were lower than this specified value and therefore the measures were found to have discriminant validity.

Structural Equation Modelling Analysis

The linearity of the structural model was tested by examining the Variance Inflation Factor (VIF) values. (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017) state that if these values are less than 5, there is no problem with linearity among variables.

Table 7: Structural Model VIF Values

Variables	PERS	PROS	POR	RI	TSP	TC
PERS					3.026	
PROS					2.921	
POR					2.034	
RI						
TSP				1.805		1.000
TC				1.805		

Source: Prepared by authors

As can be seen in Table VII, the VIF values were less than 5, indicating that there was no collinearity problem among the variables.

Q^2 value for the prediction power of the model, R^2 value to determine the level of explanation of the model, and f^2 value for the effect size were analyzed. (Hair Jr, et al., 2021) stated that the R^2 value; between 0.0-0.13 is weak, between 0.13-0.26 is average, and greater than 0.26 is a high level of explanation. It is stated that f^2 value ≥ 0.02 indicates low level, ≥ 0.15 indicates average level, and ≥ 0.35 indicates high level. If the Q^2 value is >0 in an endogenous structure, the predictive accuracy of the path model is acceptable (Hair Jr, Black, Babin, & Anderson, 2019).

Table 8: Q^2, f^2 and R^2 Values

Variables	SSO	SSE	Q^2 (=1-SSE/SSO)	Variables	f^2	Variables	R^2	Adjusted R^2
PERS	2469.000	2469.000	0.000	**PERS → TSP**	0.181	**RI**	0.187	0.185
PROS	2469.000	2469.000	0.000	**PROS → TSP**	**0.002**	**TSP**	0.535	0.533
POR	2469.000	2469.000	0.000	**POR → TSP**	0.062	**TC**	0.446	0.445
RI	2469.000	2171.396	**0.121**	**TSP → RI**	0.138			
TSP	3292.000	2400.574	**0.271**	**TSP → TC**	0.805			
TC	2469.000	1846.475	**0.252**	**TC → RI**	**0.001**			

Source: Prepared by authors

The Q^2 values were analyzed and the findings in the Table VIII indicated that the research model has the power to predict RI, TSP, and TC variables. According to R^2 values; RI was explained by 19%, TSP by 54% and TC by 45%. When the f^2 values are reviewed, it is observed that the variables had different levels of effect size on each other, but PROS had no effect on TSP and TC had no effect on RI.

Table 9: Research Model Effect Coefficients

Variables	β	Standard deviation	T value	P value
PERS → TSP	0.505	0.083	6.109	**0.000**
PROS → TSP	0.048	0.074	0.641	0.522
POR → TSP	0.242	0.061	3.991	**0.000**
TSP → RI	0.450	0.057	7.850	**0.000**
TSP → TC	0.668	0.033	20.188	**0.000**
TC → RI	-0.028	0.057	0.483	0.629

Source: Prepared by authors

Table IX shows the effect coefficients of the research model. The findings indicate that the effect of PERS on TSP (β=0.505 and p<0.05), the effect of POR on TSP (β=0.242 and p<0.05), the effect of TSP on RI (β=0.450 and p<0.05) and the effect of TSP on TC (β=0.668 and p<0.05) were positive and significant. Accordingly, hypotheses H_1, H_3, H_4 and H6a are supported. PROS had no significant effect on TSP (β=0.048 and p >0.05) and TC had no significant effect on RI (β=-0.028 and p >0.05), therefore hypotheses H_2 and H_{7a} are rejected.

According to (Zhao, Lynch Jr, & Chen, 2010), indirect effects should be significant to show the mediating effect. In other words, the relationship between the exogenous variable and the mediating variable should be significant and, at the same time, the relationship between the mediating variable and the endogenous variable should be significant.

Table 10: Research Model-Specific Indirect Effect Coefficients

Variables	β	Standard deviation	T value	P value
PERS → TSP → TC	0.337	0.059	5.752	0.000
PROS → TSP → TC	0.032	0.050	0.639	0.523
POR → TSP → TC	0.161	0.041	3.933	0.000

Source: Prepared by authors

According to the findings in Table X, the mediation effect of TSP was positive in the relationship between PERS and TC (β=0.337 and p<0.05) and the relationship between POR and TC (β=0.161 and p<0.05), while there was no mediation effect of TSP in the relationship between PROS and TC (β=0.032 and p >0.05). Thus, hypotheses H_{5a} and H_{5c} are supported, and hypothesis H_{5b} is rejected.

Table 11: Multiple Group Analysis Values

Variables	β Coefficients Difference (Russian-Turkish)	P value
TSP → RI	-0.069	0.565
TC → RI	0.104	0.395

Source: Prepared by authors

As seen in Table XI, there was no moderating effect of culture on the effect of TSP on RI ($\beta_{Rs\text{-}Tr}$= -0.069 and p > 0.05) and the effect of TC on RI ($\beta_{Rs\text{-}Tr}$= 0.104 and p > 0.05). Accordingly, hypotheses H_{6b} and H_{7b} are rejected.

DISCUSSION OF RESEARCH FINDINGS

This paper aims to examine the transactions carried out through digital sharing platforms based on trust, to determine the effect of individuals' perceptions of trust on their intention to share, and the regulatory role of culture in this effect. According to the results; PERS and POR affect TSP; PROS does not affect TSP. It was observed that TSP affects TC. In addition, there is a mediating effect of TSP in the relationship between PERS and TC, and there is a mediating effect of TSP in the relationship between POR and TC, but there is no mediating effect of TSP in the relationship between PROS and TC. In addition, it was observed that TSP has an effect on RI, but TC has no effect on RI. Furthermore, no moderating effect of culture was observed in the effect of TSP on RI or in the effect of TC on RI.

More precisely, individuals' positive perceptions of the authentication system, questioning users' past behaviors, positively affect their renting intentions. The fact

that platforms offer personal safety insurance to their users for risky situations such as accidents etc. also positively affects renting opinions. In other words, individuals have positive thoughts that these platforms are reliable, fulfill their commitments to users, look after their interests, and do not harm them. Apart from these, individuals' opinions about the property safety system are not related to their trust in the platforms. In other words, their perception of the property insurance and escrow services (the service of entrusting the rights of the products/services/funds to a neutral person until certain obligations are fulfilled in the process of reaching the parties) offered by the platforms does not differentiate their trust in the platform. Individuals who think that the online review system provides users with useful, accurate, and reliable information think that the platforms are reliable. While some studies in the literature on these issues support H1 and H3, they differ from H2 (Fernández-Bonilla, Gijón, & De la Vega , 2022; Bylok, 2022; Cheng, Su, & Yang, 2020).

Individuals who are positive about their platforms being reliable, fulfilling their promises and commitments to users, looking after their interests, and not harming providers also have positive opinions about consumers. This finding is consistent with some studies in the literatüre (Zhang & Wang, 2021; Li & Wang, 2020; Tussyadiah & Park, 2018). Individuals' views on users' background checks, user identity verification, and having personal safety insurance have a significant effect on the opinion that consumers are harmless, honest, and trustworthy, and this is mediated by their trust in the platform. This finding is consistent with some studies in the literatüre (Mittendorf, 2016; Teubner & Dan , 2018; Möhlmann, 2016; Wu & Shen, 2018). On the contrary, the property insurance and escrow services offered by the platforms do not affect consumers' perceptions and the platforms do not play a mediating role in this relationship. Individuals' opinions that the online review system provides useful, accurate, and reliable information to providers affect consumers' opinions that it is honest, reliable, and harmless, and trust in the platform has a supporting effect on this relationship. Individuals' positive opinions about the platform in terms of being reliable, looking after the interests of providers, and fulfilling commitments affect consumer trust (Mittendorf, 2016; Teubner & Dan , 2018; Möhlmann, 2016; Wu & Shen, 2018; Zhang & Wang, 2021).

As mentioned above, whether the trust factor affects the renting intention of the providers is analyzed within the scope of the research. Individuals' positive opinions about platforms positively affect their renting intention for their products/services through sharing platforms. In other words, it supports individuals' renting intention for their products/services through sharing platforms and may increase the renting possibility. This finding is consistent with some studies in the literatüre (Xu, Zeng, & He, 2021; Lu & Yi, 2023; Chen, Lai, & Lin, 2014). No relationship was found between the perception of consumers as honest and reliable and the renting intention. Some studies in the literature differ from this result (Bylok, 2022; Chen, Lai, & Lin, 2014; Park & Tussyadiah, 2020). Turkish and Russian cultures do not have a differentiating role in the effect of trust in the platform or consumers on renting intention. Some studies in the literature differ from this result (Kowalczuk, 2016; Qin, 2020; Xu, Zeng, & He, 2021).

CONCLUSIONS AND LIMITATIONS

First of all, the results of this research have once again revealed that the issue of trust is of great importance in the context of the sharing economy. Because the results

obtained within the scope of the research show that the renting thoughts of individuals are affected by the trust mechanism provided by the sharing platforms. Individuals' perceptions of the online review system and personal security system, which are the antecedents of the trust mechanism, affect their thoughts towards the platform. It was observed that only the perceptions of the property safety system had no effect on the trust in the platform. The new guarantees that platforms will offer regarding property safety may also convince potential participants to trust the sharing platform and share.

Improvements in property safety will support the confidence level of the online review system and personal safety system and will guide individuals to rent through platforms. In this direction, platform operators should make the necessary improvements in terms of safety by taking into account this approach of individuals. In addition to the trust they feel only by accessing users' information and ratings, they should also feel a high level of trust during the delivery/presentation of the product or service they rent. Because individuals who can feel a sense of trust towards the platform can feel trust in the individuals they will rent to offer their own product or service. Considering that individuals anywhere in the world can transact with each other through these platforms, it can be stated that the issue of trust is important and platform operators should act with the knowledge that trust is one of the main issues of their activities. Platforms can succeed in increasing the level of trust through new applications together with the participants. For example, the issue of trust can be taken into consideration more among users with applications such as rewarding users with high trust levels, choosing the most trusted user of the month or year. Again, our research has shown that if individuals feel trust towards the sharing platform, this trust positively affects their rental intentions. In other words, the individual who feels trust will share. In this direction, not only platform operators should pay attention to this issue, but also marketers should develop strategies based on this issue. Emphasizing the element of trust in marketing activities may increase the interest in platforms. In addition, policymakers should also produce policies that support platforms on this issue. Policies that encourage activities that increase trust will increase the level of trust of both platforms and individuals who share through these platforms. It is also predicted that platforms that improve the level of trust can provide competitive advantage.

In summary, it is possible to observe that the sharing process creates different values for all stakeholders (platforms, providers and beneficiaries). In this respect, the improvement of trust by platform operators, marketers and policymakers is of great importance for all stakeholders.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

OPTIMISING EMPLOYEE DEVELOPMENT PROCESSES: PERCEPTIONS OF MICROLEARNING AS AN INNOVATIVE SOLUTION

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Abstract: *The author conducted a systematic literature review to emphasize the researched topic's current trends and related historical development of the key terms. To address the determined research gap, a quantitative approach was employed. The author primarily used a questionnaire survey to gather viewpoints from training participants. This study explores the integration of the microlearning trend into employee learning and development processes. It aims to better understand the attitudes towards microlearning utilization of the current training participants. Furthermore, it seeks to determine the practical pillars associated with microlearning adoption within organizations. The research confirmed that training participants have diverse associations with microlearning, which current businesses can leverage to structure succeeding learning content. These associational benefits can support current businesses with a microlearning formation and a better understanding of relevant implementation prerequisites. This study explores a rarely covered topic, that is addressing a research gap within the European context. The exploration of microlearning significance, its related aspects, and learners' feedback offer valuable understandings, that provides a number of outcomes to contribute to theoretical and empirical wisdom of this research.*

Keywords: *microlearning, development, learning, training, employee*

JEL Classification: *M53, M15, O33*

INTRODUCTION

In nowadays rapidly changing competitive area, it is essential to have up-to-date employee knowledge. Hence, learning and development enable employees to adapt to industry changes and provide them with the skills to understand new technologies, regulations, and market trends (Canonico et al., 2018). Varma et al., 2022 notes that training activities can assist employees in maintaining employability by developing relevant skills. Employee development can support a staff with advancing their career

opportunities by offering professional prospects in the job market (Varma et al., 2022). Furthermore, employees can become more competitive by cultivating new skills and knowledge (Ostin, 2023). Employee learning and development is a long-term process, that usually delivered through various training programs (Trávníčková et al., 2023). The standard form of corporate development is on-the-job training (Ahadi & Jacobs, 2017). This form of the training is provided by mentors and is mainly tailored to the employee's specific requirements concerning their job activities (Alipour & Ghsemi, 2023).

A key term "training" is possible to characterize as a short-term activity, that contributes to the long-term development goals of the company (Maršíková & Šírová, 2015). Formal learning is an essential component to provide employees with the knowledge and skills needed to succeed in their occupations (Deutscher & Braunstein, 2023). Nevertheless, diverse global circumstances and current trends significantly affect definitive forms of on-the-job formal employee learning (Mazurchenko & Zelenka, 2022). As a result, employee learning and development forms, including the methods used, are becoming more technology-oriented and flexible (Razbornik & Todosijevic, 2024). Hence, different authors are identifying new technology-oriented training methods to enhance employee learning processes (Chung & Huang, 2022). One currently investigated trend is microlearning, which offers several benefits for employee development.

This research aims to explore the integration of microlearning. The study is remarking on its lack of systematic implementation and examination within existing literature and practical applications as well. While there is a general outlook that microlearning delivers more advantages than traditional learning methods, a significant gap exists in understanding how this trend can be systematically utilized to maximize learning potential within current businesses. The primary goal of this research is to systematically examine the aspects of microlearning. Furthermore, this research aims to theoretically address the current research gap and practically understand training participants' viewpoints on this learning format. This research is investigating how this learning method can be effectively combined to improve learning results for employees and enterprises simultaneously.

SYSTEMATIC LITERATURE APPROACH

In nowadays rapidly changing competitive area, it is essential to have up-to-date employee knowledge. Due to the reasons noted above, it is possible to identify specific trends within the employee development and work-based learning (Cai & Moallem, 2021). These trends are appearing in the middle of the rapidly changing business landscape and the increasing digitalization in different industries (Labus & Lukić, 2024). Thus, at this stage, is possible to identify new conceptions and approaches known as microlearning (Sung et al., 2023). This new form of learning emerged as a concept primarily focused on individual learning needs and company straightforward short-term goals (Buchem & Hamelmann, 2010). Nevertheless, various authors define the term "microlearning" in different ways. Therefore, it is necessary to focus on details and explore the current reviews of this key term to gain a complete understanding of its substance and related aspects as well. The Table I, presents the historical development of the term "microlearning". This table aids in enhancing understanding of

the implications of previously formulated microlearning concepts and the influence of contemporary trends over decades, which have shaped the development of microlearning perceptions.

Table 1. Comparison of Microlearning and Macrolearning

Period	Author	Key Findings and Description
1963	Correa	The author established several correlations between economic principles and development programs. Correa (1963) defined "microlearning" as the acquisition of simple skills and competencies by individuals following specific instructions.
2010	Buchem and Hamelmann	The authors defined a company orientation on the minimalization of learning content, utilized during the employee learning and development process. This approach characterizes the development of microlearning approach.
2021	Minichiello et al.	The authors characterized microlearning as a combination of various content types, including text snippets, video segments, flashcards, and short tutorials, enabling the utilization of microcontent for effective training purposes.
2023	Sankaranarayanan et al.	The authors highlighted the main characteristics and features of microlearning, such as immediate feedback and high-level interactions, aimed at enhancing learning efficiency.

Source: Author own elaboration

The table presented above illustrates the historical development of the microlearning term. It is evident from this table that microlearning is not a relatively new trend, as authors in the 20th century already explored (Correa, 1963). However, despite its presence several decades ago, the main development of this principle has occurred in the current century, with a focus on various features and characteristics of microlearning. Moreover, with the development of high digitalization, the directions of this form has undergone a more rapid evolution (Melnychenko et al., 2021). Most current authors are interconnecting microlearning with technology development and the importance of those new tools for effective training execution (Minichiello et al., 2021). Based on the above-stated microlearning definition, it is possible to compare it with the term macrolearning. Macrolearning activities encompass probabilistic aspects and their associated consequences on a larger scale. In terms to better understand the main difference, the author decided to create a comparison Table 2. It is possible to explain the differences between microlearning and macrolearning quite easier by contrasting similar features of both in the matrix. The descriptions and definitions of these characteristics is based on the literature review and research conducted by various authors in the past to ensure accuracy and comprehensiveness.

Table 2. Comparison of Microlearning and Macrolearning

Characteristic	Microlearning	Macrolearning
Scope	Concise learning modules designed to enhance specific skills.	Wider-ranging subjects with a focus on long-term perspectives.
Duration	Shorter modules	Longer duration

Content Type	Compact learning modules targeting specific skills or competencies.	Expansive content, broadening learning objectives to encompass multiple activities and goals.
Learning Object	Learning objectives are addressed in each micro-unit.	Wider-reaching learning objectives with a focus on long-term outcomes.
Flexibility	Provides agile flexibility to meet ad-hoc demands and shorter-term goals.	Comprehensive coverage of multiple topics with limited flexibility for accommodating requests.
Digitalization presence	Growing demand for digitalizing content to facilitate flexible usage in.	Digitalizing content is not always necessary.
Evaluation	Tasks are evaluated frequently to provide flexible feedback delivery.	Structured evaluation of specific development activities.

Source: Author own elaboration

Indeed, the described historical development of microlearning key term provides valuable insight into the transformation of this learning formats. Furthermore, comparing microlearning with macrolearning offers a better illustration of the various forms and approaches within microlearning. However, to better emphasize the essence of microlearning, it is necessary to conduct a deeper analysis of research trends.

To facilitate this deeper analysis, the author has chosen to analyse several research trends within the publication databases, specifically utilizing data from Scopus and Web of Science databases. Based on the researched data, it would be possible to identify current publication trends from the perspective of several areas. These include number of publications, publication trends by country and research areas. The author opted to search both databases using abstracts, titles, and keywords linked to the phrase "microlearning." Additionally, secondary term use "micro-learning" provides a broader scope for exploration of relevant research as well.

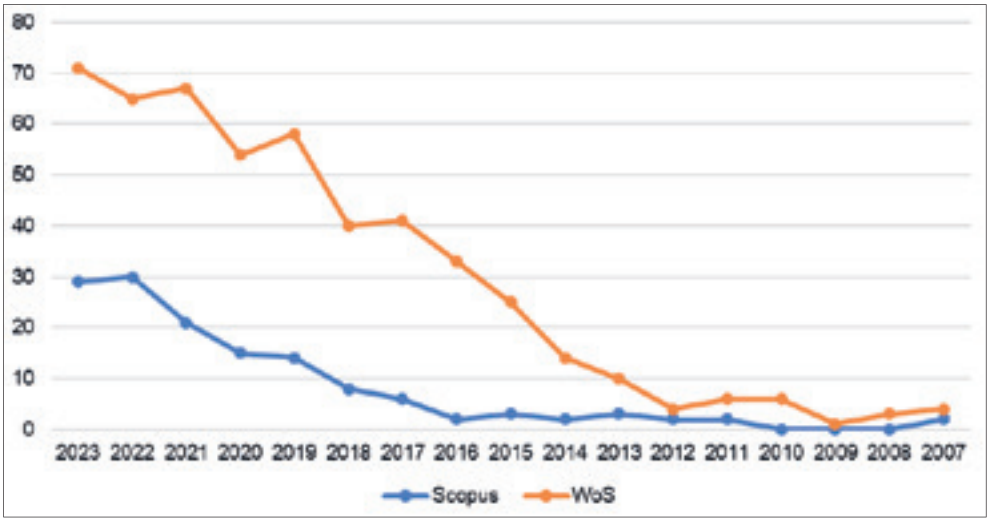

Figure 1. Number of publications (microlearning) in thousands

Source: Author own elaboration based on databases WoS and Scopus

By examining above stated terms in different databases, the author should be able to have a better understanding of the current trends related to the microlearning. This strategy enables the identification of relevant studies and provides a deeper understanding of the topic from different perspectives.

The Figure 1, illustrates the number of articles focused on the concept of "microlearning." This graph illustrates data collected from both the Scopus and Web of Science databases. In Scopus, a total of 149 publications have been identified, with the earliest two publications dating back to 2007. The Web of Science database contains 526 publications in total. In comparison, the earliest mention of microlearning in this database dates to 1983, with other notable instances occurring in 1996, 2003, and 2005. However, it is important to note that only four articles were published during these years (one per year), which the author of this research deemed as outliers and thus excluded them from the overall analysis. The most rapid increase in publications was observed in the Web of Science database in 2015. During this period, there was a quick rise in the number of published research papers. Within the Scopus database, this increase was identified in 2016. Nevertheless, it is important to note, that in 2021 for Web of Science and 2022 for Scopus was identified sudden decrease in publications in both databases, compared to previous periods.

The research areas yielded similar results and as a result highlighted a potential research gap for future investigations. In Web of Science, approximately 45% of the entire publications were prepared within the Computer Science field. In the Scopus database, this area of research comprised about 36% of the entire publications. These findings underscore the theoretical research conducted in this work, as several authors have interconnected the development and role of microlearning with an active use of digital technologies (Sankaranarayanan et al., 2023). Simultaneously, a potential research gap arises within the Business and Management areas. In the Web of Science database, only 4% of all publications were focused on this research area, while in the Scopus database, a comparable number of 3% of publications were related to Business and Management subjects. Hence, in total, only 32 research articles focused on the field of Business and Management, that have been published across both databases. Delving into the regions and countries where these research articles were published is imperative. In the Web of Science database, the most frequent publications on microlearning developed by the USA (20% of all research articles) and China (17% of all research articles) research. Germany emerged as the most published country with a total number of 30% of publications about microlearning in the Web of Science database. However, the German figures should be demonstrated within the total number of publications, which amounted to just 20 articles over 18 years. Regarding the geographical allocation, North America and Asia had the highest number of articles focusing on the microlearning topic. In the Web of Science database, only 26% of all articles were from the European region. The Scopus database confirmed similar findings, which reported 23% of articles from Europe. These findings suggest a potential space for further research, due to the fact, that European businesses have a significant potential to use this form of learning.

METHODOLOGY

The literature review in the previous section highlighted a notable research gap: the need for microlearning studies on the European continent, especially in manage-

ment and business. Therefore, the author considered it critical to conduct a step-by-step investigation into diverse aspects of microlearning. The author decided to conduct a descriptive study to achieve the above-stated objectives. Thus, it was necessary to collect detailed information about participants' associations with the primary benefits of microlearning. This step examines their attitudes towards microlearning and how learners perceive its advantages. The study also seeks to understand the extent to which participants believe microlearning can enhance their skills and knowledge. Afterward, the author analysed the gathered results and proposed related conclusion based on the received outcomes.

To address the research gap, the author decided to distribute a questionnaire survey to training participants within the automotive enterprise in the Czech Republic. The final sample consisted of 108 respondents. The response rate was represented by 68 returned surveys. The majority of respondents (39 individuals) were from Central Europe. Other 16 responses were collected from Eastern Europe and 7 from other parts of Europe. The remaining respondents identified themselves from other parts of the world, including South and North America and Africa. Based on these results, it is obvious that research focuses mainly on the European perspective. Additionally, participants were represented across different age groups, starting from 19 years and finishing by 60 years old or older. However, the most of respondents chose their age within the 25-29, 30-34, and 40-44 age ranges.

To collect related data and learners' viewpoints, the author distributed a questionnaire survey to all training participants before the fundamental training, oriented on the product portfolio and services. Stated survey was consist of closed questions with multiple answers and 7-point Likert scales were used to understand respondent's attitude towards the microlearning. To ensure that all related questions were comprehended correctly, the author supplied a clear brief about the research goal verbally (before the training activity) and contently within the questionnaire, including a description of the key terms utilized within the questionnaire survey. The survey was prepared using the Microsoft Forms tool and subsequently distributed.

It was necessary to propose relevant research questions (RQs) related to this topic. The RQs were stated as follows:

- RQ1: What are the benefits of microlearning as perceived by training participants for training participants?
- RQ2: How do training participants associate specific benefits with motivation to utilize microlearning during the development processes?

By addressing these RQs, the study aims to provide a deep understanding of how employees in the European context consider microlearning.

RESEARCH RESULTS

Within the primary research, the author focused on five fundamental benefits related to learners' engagement and motivation with microlearning. These elements were partly proposed based on the previous research, which provided a valuable foundation for subsequent practical implementation (Lapteva et al., 2019). Figure 2. demonstrates the primary outcomes of the questionnaire survey conducted by the author. According to the presented results, participants in various forms positively evaluate most of the

microlearning associations stated below. Demonstrated outcomes within the Figure 2. are summarized based on the participants responses and incorporated into one figure in terms to better demonstrate the overall perception and learner's viewpoint. The utilized verbal 7-Likert scale is supporting to better understand the level of association with microlearning and allowing participants to express their point of view in more consistence way.

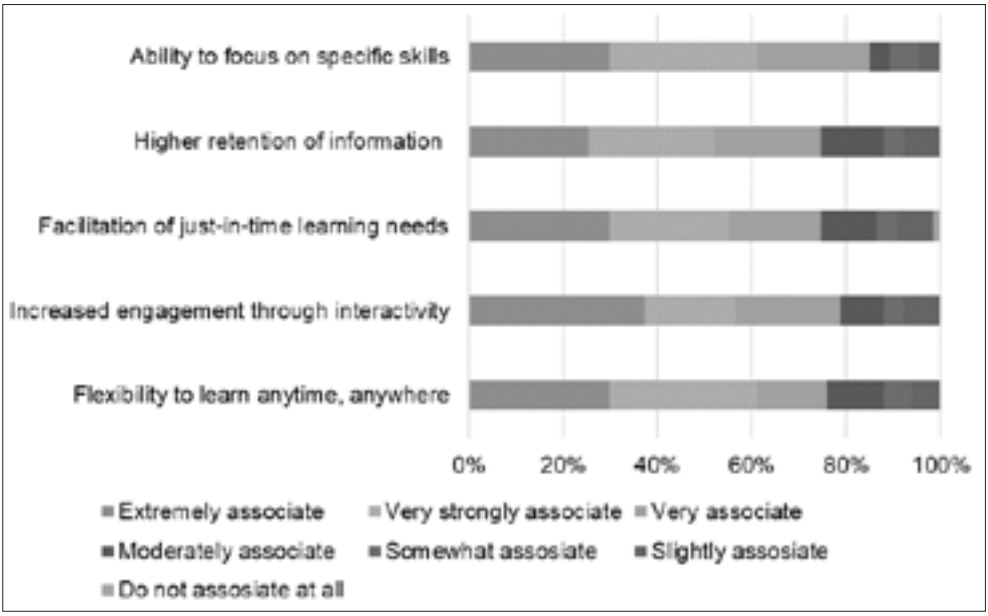

Figure 2. Association of the following benefits with microlearning

Source: Author own elaboration

According to the results, increased engagement through interactive content is the most valuable microlearning element that has been positively evaluated by training participants. This association with microlearning has 37% of "extremely associate" with the highest percentage among the observed elements. Flexibility to learn anytime also represented positive results. Within this element 31% of participants expressed "Very strongly associate" and 30% declared "Extremely associate" with this element. The ability to focus on specific skills was another highly evaluated element, with 31% "Very strongly associate" and 30% "Extremely associate" results. For higher retention of information, 27% of participants desired "Very strongly associate," and 25% of them "Extremely associate," indicating that learners consider microlearning enables them to retain information better than a conventional form of the development process within their organization. Nevertheless, it is possible to identify fewer positive consequences related to the training participants' associations with microlearning engagement and motivation to use it. For instance, 12% of participants "moderately associate" with the flexibility of microlearning. This signifies that while some participants recognize the benefit of flexible learning schedules, a significant part needs to find a convincing basis to engage with microlearning. Similarly, 13% of participants "moderately asso-

ciate" with higher retention through microlearning utilization. This signifies, that some recognition of microlearning's potential to improve information retention exists. However, it is not the strongest motivator for vide range of participants during the learning and development phase. Another crucial aspect is just-in-time learning. This element was considered a less positive association by participants, as shown in Figure 2. The research results indicate that participants do not universally consider this element as a critical factor in their motivation for microlearning.

DISCUSSION

These mixed perceptions emphasized the need for further research into tailoring microlearning to learners' professional development demands. Understanding the subtleties is critical to making microlearning approaches as effective as possible in enhancing training outcomes (Wang et al., 2020). By reviewing formerly published studies and adopting a systematic literature review approach, the author focused on specific aspects of microlearning more effectively. A substantial research gap about the usage of microlearning in Europe was ascertained by the literature reviewed. Further research in this area is needed. Besides, the literature review revealed a precondition to focus on determining any possible use of microlearning within management and business areas. The results from this questionnaire survey provide a foundation for understanding how microlearning can be effectively integrated and utilized in similar contexts during the learning and development processes in business areas. It also enables the identification of learners' preferences in the automotive business.

The author focused on five benefits and their associations with microlearning to better understand learners' perceptions of these new digital forms of corporate learning. According to the results, participants positively marked almost all explored benefits. This may indicate that the respondents recognized a great variety of the microlearning advantages. The most related benefit was increased engagement due to availability of interactive parts within the educational element. Research respondents confirmed that microlearning associational benefit because current microlearning solutions provide a wide range of interactive elements, that are increasing learners' engagement (Isibika et al., 2023). In this regard, participants are increasingly driven to self-learning and professional development in organizations through interactive digital solutions. These forms of learning are more attractive and valuable because they propose educational content in a more user-friendly way, facilitating better participant understanding. The research confirmed this statement even with regard to respondents' diversity, which varied from the youngest (19 years old) to older (55-59 years old) generations. Most respondents indicated that interactivity was one of the critical advantages of microlearning despite variations in age groups. The research results confirmed the relevance of interactivity for training effectiveness. Understanding the interactivity issue may assist in designing more effective training programs for a diverse workforce (Trávníčková et al., 2023).

The other valuable benefit of microlearning solutions is flexibility. With shorter learning content, learners are better able to balance work and skill development (Choudhary & Pandita, 2024). This approach allows them to find the optimal balance between professional and self-development activities. This flexibility benefits employees who must integrate continuous learning into their busy agendas. Microlearning

fully supports the employees in adapting their learning possibilities to their workforce environment. Microlearning is not a substitute for broader digital learning forms like eLearning. Instead, it complements them by providing quick and flexible learning opportunities. Microlearning improves eLearning and other digital forms of corporate learning by offering targeted, straightforward learning knowledge. It addresses learning gaps and supports employees' skills. This immediate applicability is a significant advantage of the microlearning solution for current businesses within the Europe. The flexibility of microlearning also supports personalized learning paths. Individuals can progress at their own and focus on areas, which are the most relevant for their work activities (Choudhary & Pandita, 2024). This statement was also confirmed by the conducted survey. The majority of the training participants positively evaluated the benefit of focusing on specific skills during the learning process. This individualized approach increases staff engagement and motivation. Microlearning also improves organizational learning by enabling the ongoing adjustment during the learning path. Employees that participate in continual learning can share their experience and knowledge with other colleagues. This step fosters a collaborative environment among the organization. Moreover, this relationship has the potential to increase the organization's creativity and problem-solving capabilities as well.

Continuing the discussion above, the author explored other researched benefits, including higher information retention with shorter learning sessions and the ability to enable the concepts for just-in-time learning. Participants perceived these benefits positively; there was a slight decline in their enthusiasm compared to other advantages. These benefits are also significant for organizations and were uncovered through a systematic literature review approach. Microlearning solutions offer an exceptional opportunity to develop specific skills in a just-in-time form. Unlike the formal and informal approaches to learning, which require more structured and time-intensive preparation, microlearning implementations may be easy to process and flexible in terms of adjustments. What makes most of the difference in nowadays enterprise is the higher level of information retention through these short learning courses. In that way, specific knowledge could be tailored to the needs of the enterprise and distributed efficiently among learners (Sung et al., 2023). However, applying microlearning solutions in this direction assumes several risks at the same time. One of those risks is a transformation of microlearning into a simple newsletter on the company's activities. To avoid this, companies should adopt a systematic and structured approach towards microlearning implementation. Such an approach will ensure that microlearning serves its purpose in effective skill transfer.

CONCLUSION

Microlearning solutions provide supportive opportunities to learn and grow for nowadays European enterprises. But it is still crucial to keep a structured approach toward this new form of employee development. Getting more insight into how learners see perceptions can help businesses make their training strategies more efficiency. This research unveiled a critical literature gap and evolved a valuable space for further investigation and contributed to theory and praxis. This study provides critical outcomes regarding participants' perceptions of microlearning. Nevertheless, it has certain limitations, which is essential to determine. Firstly, this research underscores the gap in

the current literature. Secondly, this study explores microlearning perspectives using a relatively small sample from one enterprise. Hence, it is possible to determine, that this fact may limit the generalizability of the results. Based on the stated above limitations, the following research should focus on a broader scope of respondents, including multiple enterprises exploration. It is also necessary to investigate the perceptions of current businesses regarding the utilization and applicability of microlearning. Future studies can offer more generalized and complete results applicable to contemporary business contexts. Discussions from this study have drawn essential insights from the training participants' perceptions and have thus widened directions for further research on exploring newer dimensions and advocating for the practicability of microlearning in the business learning domain.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

ADVERTISING MINORITY REPORT: THE (IN)VISIBILITY OF MINORITIES AND SENSITIVE GROUPS IN ADVERTISING

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Abstract: *The research focuses on the visibility of minorities and sensitive groups in television advertising in Serbia. Ethnic, sexual minorities, disabled, the elderly and people with large body types were chosen as groups which do not fit the usual representation template in commercial communication. Content analysis of television ads aired in 2023 showed very low visibilities amongst them, while some being practically invisible. Some of these groups carry certain risks in terms of communication backlash and controversy (ethnic, sexual minorities) which could to a certain point explain their exclusion from ads. On the other hand, the invisibility of others, carrying no controversies at all (disabled) only show the fact that they are not seen, as members of society or as consumers. Their societal invisibility drives their media invisibility which makes a kind of perpetuum mobile or a circle that needs to be broken in order to start creating a more inclusive and integrated local community.*

Keywords*: visibility, advertising, minorities, sensitive groups.*

JEL classification: *M37*

INTRODUCTION

In ”Ways of seeing” John Berger tells us that what we see and how we see are two different things (Berger, 2008, p. 8). The latter is a choice guided by all that we think, feel, know, believe. And by what we have previously seen. So the matter of what is visible and how we see it is important. Its relevance multiplies in todays visualy driven world. Our experiences, mediated by screens, are more visualised than ever (Mirzoeff, 2023, p. 1). In the fast pace of mass communication, it is easier to process it, it takes less effort and time (Kahneman, 2011, p. 98), it is more believable (Abraham & Mesaris, 2001, p. 216).

In that kind of world, only what is visible exists. We can acknowledge it, think, talk about it, understand it. Selecting what we see, promoting certain people, topics, events etc. and leaving others in the shadows, the media, including advertisers, creates the cultural discourse, influencing our perceptions of the world around us (Zayer, Sredl, Parmentier, & Coleman, 2012, p. 333)

Those usually left in the shadows are people not belonging to dominant groups, minorities, racial, ethnical, sexual, people who look or act different compared to what is the hegemonic template. Their low visibility is bigger than just media. Ethnic minorities are heavily prejudiced, sexual minorities do not have fundamental freedoms in a lot of countries, the disabled do not have access to the basics like jobs, proper care etc. Underrepresentation in media is a perfect picture of the average ``underunderstanding`` of these people in the wider societal context.

The research is focused around minority and sensitive groups. The main research question is are they and how visible in television advertising. The paper will analyze: racial and ethnic, sexual minorities, the elderly, disabled and people with large body types. Choice of the groups was guided by the idea to analyse how advertising treats those who are not dominant or "mainstream".This kind of analysis is not available localy so it will be of use in revealing a clearer picture of advertising and potential areas of improvement.

The structure of the paper consists of Introduction, Theoretical framework, Method, Research and discussion. In the Theoretical framework we will define key concepts like representation, meaning, visibility and set the base for understanding how selected groups are treated in advertising globally. Methods and Research and discussion set the framework for practical research and interpreting the data gathered, leading into Conslusions.

THEORETICAL FRAMEWORK

Visibility and representations

The core of any culture is in creating and exchanging meaning (Hall, 1997, p. 1). Everything we do, every object, act, event, all that constitutes life are active elements in these processes. They mean and represent something (Barker, 2000, p. 8). Representation is never a true image of what it is related to. It is not neutral or objective. It is a selection of elements shaped in a certain way. ``It implies the active work of selecting and presenting, of structuring and shaping not merely the transmitting of an already existing meaning, but the more active labor of making things mean`` (Hall, 1997, p. 60).

Like any other media content, advertising is an active part in creating culture, infusing it with meaning. In this case meanings are strategically planned and chosen to target appropriate audiences and achieve business goals.

In this paper television commercials will be treated as cultural texts. They become one in the moment of interacting with the audience when they ``activate certain meanings or gratifications" (Fiske, 1989, p. 180). Each cultural text is coded by the author and decoded by the viewer in the process of interpretation. Proper understanding requires a shared framework of cultural codes for its interpretation (Hall, 1997, p. 3). They change as societies evolve. The fact that they are not fixed suggests that they are or can be purposefully created. That is precisely the case in advertising. An ad is a system of societal signs and codes shaped by commercial goals (McMullan & Miller, 2010, p. 42). Each message is based on codes taken from the ``real world``. Advertising narratives are always rooted in meanings that already exist (Dyer, 2008, p. 102). It works with all that already is in the lives of potential consumers whether it is emotional, rational, practical, etc., reconnecting already existing connections in a new way (Ries & Trout, 2001, p. 5). So, an ad will reshape what is already there into a specific combination of signs and sym-

bols made to mean to the consumer (Holden, 1994, p. 452). As such, ads have formative and normative influence. In the process of creating culture, they have the power to enforce, reproduce, shine light on or obscure power relations, and inequalities. By pushing certain narratives to the front, others are left in the shadow or completely ignored. At the end of the whole process, it is important to have the audience look at the world, people, events or product in a certain, planned way (Storey, 2018, p. 81).

Visibility

In the era of modern communication technologies being visible has never been easier. Cambridge Dictionary defines it as ``the degree to which something is seen or known about`` (Oxford English Dictionary, 2024) To be seen, something has to have the characteristic of visuality. Something that is of visual character and form may or may not be seen. Visible is an extension of visual, it is visual enriched with symbolic meaning in the process of interpretation (Mirzoeff, 2023, p. 13).

Television, which will be in focus in this paper, has the power to make things massively visible, almost instantaneously. Content to which the audience is exposed is not random, it is always selected. Certain messages are pushed to the front, other minimized. Visibility is managed (Brighenti, 2007, p. 327). Those managerial decisions influence not only what we see but how we see as well.

A certain level of visibility in media is necessary for things to ”exist”. What is visible becomes relevant, open to discussion, analysis, and action, and can have both formative and normative influence. Visibility can be empowering, but also limiting or paralyzing. For example, migrants are highly visible, yet often framed as dangerous or unpredictable, fueling fear and panic (Brighenti, 2007, p. 333). This places responsibility on content creators and advertisers. Given its role in shaping perceptions, visibility will be a key focus of analysis in this paper.

One of the tasks of advertising is creating objects of high visibility. The choice to put certain values, lifestyles, people to the front aims to make sure that the audience is looking at the right thing in the right way. ”Pure and innocent eye is a myth” (Urry & Larsen, 2011, p. 2). What and how we look at is a choice always deeply influenced by what we know and believe (Berger, 2008, p. 8). Looking at and seeing things in a specific way are different. We see things through filters made of our own ideas, skills, desires and expectations, framed by societal factors like class, gender, nationality, age, education. So, it is not just about what we see, but ”how we are able to see, allowed or made to see” (Foster, 1998, p. 9).

The research question in this paper will be focused on minorities and sensitive groups and their visibility in advertising. We will research their share of visibility and how are they represented in television commercials aired in 2023. in Serbia.

Minorities and sensitive groups in popular culture and advertising

Main focus of this paper will be racial and ethnic, sexual minorities, elderly, disabled and people with large body types. Most of them have a long standing tradition of very low visibility in mass media and popular culture.

The elderly. World population is getting older. From 1974 to 2024, the global share of people aged over 65 rose from 5.5 % to 10.3 %. It is projected to double again in the next 50 years. (United Nations Population Fund, 2024). Share of people over 65

in the Serbian population is 22.3% and is continously rising (Statistical Office of the Republic of Serbia, 2024).

A study of advertising across a decade showed that only 7% of characters in commercials were older than 60 (Geena Davis Institute on Gender in Media, 2021). This was well below their share of global population at the moment of the study (19%). Their representations vary from leaders, authorities, being smart to being a subject of comedy (Geena Davis Institute on Gender in Media , 2020).

In Serbia, in a study by Ognjanov only 14.28% of ads featured models over 65 (Ognjanov, 2017, str. 185). They accounted for only 11.78% of all models. Their roles are usually grandparents, pensioners, and people preoccupied by their health.

Racial and ethnic minorities. Around 26% of people think their ethnic groups are portrayed improperly (Unstereotype Alliance, 2022). There is a rise in the share of nonwhite races and ethnicities in ads from 25.9% in 2006 to 53.0% in 2023 (Geena Davis Institute on Gender in Media, 2024).On the other hand, in commercials for toys 69% of dolls and action figures were white (Geena Davis Institute on Gender in Media, 2022)There is still a tendency to represent white people in contexts of business, leadership, intelligence more frequently than characters of color.

The ethnic structure of Serbian population is: Serbian 5 360 239, Hungarian 184 442, Bosniaks 153 801, Roma 131 936, Albanian 61 687 (Republički zavod za statistiku Republike Srbije, 2024). The only available research was conducted by Ognjanov (2008, str. 86). It showed that out of 254 models in print ads, only one could be potentially identified as Roma (representing 1.44% of Serbian population at the time).

Sexual minorities. A global study (IPSOS, 2021) across 27 countries shows that on average, 80% of population identify as heterosexual, 3% as gay, lesbian or homosexual, 4% as bisexual. Since the first wave of research in USA in 2012, the share of non heterosexual adults has more than doubled and is reaching 7.6%. At the front of these changes are the youngest with 1 in 5 Gen Z adults reporting LGBTQ status (Jones, 2024). There is no precise data for Serbia. If we estimate it around 5% that translates into more than 320 000 people.

Visibility of LGBTQ in ads is not changing much. From 2018 to 2023 it varied around 2-3% (Geena Davis Institute on Gender in Media, 2022).

Locally, there is no official data. Their presence in society as a whole, and in the media, is deeply influenced by safety and prejudice concerns. LGBTQ themed events are followed by strong conservative backlash gaining much traction in media making any kind of prejudice breaking very difficult (ERA, 2020).

Disabled. Around 16% of the global population are disabled (UNDRR, 2023). In Serbia, this group makes around 5,46% of the population or approximately 356 404 people (Republički zavod za statistiku Republike Srbije, 2024). (Republički zavod za statistiku Republike Srbije, 2024).

In 2019 only 2.2% of roles in ads were with disabilities (Geena Davis Institute on Gender in Media, 2024). In a study of 175 ads for toys, amongst 406 children, only one child had a disability. They are far more likely to be depicted as “smart” than characters without disabilities (35.6% compared with 8.2%) (Geena Davis Institute on Gender in Media, 2022).

Body typing. World Health Organisation reports that in 2022 43% of adults globally were overweight, 16% were obese. In the last 35 years, obesity in adults has

doubled, while in adolescents it has quadrupled (World Health Organisation, 2024). As per Ministry of Health of Republic of Serbia around 30% of population in 2022 was overweight, including every third child (Andric, 2023). According to Eurostat 63% of men and 45% of women in Serbia are overweight (Eurostat, 2019).

Characters with large body types are present in 7.2% of American ads. This is radically different to the population average (43%). In terms of framing, they are often in the comic relief part of shows (20%). They are more likely to be represented as silly, eating or drinking. In 15.3% of ads they are shown as "lazy" (Geena Davis Institute on Gender in Media , 2020).

In conclusion, in general, all minority and sensitive groups do not have adequate visibility in global popular culture, television, films, ads. Although there are moves in the direction of more inclusiveness, especially in some respects, there is a lot of room for improvement.

METHODOLOGY

Main reearch question in the paper is focused around the visibility and representations of minority and sensitive groups in advertising in Serbia. The method applied is quantitative content analysis.

Media in focus is television. Altough digitial is in massive expansion, television as media in Serbia is still the most consumed and influential. Average auditorium per week (watching TV at least once a week) is 85% of the population over 4 years old. In senior citizens it rises up to 95%, while for those under 18 it drops to around 75% (Nielsen Audience Measurement Srbija, 2023). The average time spent watching TV is 5 hours and 21 minutes per day. During 2023. around 12,000 specific commercials (not including different versions, lengths, cuts etc) were aired. In total over 8 million commercials were broadcasted on Serbian TV channels.

The sample can be defined as a systematic random sample. The principle of inlcuding units into the sample starts randomly, but is continued wthin a certain framework. In this case, the systematic aspect is chosing fourth week of January as a random start and continuing to the next week of every following month. The sample covered: 4th week of January, 1st week of February, 2nd week of March, 3rd week of April, 4th week of May, 1st week of June, 2nd week of July, 3rd week of August, 4th week of September, 1st week of October, 2nd week of November, 3rd week of December. Total sample included 12 weeks of prime time commercials aired in prime time (8 PM to midnight), on national channels across the whole year. Total number of commercials selected via this system was 625. Out of that, by the process of reduction, commercials where potential members of targeted minority or sensitive group can be identified were separated. The final sample included 130 commercials.

The unit of analysis is a television commercial. Analytical unit is the visibility of characters belonging to defined minority and sensitive groups.

Criteria for locating characters of interest were defined by the code book. All groups were identified by visual cues consisting of several dimensions. Coders looked at overall appearance, body features etc. For the elderly those were grey hair, wrinkles and similar. For racial and ethnic minorities it was the color of the skin, facial features, for larger body types appearance (the size and shape) of the body. Another dimension of visual cues are actions, body movements, interactions, positions etc. How they

walk, run, stand, interact with other, how close are they, do the they touch, hug, kiss etc, were relevant in pointing out a potential member of any segment. Third aspect of visual is context. Where are the characters, what is their costume, what is happening around them, are they with family, on top of the mountain, wearing hiking gear or in a family home, maybe a hospital, bank, at the doctors etc, all of this was important to understand the whole picture about each character.

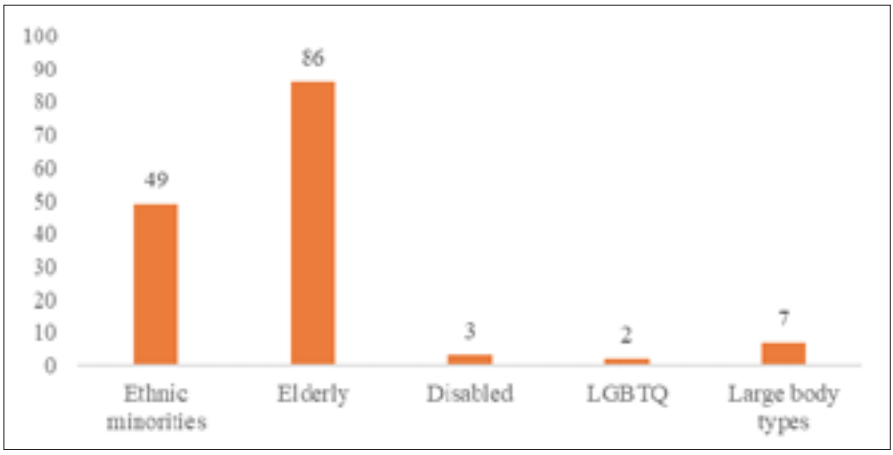
Aside from visual, audio and verbal cues were also researched. Voice over of each commercial was used as additional source of cues. Words and phrases helped in making sure the whole context of the commercial is understood and interpreted properly. For example, phrases like third life, pension, grandparents, grandchildren, keep your youthfulness etc. helped to better understand and select the right characters for the elderly group.

The sample was coded by 2 coders. Their intercoder reliability calculated as percentage agreement was 85% which is considered a good result. Analysis implemented was descriptive statistics, mostly frequencies.

RESULTS AND DISCUSSION

Out of the total number of commercials (625) there were 147 appearances characters potentially belonging to minorities and sensitive groups. The split, as represented on Chart 1 shows that ethnic minorities appear in 49, sexual in 2, the elderly in 86, disabled in 3 and those with large body types in 7 cases. Some ads show several groups so the total number of separate ads with one or more minority or sensitive group is 130. This is the sample we will use in the analysis.

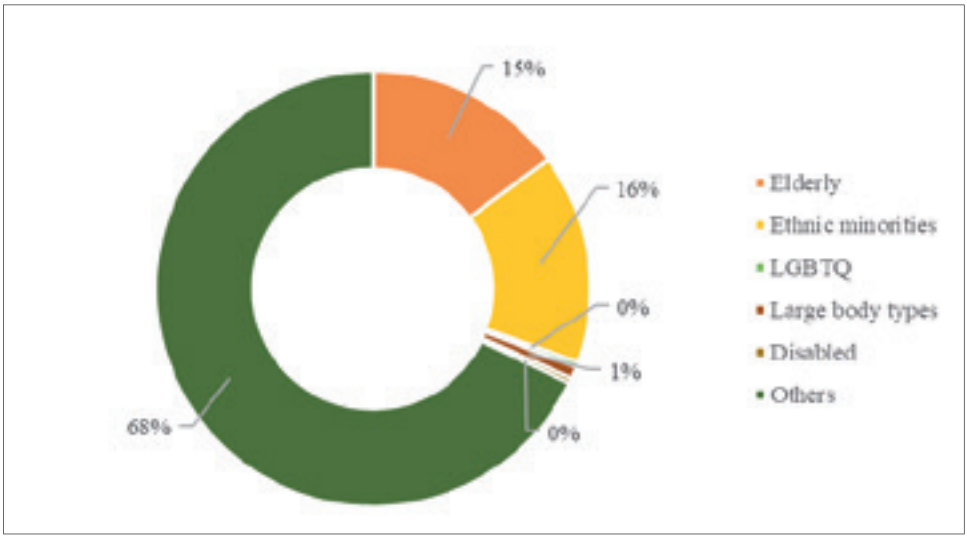
Chart 1. Number of appearances of minorities or sensitive groups in commercials



Source: Author

Amongst 1021 characters in these 130 ads around 32%, or 328 were identified as potential members of minority or sensitive groups. Share of these groups were: over 60 - 14.9 %, other races and ethnicities - 15.6 %, large body type - 0.9 %, LGBTQ - 0.4 %, disabled - 0.4 %. All others made up the majority of 68%.

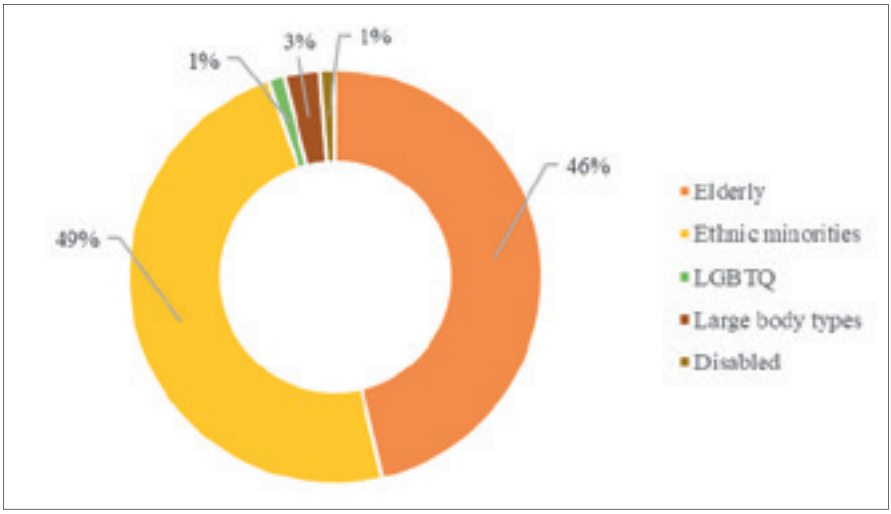
Chart 2. Share of characters in the minority and sensitive groups



Source: Author

The structure within the segment of minority and sensitive group characters is: over 60 - 46.3 %, other races and ethnicities - 48.5%, larger body type - 2.75%, LGBTQ -1.22%, disabled - 1.2%.

Chart 3. Representations in the total number of commercials with minorities and sensitive groups



Source: Author

The elderly

This subgroup is dominant compared to others in television in Serbia. They appear in 86 commercials and make almost half of representations in the minority and sensitive groups segment. Gender structure is balanced, 74 women and 78 men.

Main context the elderly are represented in is health. In 30 out of 86 ads they are preoccupied with maintaining their health and vitality. The second strongest framing for senior citizens is being grandparents. Out of 86 commercials, 15 show them as taking care of or having fun with their grandchildren.

This shows how they are looked upon as consumers. Several years back there was a strong push from banks to promote their loans for seniors. The fact that there are almost none of these in 2023 suggests that the standard of living is different, loans are not that affordable, senior citizens are no longer viable loan clients. The key concern in the life of the elderly, based on what we see in ads, should be to stay healthy. Everything else, like enjoying life etc., is secondary.

Disabled

People with disabilities appear in only 3 commercials (out of 130 representing minorities and 625 in total). Only 4 out of 1021 characters in television commercials within this segment in Serbia in 2023 were with identifiable disabilities. Out of those, 2 were with physical (leg prosthetic and vision impairment) and 2 with mental disabilities (Down syndrome). Although the sample is small and no general conclusions can be drawn, it is quite informative that both ads were foreign brands. There are no commercials for Serbian brands that show this group which accounts for around 356 404 people. So, when we look through a strictly local lens they are literally invisible.

The context in which disabled individuals are shown is positive and empowering. One ad features runners with prosthetic legs, another highlights a girl with Down syndrome in a beauty context, and a third shows a visually impaired Paralympic cycling champion. The focus on a fighting, winning mindset, while positive, is rare in reality. What's missing is the portrayal of disabled individuals living ordinary lives with everyday challenges. Their exclusion from such representation in ads reflects their broader exclusion from media and society and the urgent need to make these people visible.

LGBTQ

In the total sample only 4 characters in 2 ads could be possibly interpreted as member of LGBTQ minority. All of them are women. Both of the commercials were of foreign production, for global brands. There are no locally produced ads that show members of LGBTQ segment.

Two commercials out of 130 showing minorities and 625 in total make this unusable in terms of statistics or quantitative perspective. But it can be looked at as informative and suggestive of the overall attitude towards this group.

The contexts in the ads are jewelry and perfume, it is very feminine, romantic, and sensual. In each commercial 2 women are standing very close to each other, looking at each others' eyes, on the verge of kissing. There is a strong suggestion that they are a couple. The interesting part is that none of the commercials show them kissing. The possible gay dimension is only a suggestion. This can be interpreted as a sign of Serbian media and society being unready to show and the mass audience unready to see this minority group. Advertising, as always, is just following what society is living. Although not in this sample since it was aired earlier, another example of this is a commercial for a famous chewing gum brand. In the version aired on the Serbian market two young women are sitting in the car, being kind of bored. They take the chewing

and start smiling and moving to the music from the radio. In the version aired globally after taking the gum, they kiss with the message ``Do not hold yourself back``. The ad was purposefully edited to be in line with the local cultural context.

Gender is an interesting perspective in this case. All 4 potentially gay characters are women. This can suggest that it could be easier for mass audiences to start accepting women in these ``roles`` than men. The reason behind that is hidden in the centuries of modeling masculinities and femininities which can be an independent direction for further research.

Race and ethnicity

Total of 159 characters in the sample were identified as members of races other than white and ethnicities not dominant in Serbia. They make up over 48% of all characters in selected ads (1021). This percentage seems quite large considering the ethnic structure of the country (80% is of Serbian ethnicity). Looking closer into the specifics of the content this discrepancy becomes clearer.

Most of these representations appear in ads for global brands, produced around the world. They show races and ethnicities more in line with their home countries than the local ones. In only 2 commercials 5 characters can be identified as a minority relevant for Serbia. They are Roma. All others (154) are black, Asian, Latin, Middle Eastern and other races and ethnicities non relevant in the Serbian context.

For the minority we can see, though very little, they are represented in the usual stereotype – as a band playing on a wedding, with comical, almost caricatural atmosphere in the whole commercial. Overall, Serbian audiences are radically more exposed to racial and ethnical representations of people who are not a part of their society than those they live with.

It is important to note that it is not easy to identify these minorities without strong ethnic symbols which are not often shown in advertising. This dimension is quite sensitive in Serbia due to a number of historical circumstances. By not getting into this area brands are avoiding potential communication risks, backlash etc. That is why this data should be interpreted carefully.

One commercial is not enough for solid conclusions, but it is suggestive. And in line with results for most other minority and sensitive groups. Their lack of visibility is acute.

Body typing

Only 9 characters out of 1021 were of large body types. This is significantly below the real global (43%) and local share of overweight people (30%). With only 7 commercial featuring them, they are practically invisible in this subgroup (130) and even more in the total number of ads (625).

Majority of large body types were women (7), shown in commercials for cosmetic/beauty products (menstrual pads, hair treatments and deodorant). All these commercial were foreign productions, adapted for Serbian market. Out of the 2 men, one is shown as an illustration of pain, being annoying. The other one is a lead in a commercial for chips. Both were locally produced.

Although the sample is again too small for general conclusions, the idea of overweight women being represented in a context of beauty (so still working hard to main-

tain some kind of a ideal) and men being shown as having fun while eating chips can be informative. It seems as men are allowed to be off the normative more than women. This is in line with the long standing "tradition" of pressure on women to maintain a certain kind of appearance.

CONCLUSION

That which is not visible in the todays world almost does not exist. It is not a matter to be addressed, discussed, analyzed, improved, resolved. In terms of minorities and sensitive groups being visible is their chance be seen, recognized, better understood and integrated into societies.

Advertising is fundamentally a business focused on commercial goals. It rarely leads social change. Instead, it often selects topics and trends from society that align with its brand narratives. Commercials are designed to be relatable to a broad audience regarding what and who they depict. However, the situation is different for minorities and sensitive groups. While they are present in society, most remain nearly invisible in advertising.

The low visibility of all analyzed groups is striking. For certain groups, such as ethnic minorities in the local context, this can be somewhat understandable. Given the sensitivity and complexity of depicting these subgroups, it makes sense from a business perspective that brands, which tend to be risk-averse, often choose not to include them.

The elderly, compared to others, have a bit of visibility. Although the numbers are not in line with national averages, we can see them in television commercials in Serbia. Their representations tell us a lot about what is to be expected from third life in the country. Taking care of their health and their grandchildren are two main contexts. More active lifestyles like traveling, going out, having fun are not seen as relevant for senior citizens in Serbia judging from what we can see in ads.

Sexual minorities are not just underrepresented; they are essentially invisible in advertising. Only two commercials featured characters that could be interpreted as lesbian. Given the situation in Serbia—lack of rights, prejudice, and safety concerns for this group—their absence from ads is unsurprising.. While LGBTQ issues may not be controversial elsewhere, they remain risky in Serbia. Brands avoid topics that could trigger backlash Once these issues are no longer contentious in society, advertising will likely follow suit.

People with large body types are barely seen in ads, except in globally produced ones, reinforcing long-standing body stereotypes in media. This group doesn't fit the normative image of being slim, fit, or athletic. Their low visibility isn't due to risks, as with ethnic minorities, but a strategic choice to stick to "prescribed" yet unrealistic standards, despite 30% of people in Serbia being overweight. This raises several research questions, including the controversial issue of how increased representation impacts the obesity epidemic.

The invisibility of disabled people is probably the most striking. With all the potential risks or challenges in showing ethnic minorities or LGBTQ in Serbia, showing people with disabilities holds no such issues. That makes the invisibility of this sensitive group more difficult to understand. One possible explanation is that they are just not present, not only on screens, but in the minds of those who produce commercials. And they are not present, because they are not visible, anywhere. It is a circle that

needs to be broken as soon as possible,

Building an inclusive society is a long process requiring all to participate and contribute. The media, as institutions crucial in today's socialization processes, are the driving force in this direction. The choice to show or not to show someone in an ad goes well beyond commercial goals. It leaves a deeper trace than just the sales of a product. Advertising cannot change the world on tis own, but for sure it can contribute to the normalization, inclusion and in the end empathy and tolerance.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

LEADERSHIP STYLES, ESGS, AND EXTERNAL SOCIAL CAPITAL: IMPACT ON ORGANIZATIONAL COMMITMENT AND INNOVATION IN SERBIA

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Abstract: *Leadership, Environmental, Social, and Governance (ESG) practices and External Social Capital (ESC) are critical elements in contemporary organizations, frequently discussed in scientific literature. However, their influence on organizational commitment and innovation, particularly in the Serbian context, is underexplored. This study aims to investigate the relationships between leadership styles, ESG dimensions (Environmental Protection, Corporate Social Responsibility, Corporate Governance), and ESC on organizational commitment and innovation in Serbian enterprises in order to provide valuable insights for managers. All three hypotheses were confirmed. According to the results, environmental protection is the strongest predictor of innovation, explaining 28% of its variance. While leadership significantly affects both organizational commitment and organizational innovation, ESC has a less direct or even negative impact on commitment and a positive one on innovation. These results from Serbian organizations contribute to the understanding of how contemporary leadership and sustainability practices drive success in the context of the national business environment.*

Keywords: *Leadership; Commitment; ESG; ESC; Innovation.*

JEL Classification: *M10, L20, O30*

INTRODUCTION

In today's highly dynamic and complex business environment, leadership styles, environmental, social, and governance (ESG) factors, and external social capital (ESC) have been gaining recognition as important drivers of organizational success.

The study presented in this paper aims to explore the synergistic influence of transformational and transactional leadership aspects, ESG practices, and ESC on organizational commitment and innovation, focusing on organizations in Serbia.

Leadership has long been identified as a significant factor influencing organizational outcomes, with transformational leadership emphasizing motivation, inspiration, and intellectual stimulation, encouraging employees to transcend self-interest for collective goals (Bass & Avolio, 1994). In contrast, transactional leadership relies on structured expectations, rewards, and penalties to align employee performance with organizational objectives (Burns, 1978). The dynamics between these leadership styles, ESG factors, and ESC may lead to an improved contemporary understanding of commitment, and innovation, and overall business sustainability.

Organizational commitment, defined as an employee's emotional attachment and loyalty to their organization (Meyer&Allen, 1991), plays a crucial role in establishing a stable and productive workforce. Employee commitment is highly represented in research due to its importance for organizations, because the organization should make efforts that influence the strengthening of employee commitment and loyalty. This is particularly important because the higher the level of employee commitment, the lower the employee's intention to leave (Porter, Steers, Mowday, & Boulian, 1974). Leadership styles directly influence this commitment, yet the integration of ESG principles—covering environmental responsibility, social responsibility, and ethical governance with integrity—has emerged as a new factor contributing to both employee commitment and organizational innovation. For that reason, ESG practices are no longer merely a matter of corporate reputation; they are essential to creating long-term value and fostering an innovative culture (Eccles, Ioannou, & Serafeim, 2014). In response to increasingly serious sustainable development issues in the environment, society, and financial markets, international organizations and countries worldwide have proposed action plans for sustainable development, such as ESG, to build a sustainable and comprehensive development framework for human society (Li, Wang, Sueyoshi, & Wang, 2021). Similarly, ESC, which refers to the external networks, partnerships, and relationships an organization maintains, can provide access to new resources, ideas, and opportunities that support innovation, and strategic growth (Nahapiet & Ghoshal, 1998).

In particular, the study examines how transformational leadership, through its emphasis on vision and employee engagement, may be more conducive to fostering innovative cultures and commitment. At the same time, transactional leadership's structured approach could provide the necessary stability for executing innovative ideas. ESG practices and external social capital enhance this interplay by creating a sustainable environment in which employees and external stakeholders feel engaged in the organization's mission.

Given Serbia's evolving economy and its transitional status, understanding these dynamics is especially relevant. Serbian organizations face unique challenges as they adapt to global trends in leadership and sustainability while struggling with traditional management practices. This study provides valuable insights into how leadership styles, along with ESG and ESC factors, contribute to organizational commitment and innovation, offering a roadmap for organizations in Serbia aiming to boost their resilience and competitive edge.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The relationships between leadership styles, environmental, social, and governance (ESG) practices, and external social capital (ESC) on organizational commitment and innovation have been highlighted as critical areas of research in organizational studies. Each of these variables—leadership, ESGs, ESC, organizational commitment, and innovation, are intertwined according to the authors referenced below and for this reason, this study was designed to explore the complex connections and dependencies among them, focusing on organizations in Serbia.

Leadership and Organizational Commitment

Transformational and transactional leadership styles have been widely studied for their effects on organizational commitment. According to some authors (Meyer & Allen, 1991), organizational commitment is defined as the emotional attachment, identification, and involvement an employee has with their organization. Other authors (Ghasabeh, Soosay, & Reaiche, 2015) state that transformational leaders motivate employees by promoting a sense of purpose and vision that aligns with personal values, thereby enhancing employee engagement and organizational commitment. This style of leadership has been shown to increase loyalty, reduce turnover, and create a supportive work environment that builds long-term commitment (Hoch, Bommer, Dulebohn, & Wu, 2018).

Transactional leadership, while more pragmatic and task-focused, also contributes to organizational commitment, especially in environments that require clear structures and rules. By establishing a system of rewards and penalties based on performance, transactional leaders provide stability and clarity, which can enhance employees' sense of security and attachment to the organization (Breevaart, Bakker, Demerouti, & Derks, 2014).

Leadership and Innovation

When it comes to fostering innovation, transformational leadership is often seen as a key driver. Leaders who encourage creativity, risk-taking, and intellectual stimulation create a culture that supports innovation at all levels (Bass & Avolio, 1994). Transformational leadership enhances employees' willingness to explore new ideas, collaborate across teams, and seek innovative solutions, all of which are vital for maintaining a competitive edge (Ghasabeh, Soosay, & Reaiche, 2015). Transactional leadership, while less directly related to innovation, plays a supportive role by establishing a structured environment where innovations can be systematically implemented and monitored (Breevaart, Bakker, Demerouti, & Derks, 2014). The combination of visionary thinking and structured execution is essential for organizations seeking to balance creative exploration with practical application.

ESG Practices and Organizational Commitment

Organizational commitment is a concept that is often researched, but is rarely considered in relation to ESG (Choi, Jeong, & Park , 2024). Environmental, social, and governance (ESG) practices have emerged as powerful factors influencing organizational commitment, particularly in industries where sustainability and ethical governance are increasingly prioritized. ESG initiatives contribute to a sense of pride

and purpose among employees, which enhances their commitment to the organization (Eccles, Ioannou, & Serafeim, 2014). Studies show that employees are more likely to remain committed to organizations that prioritize social and environmental responsibility, as these practices align with their personal values (Cheng, Ioannou, & Serafeim, 2014). The authors Choi et al. (Choi, Jeong, & Park , 2024) investigated the recognition of ESG activities by employees. Their results indicate that recognition of ESG is vital because it affects the increase of OC, which is an important predictor of employee satisfaction and negative turnover rate. For this reason, the authors indicate that managers should invest efforts in order to better recognize ESG practices by employees, which would be reflected in increasing the level of OC.

Additionally, companies that are perceived as leaders in ESG are often seen as more ethical and stable, further reinforcing employee loyalty and commitment (Raimo, Caragnano, Zito, Vitolla, & Mariani, 2021). By incorporating ESG principles into their strategic framework, organizations not only foster internal loyalty but also attract talent that is deeply aligned with their sustainability goals. The results of some research (Kim, Park, Kim, & Lee, 2024) indicate that the application of ESG practices contributes to the self-esteem and commitment of employees, and in this way ESG also affects the increase of employee retention. The authors believe that such results indicate that ESG is an important means of support in organizations, which is why it is particularly significant.

ESG practices and innovation

ESG practices have been increasingly linked to organizational innovation, as companies that prioritize sustainability are often pushed to rethink traditional business models and processes. According to Luo & Du (Luo & Du, 2015), the integration of ESG factors creates opportunities for organizations to innovate in areas such as product development, resource efficiency, and ethical governance. Similarly, Hawn & Ioannou (Hawn & Ioannou, 2016) suggest that organizations that adopt ESG frameworks tend to encourage innovative solutions to address environmental and social challenges, positioning themselves as leaders in sustainable innovation.

Additionally, ESG initiatives can serve as a catalyst for cross-functional collaboration, as employees from different departments work together to implement sustainability goals, thus promoting a culture of innovation (Eccles, Ioannou, & Serafeim, 2014). Ong et al. (Ong, Lee, Teh, & Magsi, 2019) emphasize that the implementation of active environmental protection strategies and routines can promote innovation within organizations. This implies that ESG practices not only contribute to a more engaged and committed workforce but also foster an environment that encourages continuous innovation.

External Social Capital and Organizational Commitment

External social capital (ESC), defined as the relationships and networks an organization maintains with external stakeholders, plays a crucial role in influencing organizational commitment. ESC provides organizations with access to external resources, ideas, and legitimacy, all of which can strengthen employees' belief in the organization's mission and future opportunities (Nahapiet & Ghoshal, 1998). When organizations effectively utilize their external networks, they demonstrate stability and

a strong reputation, which can increase employees' commitment by providing a sense of security and long-term viability (Mina, Bascavusoglu-Moreau, & Hughes, 2014).

Barroso-Castro et al. (Barroso-Castro, Villegas-Perinan, & Casillas-Bueno, 2015) believe that greater internal capital has a greater and positive impact of external social capital on organizational performance. Additionally, the authors explain that when the internal social capital is greater, the degree of improvement in the organization's performance increases, and in a situation where the external social capital is greater, the organization's performance may decline. The research results of Rababah et al. (Rababah, Javed, & Malik, 2022) show that the internal social capital of an organization affects the improvement of financial and non-financial performance. On the other hand, the external social capital of the organization has a positive effect on the financial performance of the organization, but no impact on non-financial performance has been determined. Some authors find that ESC fosters organizational commitment by enhancing trust between the organization and external partners, reinforcing a sense of belonging and shared purpose among employees who see their organization as part of a broader, supportive community (Leal-Rodríguez, Eldridge, Roldan, Leal-Millan, & Ortega-Gutierrez, 2015).

External Social Capital and Innovation

ESC is a critical enabler of organizational innovation, as external networks provide access to new knowledge, resources, and opportunities. Organizations that actively engage with external partners, such as suppliers, customers, or research institutions, are better positioned to leverage external insights and expertise for innovation (Inkpen AC & Tsang, 2016). Organizations can gain access to sources of knowledge and experience through external social capital. In this way, organizations can come up with innovative solutions and combine different perspectives and approaches, which increases the possibilities for achieving better financial performance (Barroso-Castro, Villegas-Perinan, & Casillas-Bueno, 2015). Studies indicate that firms with high levels of ESC are more innovative, as they are able to tap into diverse sources of information and ideas, fostering creativity and adaptability (Leal-Rodríguez, Eldridge, Roldan, Leal-Millan, & Ortega-Gutierrez, 2015).

In transitional economies like Serbia, where internal resources may be limited, ESC becomes even more valuable. By building strong external relationships, Serbian organizations can overcome resource constraints and drive innovation, allowing them to compete on a global scale.

The literature reviewed indicates that transformational and transactional leadership styles, ESG practices, and external social capital have a profound influence on organizational commitment and innovation. Transformational leadership, ESG engagement, and strong external social capital are especially important in fostering a committed workforce and cultivating an innovative organizational culture. These findings are highly relevant for organizations in Serbia, which are navigating a rapidly changing business landscape and seeking to balance tradition with innovation. There are no research studies exploring these factors and their impact on organizations in Serbia.

Based on these findings, three hypotheses were developed:

Hypothesis 1: Transformational leadership has a statistically significant impact on organizational commitment in Serbia.

Hypothesis 2: ESGs and ESC influence organizational innovation in organizations in Serbia.

Hypothesis 3: There is a statistically significant difference in organizational loyalty between employees in small and medium-sized enterprises in Serbia.

METHODOLOGY

For the purpose of this research, an online questionnaire was set up on the Google Forms platform, and the link to the Questionnaire was distributed online, by email, and through social networks. The research was conducted from February 1st to May 1st, 2024. Respondents who participated in this research were employed in organizations in Serbia. In order to protect the confidentiality of the data, the personal data of the respondents have been omitted. A total of 204 responses were collected, out of which 132 respondents were women and 72 respondents were men. 186 respondents were under 45 years of age, 175 respondents had a university education, and 155 respondents were employed in an executive level position. 144 respondents were employed in domestic companies. 145 respondents were employed in the service sector and 112 respondents were employed in medium size enterprises in Serbia.

Measures

In the research conducted, the Transformational Leadership Behavior Inventory, TLI (Podsakoff P. , MacKenzie, Moorman, & Fetter, 1990) was used to measure Transformational leadership behavior. The consistency, reliability, and validity of the instrument have been confirmed in research (Podsakoff, MacKenzie, & Bommer, 1996); (Podsakoff P. , MacKenzie, Moorman, & Fetter, 1990)). The scale in this questionnaire measures six dimensions of transformational leadership behavior: articulating a vision, providing an appropriate model, fostering the acceptance of group goals, having high performance expectations, providing individualized support, and providing intellectual stimulation (Podsakoff P. , MacKenzie, Moorman, & Fetter, 1990). The first three dimensions: articulating a vision, providing an appropriate model, and fostering the acceptance of group goals, have high intercorrelations, due to which they are combined into one construct, called core transformational leader behavior (Podsakoff P. , MacKenzie, Moorman, & Fetter, 1990); (MacKenzie, Podsakoff, & Rich, 2001).

In the same questionnaire, transactional leadership behavior was measured using two dimensions: contingent reward behavior and contingent punishment behavior. The four-item contingent reward behavior scale was used to measure contingent reward behavior (Podsakoff, Todor, Grover, & Huber, 1984); (Podsakoff & Organ, 1986); (MacKenzie, Podsakoff, & Rich, 2001). To measure contingent punishment behavior in this work, a three-item contingent punishment behavior scale (Podsakoff, Todor, Grover, & Huber, 1984); (MacKenzie, Podsakoff, & Rich, 2001) was used. The consistency, reliability and validity of these constructs have been confirmed in research by other authors (Podsakoff, Todor, Grover, & Huber, 1984); (Podsakoff, MacKenzie, S. B., & Fetter, 1993).

For ratings of leadership items (transformational and transactional leadership behavior), a seven-point Likert scale ranking from 1 (strongly disagree) to 7 (strongly agree) was used, in accordance with the research of MacKenzie et al. (MacKenzie, Podsakoff, & Rich, 2001).

In this research, ESG performance was measured by the scale developed by De Roeck and Lee (De Roeck & Farooq, 2018); (Lee, Zhang, & Xie, 2019); (Zhu & Huang, 2023). The instrument has 24 items and three scales: environmental performance is measured with six items, corporate social responsibility is measured with twelve items and corporate governance is measured with six items. A five-point Likert scale was used ranking from 1 (strongly disagree) to 5 (strongly agree), in accordance with the author's research Zhu and Huang (Zhu & Huang, 2023).

This research also measured Organizational Commitment by an instrument developed by Cook and Wall (Cook & Wall, 1980). The instrument has 3 dimensions that are measured on the basis of 9 items, and the dimensions are: organizational identification, organizational involvement, and organizational loyalty of employees. To evaluate the answers, it was used as a five-point Likert scale ranking from 1 (strongly disagree) to 5 (strongly agree).

External social capital was measured using six items, a scale developed by Peng and Luo (Peng & Luo, 2000). The scale measures how often, in the opinion of employees, members of top management had contact with key stakeholders during the past three years, similar to the survey (Chen, Zheng, Yang, & Bai, 2016). In accordance with the research of Peng and Luo (Peng & Luo, 2000), seven-point Likert scales were used ranking from 1 (strongly disagree) to 7 (strongly agree).

Organizational innovation was measured by the scale used in the research by Chen, et al. (Chen, Zheng, Yang, & Bai, 2016). The scale was developed in 1982 (Miller & Friesen, 1982), and later modified by the authors Hoffman and Hegarty (Hoffman & Hegarty, 1993), and it contains six items that measure the degree of technological and managerial innovation in the past three years, according to the respondents. The respondents evaluated the items based on seven-point Likert scales, ranking from 1 (strongly disagree) to 7 (strongly agree).

RESULTS

The collected data were processed in accordance with the applied instruments in the program IBM SPSS Statistics 22. Descriptive statistics and correlation analysis of the relationship of independent variables, leadership dimensions, ESG dimensions, External social capital, Corporate social responsibility and dependent variables, Organizational Commitment, and the Organizational innovation scale. Regression analysis was used to regression analysis is used to determine the predictive influence of independent variables on dependent variables. Additionally, the relationship between independent and dependent variables was observed with moderators Origin, Sector, and Size of the companies.

Descriptive statistics

Table 1 presents descriptive statistics showing the names of dimensions, abbreviations used in the paper for all dimensions, mean value, standard deviation of all dimensions, as well as Cronbach's alpha. The Cronbach's alpha values vary in the range from $\alpha = 0.655$ (OC3) to $\alpha = 0.955$ (ESG).

Table 1. Descriptive statistics

Name	Abbrev.	N	Min.	Max.	Mean	Std. Dev.	α
Core transformational leader behavior	L_1	204	1.00	7.00	4.7402	1.60920	0.908
High performance expectations	L_2	204	1.00	7.00	4.9886	1.47052	0.796
Supportive leader behavior	L_3	204	1.00	7.00	3.9473	1.84280	0.950
Intellectual stimulation	L_4	204	1.00	7.00	4.2635	1.75048	0.935
Contingent reward behaviour	L_5	204	1.00	7.00	4.3260	1.88421	0.930
Contingent punishment behavior	L_6	204	1.00	7.00	4.6454	1.57779	0.892
Environmental, Social, & Governance	ESG	204	1.25	5.00	3.2839	.86384	0.955
Environmental performance	ESG_EP	204	1.00	5.00	2.6528	1.17570	0.936
Corporate social responsibility	ESG_CSR	204	1.17	5.00	3.4673	.93933	0.935
Corporate governance	ESG_CG	204	1.17	5.00	3.5482	.85176	0.860
Organizational commitment	OC	204	1.00	5.00	3.4521	.91116	0.895
Organizational identification	OC1	204	1.00	5.00	3.5637	1.11406	0.862
Organizational involvement	OC2	204	1.00	5.00	3.9510	.91380	0.794
Organizational loyalty	OC3	204	1.00	5.00	2.8415	1.03916	0.655
External social capital	ESC	204	1.00	7.00	3.7884	1.54011	0.927
Organizational innovation	OI	204	1.00	7.00	4.2639	1.43808	0.938
	Valid N (listwise)	204					

Source: Authors

Correlations

Table 2 shows the correlation coefficients between independents: Leadership dimensions (L_1 to L_6), ECS, ESG dimensions, and dependents, OC dimensions, and OI. Correlation analysis confirmed the interdependencies of all independent dimensions with dependent OC, OC1, OC2, and OC3, except for L_6 and ESC. L_6 has significant correlations only with OI, and correlations with dimensions OC, OC1, and OC3 are negative and not significant. These results confirm H1. ESC has a statistically significant correlation only with OI, and the correlations with OC1 and OC3 are negative but not significant. All correlations of variables ESG, ESG_EP, ESG_CSR, and ESG_CG, with dependent variables OC, OC1, OC2, OC3, and OI are relatively high and statistically significant. The above results confirm H2.

Table 2. Correlation coefficients

	OC	OC1	OC2	OC3	OI
L_1	.642**	.678**	.516**	.508**	.379**
L_2	.191**	.147*	.171*	.194**	.230**
L_3	.611**	.633**	.484**	.503**	.297**
L_4	.602**	.635**	.487**	.475**	.377**
L_5	.570**	.627**	.430**	.449**	.284**
L_6	-.043	-.041	.000	-.069	.164*

ESC	.003	-.038	.071	-.015	.229**
ESG_EP	.445**	.455**	.315**	.407**	.567**
ESG_CSR	.730**	.781**	.566**	.585**	.552**
ESG_CG	.606**	.663**	.497**	.447**	.519**
ESG	.698**	.743**	.538**	.567**	.621**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Authors

Regression analysis

The regression method was used to examine the contribution of all independent variables to the total R square of the regression with dependent variables. In this way, a better insight and understanding of the influence of leadership decisions on organizational commitment in organizations in Serbia and on organizational innovations is achieved. The predictive effect of independent dimensions on dependent OC1, OC2, OC3, and OI in organizations in Serbia is presented in Table 3 and Figure 1. Independent variables are the best predictors of OC1 (R^2=0.714) in organizations in Serbia. Accordingly, 74% of organizational identification of employees in organizations in Serbia can be predicted by leadership decisions. Prediction for each dependent dimension separately: OC1 (R^2=0.714, F change-48.216, p<0.001), OC2 (R^2=0.405, F change-13.117, p<0.001), OC3 (R^2=0.439, F change- 15.091, p<0.001) and OI (R^2=0. 456, F change-16.175, p<0.001).

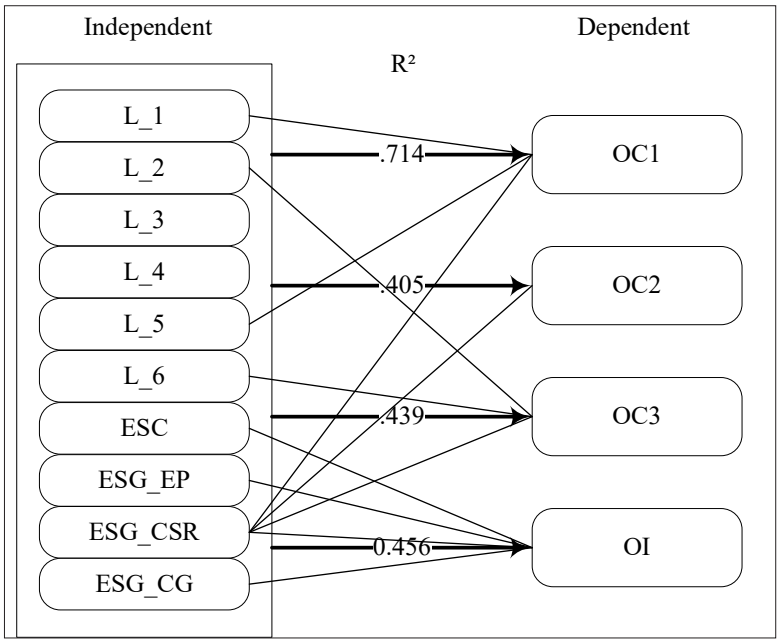
Table 3. Regression analysis

Dependent	Independent	β	t	Sig.	R^2	F
OC1	L_1	,246	3,773	,000	.714	.000
	L_2	,062	1,201	,231		
	L_3	,034	,479	,632		
	L_4	-,028	-,398	,691		
	L_5	,154	2,597	,010		
	L_6	-,057	-1,175	,241		
	ESC	-,012	-,300	,765		
	ESG_EP	-,053	-1,053	,294		
	ESG_CSR	,530	7,013	,000		
	ESG_CG	,068	1,020	,309		
OC2	L_1	,168	1,785	,076	.405	.000
	L_2	,102	1,385	,168		
	L_3	,116	1,143	,254		
	L_4	,014	,132	,895		
	L_5	,018	,205	,838		
	L_6	-,043	-,603	,547		
	ESC	,099	1,708	,089		
	ESG_EP	-,105	-1,432	,154		
	ESG_CSR	,346	3,167	,002		
	ESG_CG	,121	1,261	,209		

OC3	L_1	,120	1,317	,189	.439	.000
	L_2	,233	3,237	,001		
	L_3	,151	1,528	,128		
	L_4	-,082	-,822	,412		
	L_5	,056	,674	,501		
	L_6	-,166	-2,425	,016		
	ESC	-,033	-,581	,562		
	ESG_EP	,079	1,113	,267		
	ESG_CSR	,482	4,549	,000		
	ESG_CG	-,125	-1,341	,182		
OI	L_1	,076	,842	,401	.456	.000
	L_2	,043	,603	,547		
	L_3	,007	,071	,944		
	L_4	-,022	-,224	,823		
	L_5	-,041	-,504	,615		
	L_6	,078	1,154	,250		
	ESC	,195	3,515	,001		
	ESG_EP	,281	4,016	,000		
	ESG_CSR	,226	2,169	,031		
	ESG_CG	,181	1,976	,050		

Source: Authors

Figure 1. Regression analysis



Source: Authors

Independent T-Test

In this study, we investigate whether there were statistically significant differences in the impact of strategic decisions on the organizational commitment of employees and organizational innovation in domestic and foreign companies, the manufacturing and service sectors, and small and medium-sized companies in Serbia. The mean values for the subsamples and correlation coefficients are shown, which allows a better insight into the differences between the subsamples. In order to determine statistically significant differences, The Independent Samples T-Test was performed.

Origin

In this research, there are 144 respondents from domestic companies and 60 respondents from foreign companies. The largest difference in mean values among sub-samples is observed at OC3 (D:3.0069, F:2.4444), and the smallest difference is observed at ESG_CSR (D:3.4647, F:3.6917). The results of Descriptive statistics according to Origin are shown in Table 4.

Table 4. Origin: Descriptive statistics

Origin Domestic (N=144) Foreign (N=60)	Minimum		Maximum		Mean		Std. Deviation	
	D	F	D	F	D	F	D	F
L_1	1.00	1.00	7.00	7.00	4.7060	4.8222	1.63513	1.55558
L_2	1.00	1.00	7.00	7.00	5.0417	4.8611	1.52517	1.33375
L_3	1.00	1.00	7.00	7.00	3.9566	3.9250	1.83124	1.88566
L_4	1.00	1.00	7.00	7.00	4.2066	4.4000	1.81638	1.58729
L_5	1.00	1.00	7.00	7.00	4.3559	4.2542	1.87166	1.92799
L_6	1.00	1.00	7.00	7.00	4.6505	4.6333	1.62552	1.46998
ESC	1.00	1.00	7.00	7.00	3.8750	3.5806	1.47900	1.67245
ESG_EP	1.00	1.00	5.00	5.00	2.5972	2.7861	1.13835	1.26077
ESG_CSR	1.33	1.17	5.00	5.00	3.4647	3.4736	.91921	.99392
ESG_CG	1.17	1.67	5.00	5.00	3.4884	3.6917	.86043	.81985
ESG	1.25	1.38	5.00	5.00	3.2538	3.3563	.83246	.93829
OC	1.44	1.00	5.00	5.00	3.5340	3.2556	.89530	.92631
OC1	1.00	1.00	5.00	5.00	3.5741	3.5389	1.11600	1.11840
OC2	1.00	1.00	5.00	5.00	4.0208	3.7833	.84200	1.05557
OC3	1.00	1.00	5.00	5.00	3.0069	2.4444	1.01616	.99275
OI	1.00	2.17	7.00	7.00	4.2002	4.4167	1.44527	1.42102

Source: Authors

Table 5 shows the correlation coefficients of sub-samples of domestic and foreign companies in Serbia. L_2 has no statistical significance in foreign companies in Serbia, while in domestic companies it has a statistically significant influence on the variables of organizational commitment and organizational innovation. In addition, ESC and L_6 have statistically significant correlations with OI in the sub-sample of domestic companies in Serbia, and in foreign companies, they have no statistically significant influence on OI. Except for the mentioned relationships, all other relationships are in accordance with the general sample.

Table 5: Origin: Correlation coefficients

Origin	OC		OC1		OC2		OC3		OI	
	D	F	D	F	D	F	D	F	D	F
L_1	.621**	.734**	.645**	.764**	.457**	.672**	.554**	.479**	.407**	.300*
L_2	.222**	.087	.173*	.071	.233**	.025	.204*	.136	.244**	.212
L_3	.575**	.710**	.576**	.766**	.437**	.586**	.524**	.500**	.303**	.285*
L_4	.590**	.691**	.594**	.758**	.462**	.597**	.525**	.446**	.383**	.354**
L_5	.543**	.639**	.583**	.732**	.405**	.485**	.461**	.449**	.270**	.324*
L_6	.013	-.193	.006	-.168	.085	-.184	-.042	-.156	.231**	-.017
ESC	.037	-.105	-.028	-.064	.093	.008	.050	-.230	.387**	-.092
ESG_EP	.428**	.532**	.393**	.598**	.275**	.420**	.473**	.370**	.544**	.613**
ESG_CSR	.760**	.690**	.792**	.761**	.567**	.582**	.670**	.456**	.541**	.581**
ESG_CG	.646**	.598**	.661**	.690**	.517**	.529**	.553**	.336**	.480**	.608**
ESG	.733**	.675**	.742**	.755**	.540**	.565**	.674**	.439**	.609**	.647**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Authors

Based on the comparison of the mean values of independent sub-samples, significant statistical differences between the sub-samples in domestic and foreign companies at OC and OC3 were determined. Statistically significant differences are shown in Table 6.

Table 6. Origin: T-Test

Origin		Group Statistics			Independent Samples Test						
		Mean	Std. Dev.	Std. Error Mean	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.
OC	D	3.5340	.89530	.07461	.369	.544	2.003	202	.046	.27840	.13898
	F	3.2556	.92631	.11959			1.975	107.170	.051	.27840	.14095
OC3	D	3.0069	1.01616	.08468	.351	.554	3.627	202	.000	.56250	.15510
	F	2.4444	.99275	.12816			3.662	112.881	.000	.56250	.15361

Source: Authors

Sector

In this research, 59 respondents were employed in the manufacturing sector, and 145 respondents were employed in the service sector. One of the biggest differences in mean values is with subsample ESG_EP (P: 3.0593, S: 2.4874), and the smallest difference is observed with OC3 (Q:2.8305, S:2.8460). The results of Descriptive statistics by Sector are shown in Table 7.

Table 7. Sector: Descriptive statistics

Sector Productive (N=59) Service (N=145)	Minimum		Maximum		Mean		Std. Deviation	
	P	S	P	S	P	S	P	S
L_1	1.33	1.00	7.00	7.00	4,9322	4,6621	1.49812	1.65084
L_2	1.67	1.00	7.00	7.00	4.8814	5.0322	1.40574	1.49862
L_3	1.00	1.00	7.00	7.00	4.1144	3.8793	1.84199	1.84516
L_4	1.00	1.00	7.00	7.00	4.5042	4.1655	1.67993	1.77468
L_5	1.00	1.00	7.00	7.00	4.6059	4.2121	1.64015	1.96880
L_6	1.33	1.00	7.00	7.00	4.8305	4.5701	1.49248	1.61011
ESC	1.00	1.00	7.00	7.00	3.9520	3.7218	1.59593	1.51740
ESG_EP	1.00	1.00	5.00	5.00	3.0593	2.4874	1.15792	1.14599
ESG_CSR	1.58	1.17	5.00	5.00	3.6794	3.3810	.96214	.91928
ESG_CG	1.50	1.17	5.00	5.00	3.6412	3.5103	.86260	.84739
ESG	1.46	1.25	5.00	5.00	3.5148	3.1899	.87355	.84491
OC	1.11	1.00	5.00	5.00	3.5047	3.4307	.97201	.88782
OC1	1.00	1.00	5.00	5.00	3.6610	3.5241	1.16048	1.09625
OC2	1.33	1.00	5.00	5.00	4.0226	3.9218	.93642	.90610
OC3	1.00	1.00	5.00	5.00	2.8305	2.8460	1.13187	1.00310
OI	1.00	1.00	7.00	7.00	4.6695	4.0989	1.44022	1.40895

Source: Authors

The correlation coefficients of the sub-sample of the manufacturing and service sectors are shown in Table 8. Compared to the general sample, L_2 does not have a statistically significant influence in the service sector. Also, there is no statistically significant impact in the production sector with OC1 either. In both sub-samples, L_6 does not affect OI, and ECS affects OI only in the service subsample. Regarding the statistically significant influence of other strategic variables on some variables of organizational commitment and organizational innovation, all other relations are in accordance with the general pattern.

Table 8: Sector: Correlation coefficients

Sector	OC		OC1		OC2		OC3		OI	
	P	S	P	S	P	S	P	S	P	S
L_1	.632**	.648**	.659**	.686**	.505**	.519**	.535**	.503**	.458**	.340**
L_2	.303*	.148	.178	.139	.276*	.134	.371**	.119	.335**	.208*
L_3	.558**	.634**	.615**	.639**	.359**	.534**	.509**	.503**	.350**	.267**
L_4	.522**	.636**	.586**	.654**	.396**	.520**	.417**	.505**	.331*	.384**
L_5	.648**	.547**	.714**	.599**	.490**	.409**	.532**	.427**	.364**	.242**
L_6	.072	-.095	-.022	-.055	.197	-.082	.045	-.117	.201	.135
ESC	-.072	.034	-.158	.011	.065	.069	-.077	.016	.164	.245**
ESG_EP	.397**	.472**	.425**	.467**	.320*	.309**	.322*	.464**	.497**	.571**
ESG_CSR	.715**	.741**	.809**	.771**	.519**	.586**	.585**	.596**	.561**	.532**
ESG_CG	.588**	.614**	.683**	.653**	.464**	.508**	.429**	.459**	.491**	.526**
ESG	.671**	.717**	.755**	.742**	.507**	.551**	.535**	.597**	.595**	.615**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Authors

Based on the comparison of the mean values of independent sub-samples, significant statistical differences between the sub-samples in the production and service sectors were determined in ESG_EP, ESG_CSR, ESG, and OI. Statistically significant differences are shown in Table 9.

Table 9. Sector: T-Test

Sector		Group Statistics			Independent Samples Test						
		Mean	Std. Dev.	Std. Error Mean	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.
ESG_EP	P	3.0593	1.15792	.15075	.333	.565	3.222	202	.001	.57197	.17750
	S	2.4874	1.14599	.09517			3.208	106.624	.002	.57197	.17828
ESG_CSR	P	3.6794	.96214	.12526	.090	.765	2.073	202	.039	.29834	.14389
	S	3.3810	.91928	.07634			2.034	103.347	.045	.29834	.14669
ESG	P	3.5148	.87355	.11373	.026	.871	2.466	202	.015	.32489	.13176
	S	3.1899	.84491	.07017			2.431	104.463	.017	.32489	.13363
OI	P	4.6695	1.44022	.18750	.103	.749	2.606	202	.010	.57064	.21897
	S	4.0989	1.40895	.11701			2.582	105.523	.011	.57064	.22101

Source: Authors

Size

In this research, there are 73 respondents who are employed in small enterprises in Serbia and 112 respondents who are employed in medium enterprises in Serbia. In the general sample, 19 respondents were employed in large companies, but due to the small sample, they were not taken into account to consider statistically significant differences in relation to the size of the company. The results of Descriptive statistics according to Size are shown in Table 10. One of the largest differences in mean values among subsamples is observed at L_4 (S: 4.7329, M: 3.9933), and the smallest difference is observed at ESG_EP (S:2.6301, M:2.6667).

Table 10. Size: Descriptive statistics

Size Small (N=73) Medium (N=112)	Minimum		Maximum		Mean		Std. Deviation	
	S	M	S	M	S	M	S	M
L_1	1.00	1.00	7.00	7.00	4.9772	4.6071	1.61238	1.59781
L_2	1.00	1.00	7.00	7.00	4.8995	5.0804	1.48831	1.43964
L_3	1.00	1.00	7.00	7.00	4.3733	3.6406	1.96944	1.66806
L_4	1.00	1.00	7.00	7.00	4.7329	3.9933	1.83491	1.60533
L_5	1.00	1.00	7.00	7.00	4.8082	4.0692	1.82075	1.87300
L_6	1.00	1.00	7.00	7.00	4.5936	4.6964	1.56174	1.61794
ESC	1.00	1.00	7.00	7.00	3.5297	3.9122	1.56848	1.52342
ESG_EP	1.00	1.00	5.00	5.00	2.6301	2.6667	1.15745	1.19181
ESG_CSR	1.58	1.17	5.00	5.00	3.5685	3.4062	.95988	.93174
ESG_CG	1.50	1.17	5.00	5.00	3.6324	3.5223	.83609	.84348
ESG	1.46	1.25	5.00	5.00	3.3499	3.2504	.87505	.86937

OC	1.44	1.00	5.00	5.00	3.6865	3.3185	.93685	.83088
OC1	1.00	1.00	5.00	5.00	3.7808	3.4464	1.14425	1.04221
OC2	2.33	1.00	5.00	5.00	4.0822	3.8720	.84580	.90626
OC3	1.00	1.00	5.00	5.00	3.1963	2.6369	1.11227	.92193
OI	1.00	1.00	7.00	7.00	4.0228	4.3780	1.50650	1.38813

Source: Authors

Table 11 shows the correlation coefficients of the sub-samples of small and medium-sized enterprises in Serbia. In relation to the general sample, L_2 has no statistical significance in medium-sized enterprises in Serbia, while in domestic enterprises it has a statistically significant influence on the variables of organizational commitment and organizational innovation in enterprises. In addition, L_6 has no statistically significant correlations in the sub-samples, and ESC has statistically significant correlations with OI in the sub-sample of small enterprises in Serbia. Except for the mentioned relationships, all other relationships are in accordance with the general sample.

Table 11: Size: Correlation coefficients

Size	OC		OC1		OC2		OC3		OI	
	S	M	S	M	S	M	S	M	S	M
L_1	.724**	.580**	.791**	.599**	.548**	.489**	.600**	.412**	.589**	.254**
L_2	.342**	.149	.263*	.109	.327**	.123	.346**	.158	.338**	.131
L_3	.639**	.523**	.692**	.531**	.441**	.453**	.567**	.367**	.454**	.204*
L_4	.642**	.568**	.677**	.606**	.461**	.504**	.575**	.355**	.520**	.309**
L_5	.578**	.538**	.639**	.599**	.439**	.387**	.469**	.396**	.423**	.242*
L_6	.079	-.100	.013	-.064	.210	-.092	.025	-.107	.218	.091
ESC	.097	.008	.084	-.062	.124	.084	.064	.010	.414**	.126
ESG_EP	.568**	.440**	.514**	.492**	.451**	.266**	.563**	.371**	.539**	.587**
ESG_CSR	.770**	.704**	.791**	.778**	.589**	.535**	.684**	.497**	.588**	.546**
ESG_CG	.691**	.506**	.715**	.593**	.553**	.410**	.591**	.295**	.520**	.501**
ESG	.775**	.650**	.774**	.729**	.604**	.477**	.702**	.465**	.625**	.615**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Authors

Based on the comparison of the mean values of the independent sub-samples, significant statistical differences were found between the sub-samples in small and medium-sized enterprises in independent L_3, L_4, L_5, and in dependent OC, OC1 and OC3. These results confirmed H3. Statistically significant differences are shown in Table 12.

Table 12. Size: T-Test

Size		Group Statistics			Independent Samples Test						
		Mean	Std. Dev.	Std. Error Mean	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.
L_3	S	4.3733	1.96944	.23051	4.050	.046	2.717	183	.007	.73266	.26966
	M	3.6406	1.66806	.15762			2.624	135.811	.010	.73266	.27924
L_4	S	4.7329	1.83491	.21476	1.585	.210	2.893	183	.004	.73957	.25562
	M	3.9933	1.60533	.15169			2.813	139.275	.006	.73957	.26293
L_5	S	4.8082	1.82075	.21310	.366	.546	2.652	183	.009	.73902	.27868
	M	4.0692	1.87300	.17698			2.668	157.096	.008	.73902	.27701
OC	S	3.6865	.93685	.10965	3.509	.063	2.799	183	.006	.36800	.13149
	M	3.3185	.83088	.07851			2.729	140.752	.007	.36800	.13486
OC1	S	3.7808	1.14425	.13392	.596	.441	2.052	183	.042	.33439	.16298
	M	3.4464	1.04221	.09848			2.012	143.667	.046	.33439	.16623
OC3	S	3.1963	1.11227	.13018	3.597	.059	3.715	183	.000	.55944	.15060
	M	2.6369	.92193	.08711			3.572	133.550	.000	.55944	.15664

Source: Authors

DISCUSSION

In the general sample, the aspects of leadership observed in this research statistically significantly influence organizational commitment (OC), organizational identification (OC1), organizational involvement (OC2), and organizational loyalty (OC3) of employees in organizations in Serbia. An exception is Contingent punishment behavior (L_6, mean: 4.6454), because by increasing corrections, criticism, and other forms of punishment in organizations in Serbia, there is an increase in the accumulation of negative effects in almost all dimensions of organizational commitment. Authors Podsakoff et al. (Podsakoff, Todor, Grover, & Huber, 1984) state that when a leader uses contingent punishment behavior as the only form of influencing employees, it has few functional effects, but can be effective in organizations when used in conjunction with rewards. The results show that, in order to better understand such results, it is necessary to take a closer look at the impact of Contingent punishment behavior, but also Contingent reward behavior, primarily in terms of employee information, quality of communication and leader-member exchange. Thus, it would be clearer whether it is necessary for leaders in organizations in Serbia to improve the quality of feedback in order for Contingent Punishment Behavior to have an effect on employees, or if the problem is that leaders are not clear enough in identifying the desirable behavior of employees, which results in punishing employees (Podsakoff, Todor, Grover, & Huber, 1984) and can negatively affect employees' identification with the organization and their loyalty. In addition, this dimension of leadership has a statistically significant influence on organizational innovations in organizations in Serbia (OI, .164*). The results are similar with External social capital. An increase in this dimension leads to a lower organizational commitment of employees and a lower level of organizational loyalty of employees in organizations in Serbia. In addition, External social capital does not have a statistically significant influence on the organizational behavior of employees in organizations in Serbia. It is possible that the concept and purpose of

External social capital are not fully understood by employees in organizations in Serbia. When an organization allocates significant resources to building and maintaining external relationships, it might lead to an imbalance in how internal resources are distributed. External relationships often bring different perspectives, interests, and values into an organization, for which the organization needs to be ready. It is obvious that this will boost innovation, but it can also create conflicts if external values are very different from the organization's internal culture. It is possible that employees in Serbian organizations struggle to align with new strategies or initiatives driven by external stakeholders, which leads to the loss of their commitment.

In recent years, Serbia has gone through numerous changes that have had great consequences for Serbia (Nedeljković, Vukonjanski, Nikolić, Hadžić, & Šljukić, 2018). Although leaders in organizations in Serbia today work in a more stable environment than in previous years, it is possible that employees, on the one hand, block the positive influence of External social capital because, after Serbia's history, they do not understand or find it difficult to accept that connecting the organization's leaders with people of influence in society and access to resources benefit the leaders themselves, but it turns into the benefit of the employees (Chen, Zheng, Yang, & Bai, 2016). On the other hand, as research points out that External social capital can be significant for an organization, but also that the results of the relationship between External social capital and organizational performance are not consistent (Barroso-Castro, Villegas-Perinan, & Casillas-Bueno, 2015), we can conclude that neither leaders may be ready to clearly explain the benefits of External social capital to employees, which would impact this result. In addition, External social capital has a significant statistical impact on organizational innovation in organizations in Serbia.

Companies that today are moving towards sustainable business need to meet ESG requirements, as a prerequisite for competitiveness and positioning in the market. According to the results of this research, in the general sample, correlations between environmental, social, and governance (ESG), environmental performance (EGS_EP), corporate social responsibility (ESG_CSR), and corporate governance with organizational commitment (OC), organizational identification (OC1), organizational involvement (OC2), and organizational loyalty (OC3) are significantly positive. Hence, the increase of the activities that prioritize environmental issues, social issues, and corporate governance in organizations in Serbia, is accompanied by the increase of all aspects of commitment. This is the situation in all observed subsamples (Origin, Sector, Size).

In the general sample and in all observed sub-samples, External social capital (ESC) has no influence on the commitment of employees in organizations in Serbia. This result is not surprising, because the results of some research (Barroso-Castro, Villegas-Perinan, & Casillas-Bueno, 2015); (Rababah, Javed, & Malik, 2022) indicate that the degree of external social capital and the ratio of external social capital to internal social capital affect non-financial performance. In this sense, for a better understanding of the impact of external social capital, it is necessary to further investigate the results of this research, but for understanding, a research that would enable an overview of the relationship between external social capital and internal social capital would be especially important. In addition, in the general sample, external social capital significantly influences organizational innovation in organizations in Serbia. Although the T-Test results for all observed sub-samples did not show significant dif-

ferences, the correlation analysis indicates different influences of external social capital on innovation. Correlation analysis according to Origin shows that external social capital significantly influences innovations in the sub-sample domestic organizations, while in the sub-sample foreign organizations in Serbia, the relationship is not statistically significant. However, the results indicate that an increase in external social capital in foreign organizations leads to a decrease in organizational innovations. According to Sector, external social capital has a significant impact on innovation in sub-sample service organizations, while it has no significant impact on innovation in sub-sample manufacturing organizations. It is possible that these results are because service organizations are more dependent on external contacts and relationships with stakeholders compared to manufacturing companies. According to Size, external social capital has a significant impact on innovation in sub-sample small organizations, while in sub-sample medium organizations it has no significant impact on innovation.

In the general sample, all aspects of leadership, Environmental, Social, and Governance factors (ESG), and ESC have a statistically significant effect on organizational innovation. The impact of ESGs and ESC on organizational innovation can be explained by the fact that all organizations that are focused on meeting the requirements of ESGs and facing sustainability must constantly innovate within their business processes, and ESC contributes to innovation with new ideas, good contacts and constant knowledge exchanges with the external environment. According to the results, there is a significant statistical difference in innovation between the production and service sectors. The production sector is more innovative because innovation is largely focused on products and much less on services, as well as innovation in all parts of business processes.

In the general sample, all aspects of leadership significantly influence aspects of organizational commitment, except for contingent punishment behavior, which has no significant effect. Contingent punishment behavior has no significant effect in any of the observed subsamples. In addition, in the general sample, the negative influence of leadership on commitment occurs only in this aspect. Accordingly, we can conclude that the increase in fines in organizations in Serbia can lead to a decrease in commitment, to a weakening of organizational identification and loyalty. However, punishment behavior does not have a negative effect on involvement. This is the expected result because punishment is part of traditional management practices that no longer produce results. The commitment of employees in Serbia depends mostly on internal factors, and less on organizational factors, which is a significant difference compared to organizations operating in other European countries.

The influence of leadership in the subsamples is mostly consistent with the overall pattern. The exception is High performance expectations. This dimension has no significant impact on aspects of commitment in foreign companies in Serbia, in the service sector and in medium-sized enterprises. In foreign companies, expectations of high performance imply a high level of productivity and output, in which there is no room for innovation and new creative solutions. Expectations of high performance preclude time left for creativity and new ideas. It is possible that employees in Serbia are more creative under pressure and with high expectations, which is an aspect that needs further investigation. Leaders in Serbia recognize that expectations of high performance bring better results in terms of innovation, while it would be logical to

expect the opposite. In the same way, on the issue of fines, it can be seen in companies in Serbia, based on research, that fines have a positive impact on innovation. The traditional approach to management in Serbia still gives satisfactory results, as shown by the effects of High performance expectations and Contingent punishment behavior on Organizational innovation, which means that employees, both under pressure and in case of punishment, have the need to innovate.

When we look at the differences between the groups, there is a significant difference for Supportive leader behavior, Intellectual stimulation and Contingent reward behavior in small and medium-sized organizations. It is possible that the dynamics of interaction in small companies, both with leaders and between employees, is much more intense, because employees come into contact with their superiors more often, so with an adequate leadership style, they are also encouraged more often, and since the collective is smaller, the results that individuals achieve are easier to see. They achieve, and thus awards, which is already not possible in medium-sized organizations. The difference between groups in small and medium-sized enterprises also occurs in Organizational commitment, Organizational identification and Organizational loyalty. The previous explanation can also be applied to commitment. In small organizations, frequent contacts with the leader, as well as relationships between employees, influence employees to identify with the organization. Also, loyalty in small organizations is often associated with loyalty to people (leader and colleagues), which is less frequently found in medium-sized organizations compared to small organizations.

Using the regression method, in this research we examined the contribution of all independent variables (leadership variables, ESGs and ESC) to the total R-square in the regression with commitment variables and innovation as a dependent variable. The results show that 71% of the variation in identification (OC1) can be predicted by ESGs and ESC leadership. The most significant predictors of Organizational identification are independent Core transformational leader behavior (L_1, β=0.246), Contingent reward behavior (L_5, β=0.154) and Corporate social responsibility (ESG_CSR, β=0.530). We can conclude that leaders in companies in Serbia, among other things, should give feedback to employees and praise employees when they achieve good results. Also, they should carry out activities related to the development of the organization's vision and put the organization's interest above their personal interest, influence employees to accept the organization's vision and model of behavior, thereby contributing to the creation of employees who are loyal to the organization.

In predicting Organizational loyalty (OC3), High performance expectations (L_2, β=0.233), Contingent punishment behavior (L_6, β=-1.66) and Corporate social responsibility (ESG_CSR, β=0.482) have a significant influence. The regression model predicts 44% of the variation in loyalty. We can conclude that loyalty is conditioned to a certain extent by the application of punishments. On the other hand, it is conditioned by clearly set goals by the leader, whereby the leader insists on achieving the best results.

The regression model can predict 40% of Organizational involvement (OC2), and the most significant predictor is Corporate social responsibility (ESG_CSR, β=0.346), as is the case with Organizational identification (OC1) and Organizational loyalty (OC3). We can conclude that employees in organizations in Serbia feel more committed to organizations that enable employees to improve their knowledge and

skills, organizations that work to improve working conditions, paying special attention to the needs of employees, and behave responsibly towards customers and society.

In predicting Organizational innovation (OI), ESGs (Environmental performance, ESG_EP, β=0.281; Corporate social responsibility, ESG_CSR, β=0.226; Corporate governance, ESG_CG, β=0.181) and External social capital (ESC) have a statistically significant influence, β=0.195). The regression model predicts 46% of the variation in organizational innovation. The research results indicate that: In the context of Serbian enterprises, the influence of External Social Capital (ESC) in promoting innovation lies in the ability of these organizations to leverage external knowledge and engage in intense knowledge transfer for creative problem-solving and generating new solutions (similar to research 2.6). These research findings support other studies stating that the External Social Capital improves knowledge sharing, which enhances innovation capabilities in organizations by providing new perspectives and access to expertise beyond the organization's internal capacity.

The results of this study also show that Environmental Protection (EP) stands out as the strongest predictor of organizational innovation, explaining 28% of the variance in innovation outcomes. This significant impact suggests that companies that prioritize environmental sustainability are more likely to engage in innovative practices. This can be attributed to several factors. Firstly, the increasing pressure from regulatory bodies and consumers to adopt environmentally friendly practices forces organizations to innovate in order to reduce their environmental footprint. This often results in the development of new, greener technologies, processes, and products. Secondly, organizations that emphasize environmental sustainability also foster a culture of continuous improvement and experimentation, which is fundamental to innovation. In this context, environmental protection becomes a catalyst for innovation, as companies must continuously adapt their operations to achieve more sustainable outcomes.

According to this study's results, both Corporate social responsibility (ESG_CSR) and Corporate Governance (ESG_CG) also play significant roles as predictors of organizational innovation, although their effects are less impactful compared to Environmental performance (ESG_EP). Serbian organizations investing in CSR experience greater creativity leading to the rise in innovation. At the same time, strong corporate governance structures ensure accountability, transparency, and alignment of interests between shareholders and management, promoting strategic decision-making that can lead to innovation. Well-governed companies are more likely to invest in R&D and explore innovative solutions because of their long-term orientation and focus on sustainability.

CONCLUSION

The findings of this study confirm that leadership significantly impacts both organizational commitment and organizational innovation in Serbian enterprises, with transformational leadership playing a particularly crucial role. These results align with existing literature findings, linking leadership to these organizational elements. However, research results show remaining room for improvement, especially in the domain of supportive leader behavior (L_3, 3.95). Leaders in Serbia should focus on enhancing their leadership capacities to further promote organizational commitment and innovation.

Significant differences were observed between domestic and foreign organizations in terms of organizational commitment and loyalty. Employees in domestic organizations exhibit higher levels of both, most likely due to a stronger personal attachment to these enterprises and leadership styles that, while sometimes traditional, give results with the local workforce. This suggests that foreign organizations operating in Serbia should invest more effort in adapting their practices to align with the national culture, which may foster greater employee commitment and loyalty.

Environmental, Social, and Governance (ESG) factors, particularly Environmental Performance and Corporate Social Responsibility emerged as key drivers of innovation in Serbian organizations. The production sector, driven by regulatory pressures, tends to be more ESG-oriented, leading to higher innovative outputs. These findings highlight the importance for managers to recognize how adopting ESG requirements can foster innovation within their organizations.

For small and medium enterprises (SMEs), the study reveals that stronger internal interactions, communication, and leader-employee relationships are characteristic of smaller enterprises. As companies grow, maintaining these internal dynamics is crucial for sustaining organizational commitment and loyalty. Managers should carefully manage organizational growth to avoid diminishing these critical internal factors.

The research results also point to the importance of good governance practices in driving innovation. In Serbian enterprises, good governance practices likely contribute to innovation by ensuring that resources are allocated effectively and that there is a clear strategy for growth and competitive advantage.

Finally, the impact of External Social Capital on organizational innovation emphasizes the value of external partnerships and knowledge sharing. Strengthening external networks can significantly enhance innovative capabilities in Serbian enterprises. Overall, the results suggest that a balanced focus on leadership, ESG factors, and External Social Capital can effectively foster innovation, offering valuable insights for organizations in Serbia aiming to enhance their innovation potential.

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ORIGINALNI NAUČNI RAD / ORIGINAL SCIENTIFIC PAPER

THE PROFESSIONAL DEVELOPMENT OF UNIVERSITY TEACHERS IN CURRICULUM INTERNATIONALISATION: INSIGHTS FROM SLOVENIA AND BOSNIA AND HERZEGOVINA

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Abstract: *This article examines the role of professional development in enabling academic staff to effectively internationalise university curriculum, focusing on higher education institutions in Slovenia and Bosnia and Herzegovina. The primary objective is to analyse how pedagogical training courses enhance the ability of university teachers to integrate global and intercultural dimensions into teaching practices. Employing a qualitative methodology, the study uses semi-structured interviews and responses and content analysis to gather and interpret insights from 22 university teachers across various academic disciplines. Findings highlight the significance of professional development programs in fostering teachers' global competencies, enhancing intercultural awareness, and improving teaching methodologies. Participants reported increased self-confidence, the incorporation of international elements into syllabi, and refined assessment practices. Key challenges identified include institutional resistance to change, insufficient resources, and cultural and linguistic barriers. Despite these obstacles, the study underscores the transformative impact of internationalisation-focused trainings on both university teachers' pedagogical approaches and students' preparedness for a globalised world. The article provides valuable insights for policymakers and higher education institutions seeking to develop inclusive, internationally oriented curriculum. It emphasizes the necessity of cohesive national and institutional strategies to overcome existing challenges and advance global competencies in higher education.*

Keywords: *Professional Development, University Teachers, Curriculum Internationalisation, Strategic approach, Training Courses*

JEL classification: *I23, M5*

INTRODUCTION

Developing staff is essential for any organisation's growth and success. It encompasses various activities aimed at enhancing employees' skills, knowledge, and abilities. For higher education academics, staff development often focuses on professional pedagogical development and training, which includes adopting the latest teaching methodologies, integrating digital technologies in the classroom, designing innovative curriculum, and incorporating contemporary and relevant topics into course content. In recent decades, the academic workforce has become increasingly diverse due to the expansion of the higher education sector. This expansion is characterised by mass enrolment, the impacts of internationalisation and globalisation, a broader range of academic disciplines, new management approaches, technological advances, and other contemporary trends, policies, and strategies that have reshaped the higher education landscape (Sursock, 2020; Hudzik, 2011; de Haan, 2014; Marginson & van der Wende, 2007).

To meet current labour market demands, a globally interconnected environment, and modern educational approaches, curriculum internationalisation is vital for preparing future graduates with intercultural competences, international perspectives, and global awareness. Thus, the professional development of academic staff is crucial for effectively enhancing their teaching skills to implement an internationalised curriculum (Aškerc Zadravec, 2021; Aškerc Zadravec & Kočar, 2024; Green & Whitsed, 2015; Leask, 2015; Carroll, 2015). As educational institutions aim to equip students to thrive in a globalised world and become global citizens, there is a growing emphasis on strengthening the global competencies of educators and providing them with pedagogical approaches that support the delivery of an internationalised curriculum.

Through targeted pedagogical training, supported by international, national, and institutional policies and strategies, higher education institutions can address the challenges associated with curriculum internationalisation and create a more inclusive, globally-oriented educational environment. It is crucial that these policies and strategies allocate sufficient resources for the professional pedagogical development of academics (Beelen & Jones, 2015; Kirk, Newstead, Gann & Rounsaville, 2018; ElKaleh, 2021) and cultivate a supportive teaching-learning environment from technological, content, financial, and human resources perspectives. This enables educators to experiment with and incorporate international perspectives into their teaching practices, which involves embedding global perspectives in learning outcomes, learning-teaching activities, and assessment practices, with a focus on fostering long-term impact and developing students' intercultural and global competencies in alignment with a constructively aligned internationalised curriculum (Aškerc Zadravec & Kočar, 2024). To implement this approach effectively, academics must be suitably supported and trained.

This article aims to highlight the significance of academic staff's professional development in supporting the internationalisation of the curriculum. The authors first present a theoretical overview of professional staff development within higher education, with a focus on pedagogical development tailored to equip academics for implementing internationalised university teaching. Subsequently, the article explores academic perspectives on the importance of professional pedagogical development and training in curriculum internationalisation, drawing on trends and practices from Slovenia and Bosnia and Herzegovina.

PROFESSIONAL DEVELOPMENT OF ACADEMIC STAFF IN INTERNATIONAL HIGHER EDUCATION LANDSCAPE: A GENERAL BACKGROUND

Higher education institutions are facing challenges posed by rapidly evolving fields of academic knowledge, driven by advanced research, technological progress, and the demands of a globally connected world. Consequently, there is a significant need for ongoing professional development for academic staff to maintain and enhance the quality of education and research, while effectively preparing students for life and work in an ever-changing, globalised world (Fernandes, Araújo, Miguel & Abelha, 2023; Helms & Brajkovic, 2020; Sursock, 2020). The importance of staff development in higher education was emphasised in 2007 by the Council of Europe in *Recommendation CM/Rec(2007)6*, recognising it as a public responsibility vital for improving education and research quality and fostering innovation within institutions (Council of Europe, 2007, p. 5).

In 2013, the European Commission published recommendations on the pedagogical development of academics, under the auspices of *EU High-Level Group: Train the Professors to Teach* (European Commission, 2013). Additionally, the European Commission's 2013 communication European Higher Education in the World highlights the importance of professional staff development in enhancing teaching and learning quality in higher education. It stresses that continuous professional development for academic staff is critical for fostering innovation in teaching and research and for integrating international and intercultural dimensions into the curriculum. The communication advocates for targeted training programmes that support academic staff in acquiring the necessary skills and knowledge to participate in international collaborations, emphasising the need for supportive frameworks and training that improve pedagogical skills, thereby preparing educators to meet the demands of a globalised educational landscape (European Commission, 2013, p. 12, 14).

Professional development is essential in higher education for maintaining academic excellence and ensuring that institutions can adapt to shifting educational demands. The successful internationalisation of higher education institutions depends significantly on the active involvement and commitment of faculty. Faculty members play a central role in this process as they are responsible for integrating international perspectives into their teaching, research, and service activities. However, as stated by Stohl (2007, p. 360), challenges such as limited institutional support, insufficient resources, and resistance to change can hinder faculty engagement in internationalisation initiatives.

Effective professional development programmes help academic staff to improve their teaching practices, stay current with the latest pedagogical trends, and incorporate innovative approaches into their classrooms (Fernandes, Araújo, Miguel & Abelha, 2023). The latter includes integrating international perspectives into the curriculum, which is essential for preparing students for a globalised world. In this context, cross-border online professional development provides opportunities for enhanced pedagogical practices, where educators from diverse cultural backgrounds report professional growth and improvement as a result of international collaboration within online development programmes (Rienties, Divjak, Eichhorn, et al., 2023). Additionally, according to Fernandes, Araújo, and Miguel (2023), academics emphasise the value of adapting pedagogical training programmes to various cultural contexts, enhancing their effectiveness and relevance on a global scale. International collaboration and ex-

change within professional learning communities bring diverse perspectives, enriching the professional development experiences of educators (Su, Zou & Wang, 2023).

In this context, the concepts of *internationalisation at home* and *internationalisation of the curriculum* are essential. Internationalisation at home is an inclusive approach that incorporates "international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments" (Beelen & Jones, 2015, p. 69). Unlike traditional forms of internationalisation, often focused on student mobility, internationalisation at home seeks to provide global learning opportunities for all students, regardless of their ability to travel abroad. This approach requires a comprehensive strategy involving curriculum design, teaching methods, and institutional policies that support the development of intercultural competencies. A related concept is the internationalisation of the curriculum, which, according to Leask, refers to "the incorporation of international, intercultural and/or global dimensions into the content of the curriculum as well as the learning outcomes, assessment tasks, teaching methods and support services of a programme of study" (Leask, 2015, p. 9). The result of both concepts is an *internationalised curriculum* which "helps to distinguish between the means and the end" (Leask, 2015, p. 9).

Successfully implementing an internationalised curriculum requires targeted professional staff development in higher education, focusing on contemporary educational approaches, where it is essential to equip educators with the skills and knowledge necessary to integrate global perspectives into their teaching practices and foster an inclusive, globally aware educational environment.

PERSPECTIVES FROM SLOVENIA AND BOSNIA AND HERZEGOVINA ON PROFESSIONAL STAFF DEVELOPMENT IN HIGHER EDUCATION INTERNATIONALISATION

The Higher Education System in Slovenia with a Focus on Internationalisation

National policies, guidelines, standards, and strategies in higher education internationalisation, which recognise the professional development of teaching staff as essential, are crucial for incorporating international and intercultural elements into academic programmes, following high quality teaching standards. These policies also promote the use of new technologies and innovative practices in human resource development within higher education (e.g., Moshtari & Safarpour, 2023; Alexiadou & Rönnberg, 2023; Aškerc Zadravec & Kočar, 2024).

In Slovenia, the *Minimum Standards for Appointment to Titles of Higher Education Teachers, Scientific Staff, and Higher Education Staff at Higher Education Institutions* (Official Gazette of the Republic of Slovenia, No. 95/10, last amended version No. 163/21, Article 23) emphasise the importance of assessing teaching competencies. Among other criteria, it proposes evidence-based teacher training through general teacher-training programmes or institution-specific programmes. Furthermore, *inter alia* associate and full professors must demonstrate active engagement as researchers or educators at a high-quality foreign university or research institution continuously for at least three months (Articles 25 and 28), an important component in Slovene national standards supporting the internationalisation of university teaching. In 2024, new *Minimum Standards* (Official Gazette of the Republic of Slovenia, No. 44/24) were adopted, set to take effect in 2025. These new standards require associate

and full professors to demonstrate pedagogical achievements with an international dimension, which may include participation in international training at least five times over the past three years. These activities encompass internationalisation of the teaching process, development of international study programmes, collaboration in joint study programmes, teaching foreign students in a foreign language, or involvement in authorship and management of European and international educational projects. Each higher education institution must align its internal criteria for title appointments with these national minimum standards. Although institutional criteria may be more rigorous than the national minimum, they cannot be less stringent.

In 2022, Slovenia adopted the *Resolution on the National Higher Education Programme 2030* (ReNPVŠ2023; Official Gazette of the Republic of Slovenia, No. 49/22), mandating that qualitative and quantitative indicators of teaching performance hold comparable weight alongside scientific excellence indicators in faculty appointment and promotion procedures. In the context of internationalisation, the National Programme specifies that the strategic internationalisation of curricula will be implemented through intensive pedagogical collaboration. Following this resolution, the *Strategy for the Internationalisation of Higher Education in Slovenia until 2030* (Ministry of Higher Education, Science and Innovation, 2023) was adopted, which underscores the importance of comprehensive professional training for academics to encourage curriculum internationalisation in higher education.

The Higher Education System in Bosnia and Herzegovina with a Focus on Internationalisation

Bosnia and Herzegovina's higher education system operates within a complex and fragmented framework, reflecting the country's unique post-conflict identity and decentralised governance structure. Unlike many European countries, Bosnia and Herzegovina lacks specific national regulations or guidelines for higher education internationalisation. This absence of a unified national strategy has resulted in varied approaches to internationalisation, primarily driven by the autonomy of individual institutions (Markovic, Bokonjic, & De Lepeleer, 2021). Without national directives, universities in Bosnia and Herzegovina have independently developed their own strategies for engaging with the global academic community, influenced by each institution's specific resources, capacities, and priorities. Consequently, internationalisation efforts vary significantly, with some universities more actively pursuing international partnerships and academic mobility than others. The higher education system also reflects the country's complex socio-political landscape, mirroring societal divisions that have characterised Bosnia and Herzegovina since the end of the 1990s conflict (Sabic-El-Rayess, 2009). These divisions are evident in the multiple identities and varied educational policies that complicate efforts to create a cohesive approach to internationalisation

In this context, Bosnia and Herzegovina has established regulations to support the ongoing professional development of academic staff in pedagogical skills. The 1996 *UNESCO Report on higher education in Bosnia and Herzegovina: historical development, present state, and needs assessment* (Srebren & Bakarsic, 1996) analyses the historical development and current challenges of higher education in Bosnia and Herzegovina, emphasizing the critical need for professional development among academic staff to rebuild and enhance the education system post-conflict.

Within Bosnia and Herzegovina, specifically in the entity of Republic of Srpska, the standards for appointing higher education teachers and staff reflect the country's layered governance structure. Unlike Slovenia, which has a unified national framework, Bosnia and Herzegovina's educational standards are influenced by both state-level and entity-level regulations, resulting in a diverse and sometimes fragmented approach to higher education policy. At the state level, the *Framework Law on Higher Education in Bosnia and Herzegovina* (Official Gazette of Bosnia and Herzegovina, No. 59/07) establishes general principles for higher education, including academic staff appointments. However, detailed criteria for academic titles are largely delegated to the entities – the Federation of Bosnia and Herzegovina and Republic of Srpska – and to cantonal governments within the Federation. This decentralised approach results in varied standards across the country.

The process of academic appointment in Bosnia and Herzegovina typically prioritises both teaching competence and research activity. The *Guide to Assessing the Quality of Internationalisation*, issued by the Agency for Development of Higher Education and Quality Assurance of Bosnia and Herzegovina (2018), underscores the significance of continuous professional development, teaching experience, and research output as key criteria for such appointments, with emphasis on international dimensions. These guidelines encourage institutions to integrate evidence-based teacher training and international collaboration into their evaluation processes. While the guide highlights the importance of curriculum internationalisation, it does not currently provide detailed or specific recommendations for achieving this within university curricula.

In Republika Srpska, the *Law on Higher Education* (Official Gazette of Republika Srpska, No. 67/20) outlines specific criteria for the appointment of higher education staff. The evaluation of candidates for academic titles includes an assessment of their teaching competencies, scholarly work, and professional development. Importantly, in the context of internationalisation, the law requires that associate and full professors demonstrate active engagement in international research or teaching activities, such as participation in international academic projects, publications in internationally recognised journals, and attendance at international conferences or training programmes.

Furthermore, the *Minimum Standards for Appointment to Titles of Higher Education Teachers and Scientific Staff in Republic of Srpska* are defined in Official Gazette of Republic of Srpska (No. 69/36) since 2023 and they underscore the importance of international exposure and collaboration. To qualify as an associate professor, a candidate must fulfil several conditions. These include serving at least one term as an assistant professor, publishing at least five scientific papers in their field—two of which must be in journals or conferences of international significance—and having authored a scientific monograph or university textbook. Candidates must demonstrate teaching abilities through positive evaluations and have participated as a mentor or committee member for master's or doctoral defences. Additionally, they must meet supplementary requirements, such as contributing to scientific, artistic, or professional projects, or participating in academic and community initiatives like drafting strategic acts or promoting science. Active collaboration with other institutions, including international academic exchanges, joint study programs, or plenary lectures at international conferences, is also required, including achieved international cooperation with other universities and relevant institutions in the field of higher education, culture and art.

Both Bosnia and Herzegovina and the Republic of Srpska are progressively advancing their standards for higher education staff appointments, placing increasing emphasis on international collaboration and continuous professional development. Although the decentralised nature of Bosnia and Herzegovina's education system leads to varied approaches across the country, a common trend is emerging: a growing recognition of the importance of internationalisation and pedagogical excellence in higher education; this includes a gradual shift towards the development of an internationalised university curriculum.

THE SCOPE OF THE STUDY

Building on the theoretical background that highlights the significance of professional pedagogical staff development in higher education—supported by various scholarly contributions and policy documents advocating for the integration of internationalisation in the curriculum—this article seeks to present the perspectives of academics from Slovenia and Bosnia and Herzegovina. Specifically, it explores their opportunities for professional development in curriculum internationalisation and its impact on their pedagogical performance and overall professional growth.

Due to the limited sample size of participants responding to open-ended questions, a comparative analysis between the two countries is not included, as no relevant or comparable conclusions could be drawn. Instead, the article focuses on providing a general overview of the perceptions of the academics involved in the study concerning selected parameters.

In this context, the following research question is addressed:

What are university teachers' views on the importance of their professional development in pedagogical work with a focus on internationalisation, and what impact do they observe in this context?

METHODOLOGY

Process of Data Collection

This research employed a semi-structured interview format with open-ended questions on predetermined topics, conducted in a combination of oral and written formats. This flexible approach allowed for the modification of question sequences or the addition of new questions as needed. In some cases, questions were adapted to align with the specific national and institutional contexts of the respondents and the focus of the addressed topic. The collected data were analysed using content analysis methods, following the approach of Cohen, Manion, and Morrison (2007).

The initial round of interviews was conducted in 2020, prior to and during the announcement of the COVID-19 pandemic. To deepen insights into the research topic, additional responses were collected in 2024. Data collection was conducted both in person and/or online, depending on participants' availability and time constraints, utilising a combination of oral and written formats.

Characteristics of the Respondents and the Process of Data Collection

Participants were selected deliberately, focusing on individuals who are at least somewhat familiar with the internationalisation of university teaching or actively involved in internationalisation initiatives at their respective universities. In total, 22 university teachers from Slovenia and Bosnia and Herzegovina participated in the study.

The participants represented the following academic disciplines: Political Science, Public Relations, Management, Entrepreneurship and Marketing, Traffic and Transport, Health Sciences, Geography, Education, Business Mathematics, Technology, Mechanical Engineering, Informatics, and Foreign Languages. They held academic titles including Full Professor, Associate Professor, Assistant Professor, Language Instructor, Senior Lecturer, Lecturer, and Assistant. However, the impact of academic discipline or academic title on individual responses is not analysed in this article and, consequently, is not included in further evaluation.

In the study, there was the option to either have the responses recorded for verbatim transcription or to provide open-ended written responses to the questions. All transcripts and responses are securely stored for long-term preservation. Anonymity was prioritised by designing the questions to ensure complete confidentiality, in line with research ethics (Cohen, Manion & Morrison, 2007).

Qualitative Analysis of the Responses

For this article, we performed a qualitative analysis of data obtained from the interviews/open-ended responses using text analysis and tentative theory formation, following the methodology of Glaser and Strauss (as described in Kordeš & Smrdu, 2015, p. 53). The coding process involved categorising units/responses of qualitative material, with codes serving as markers to identify the meanings of words, phrases, and sentences.

The use of codes allowed us to merge semantically related sections/responses efficiently. We began with concrete summaries of selected material units (such as terms, concepts, or lower-order categories) and gradually moved towards higher levels of generality and abstraction (higher-order categories). During the coding analysis, we systematically broke down and synthesised data from participants' responses. This approach ensured that our analysis was data-driven, allowing higher-level categories and theoretical formulations to emerge organically from the responses.

RESULTS

This section presents the results, following the steps outlined in the coding process used to analyse the transcripts. Although participants' responses were collected in Slovene, Serbian, and English language, they were all carefully proofread or translated into English to preserve the original meaning of the responses. The analysis in this section is structured in English, providing high-level categories with examples. Reasonable units of text, in the form of sentences or short paragraphs, were identified that directly relate to the research question. Subsequently, related concepts were grouped into higher-order categories, with comparisons made to identify common themes that address the research questions. Categories and subcategories were organised hierarchically to reflect their relationships.

We acknowledge that the groupings could be further refined or developed with greater precision. Due to the complexity of the open-ended responses, the statements could be organised in alternative formats or with a more detailed structure. However, for the purposes of this article and to address the research question, we believe that the structure presented in this chapter is sufficiently detailed to provide clear answers to the question addressed.

Relevance, Identified Drivers, and Challenges

This section presents academics' perspectives on professional development in the internationalisation of university pedagogical work, focusing on the relevance attributed to professional development, as well as the identified drivers and challenges in implementing internationalised university teaching. Initially, first-order responses were identified that directly relate to the addressed topic, and subsequently, related concepts were grouped into higher-order categories, as presented in Table 1, which includes key examples and excerpts from respondents' responses. However, only responses that directly support the research problem and focus on the relevance of professional development in this field were included in the analysis.

Table 1. Categories with Statements – Relevance, Drivers, and Challenges for Professional Development in the Field of Internationalisation of University Pedagogical Work

Higher-Order Categories	First-Order Categories (Codes)	Respondents' Statements
General Importance and Relevance	Awareness and Importance	• "I gained broader perspectives in this field; I am more aware of why [internationalisation] is important /.../" (Health Sciences). • "This [internationalisation] is an extremely important element of the [pedagogical] process." (Foreign Language). • "[Professional development] is effective; academics are more aware of /.../ of [curriculum internationalisation]" (Health Sciences). • "[Curriculum internationalisation] is useful; training made it easier to understand [its importance]." (Mechanical Engineering). • "[This training] made me more integrated into the European and beyond European space." (Health Sciences). • "[Training on curriculum internationalisation] is important because we are connected with the international world." (Health Sciences).
	Value and Necessity	• "These types of trainings are definitely useful." (Management). • "This [curriculum internationalisation] is crucial for good and up-to-date delivery of the subject." (Management). • "/.../ I'm sure it's a useful upgrade." (Informatics). • "For example, the last training I attended was from Prof. [...]; it was a very good lecture on student-centered teaching and internationalisation." (Health Sciences). • "[Internationalisation] significantly enhances education /.../, though its effectiveness depends on application and support." (Technology). • "I think that's good [important]." (Traffic and Transport). • "This kind of training is definitely useful." (Public Relations).
	Complexity and Trends	• "[It is] important to understand the complexity [of teaching] from perspectives beyond only the scientific." (Informatics). • "/.../ to make education more inclusive and relevant." (Management). • "/.../ more training is needed for any changes to occur." (Management). • "[Curriculum internationalisation] is necessary to meet the needs of complex modern times." (Management).

Drivers and Support Mechanisms for Implementation Mechanisms for Implementation	Financial, Technical, and Strategic Support	• "Support mechanisms like financial aid, Erasmus mobilities, and training courses may be offered by universities /…/. Their effectiveness depends on accessibility, relevance, and how well they are integrated into institutional practices." (Management). • "/.../ our university offers mechanisms such as Erasmus mobility programs to support the integration of international elements into the curriculum /…/, and these are effective /…/; they provide essential financial support and opportunities for global exposure." (Technology). • "Each of these [international] activities could be conducted to a greater extent, but when it comes to [financial] support, we are offered significant support." (Mechanical Engineering). • "[This is] recorded in the strategic documents of the institution; we are provided with such training /.../ and encouraged to include these contents in our subjects /.../." (Education). • "/.../ drivers can be the growing global education demands and support from universities and government." (Technology).
	Encouragement for Internationalisation	• "[Our institution] encourages the inclusion of international, global, and intercultural aspects in the study process." (Mechanical Engineering). • "University encourages Erasmus mobilities and international projects; we had training on internationalisation of the curriculum." (Health Sciences). • "It is good because our university and country support internationalisation activities." (Health Sciences).
Challenges and Obstacles in Implementation	ICT, Regulatory, and Legal Barriers	• "We have to pay attention to certain [regulatory, legal] restrictions, because in certain countries they are much further along, compared with Slovenia." (Health Sciences). • "Barriers /.../ may include lack of resources and resistance to change." (Technology). • "ICT support is not as we need /.../, constrained by limited financial resources." (Mechanical Engineering).
	Resistance to Change and Institutional Support	• "Challenges /.../ include resistance to change, lack of resources, and insufficient training, which hinder effective integration." (Management). • "There is a natural resistance to new approaches and innovations that need to be introduced to increase quality." (Informatics). • "/.../ varying levels of institutional support may pose significant obstacles." (Management).
	Language and Cultural Challenges	• An obstacle can be insufficient knowledge of a foreign language." (Traffic and Transport). • "Cultural differences and language barriers /.../ may pose significant obstacles." (Management). • "/.../ we have home students but almost no international students." (Health Sciences).

Source: Author's work

Impact on Professional, Pedagogical, and Personal Development

This chapter presents academics' perceptions of the impact of professional development in the field of internationalisation of university teaching, focusing on its effects on their professional and personal development, as well as on their pedagogical

work. Respondents' answers were initially grouped into first-order level and subsequently organised into higher-order categories, as shown in Table 2. Only responses directly supporting the research problem and specifically addressing the impact on the professional, pedagogical, and personal development of university teachers were included in the analysis.

Table 2. Categories with Statements – Perceived Impact

Higher-Order Categories	First-Order Categories (Codes)	Respondents' Statements
Professional Development	General Perception/ Effectiveness	• "This [training] has greatly influenced my teaching work." (Education) • "Yes, /.../ professional growth, /.../ expertise." (Education) • "But even through training, where it was not called internationalisation, if I look closely, I gained a lot from these experiences." (Foreign Language) • "I was always attracted to this, and I learned a lot." (Foreign Language) • "This type of training definitely affects my professional growth, as it also stimulates my desire for new knowledge and additional research work /.../." (Management) • "/.../ I have experienced significant /.../ professional development." (Technology)
	Pedagogical Improvement	• "Participation /.../ improved my ability to integrate diverse content into teaching." (Management) • "Yes, /.../ I get confirmation of the correctness of my own [pedagogical] approach, or /.../ I see its shortcomings." (Public Relations) • "/.../ [It] affected my views on why the international dimension in study is important /.../." (Health Sciences) • "This growth has enriched my teaching practices and deepened my engagement with students from varied backgrounds." (Management)
Impact on Academics' Personal and Intercultural Development	Cultural Awareness, Sensitivity, and Global Perspectives	• "/.../ helping teachers better understand cultural differences /.../." (Technology) • "These courses equip educators /.../ for diverse cultural contexts, fostering collaboration, equity, and engagement." (Management) • "Participation /…/ has enhanced my cultural awareness and broadened my global perspectives /…/." (Management) • "Interesting and useful are personal experiences that allow you to get to know /.../ different cultural environments /.../." (Geography) • "I have /.../ enhanced global perspectives /…/." (Management)
	Broader Perspective and Openness to Action	• "As a result of participating /…/ I have experienced significant personal /…/ development /…/." (Management) • "Yes, personally, I have become more knowledgeable in this area, open, tolerant. /…/ it has influenced my greater /…/ awareness, self-confidence, etc." (Education) • "/…/ I think differently now and react more appropriately when action is required." (Geography) • "Yes, I have a different, broader view of this issue, [perspective]." (Informatics) • "Greater breadth, [perspective]." (Entrepreneurship and Marketing)
	Increased Self-Confidence and Awareness	• "/.../ because of this, we are becoming more self-confident, well-informed, and I have many /.../ personal contacts abroad." (Education) • "Yes. Greater self-confidence." (Entrepreneurship and Marketing)

Influence of Internationalization on Pedagogy	Incorporation and Application of International/ European Elements	• "The adoption of European elements /…/ improves teaching." (Traffic and Transport) • "I included some international examples in lessons /…/." (Health Sciences) • "/.../ teaching is improved by applying European standards." (Traffic and Transport) • "Especially in health, we have different international cases and situations in study and practice, and later in work." (Health Sciences) • "I try to include international elements in my professional practice and studies." (Health Sciences) • "I added case studies from abroad." (Management) • "[I include] international examples of materials, written and video content /.../." (Management)
	Broader Perspectives and Greater Output	• "/.../ where things are not completely standardised, we can consider them from different perspectives /.../. I see [internationalisation] as an extension or addition to that basic [study process] /.../." (Health Sciences) • "More effective teaching and greater pedagogical output." (Entrepreneurship and Marketing)
	Diverse and Improved Teaching Methods	• "I /.../ adopted diverse teaching practices to better engage students in a global context." (Management) • "I have incorporated changes into my teaching practice, including /…/ diverse teaching and learning strategies." (Technology) • "/.../ improved teaching methods /.../." (Technology) • "/.../ different learning-teaching practices." (Traffic and Transport) • "As a result /…/ I have experienced /…/ improved teaching methodologies." (Technology) • "[I use] activities for /.../ home and Erasmus students in my work /…/." (Management) • "/.../ more communication and opinion exchange activities with students during classes." (Informatics)
Impact on Curriculum Documentation	General Inclusion of International Elements in Syllabuses	• "I /.../ have /.../ enhanced [syllabus] with international elements /.../." (Technology) • "I include some components of internationalisation at home." (Geography) • "/.../ formally [I should] /.../ leave some mark on paper in terms of [internationalisation] in the curriculum [and not only informally in practice]." (Health Sciences)
	Updated Learning Outcomes, Content, Literature, and Assessment	• "I updated syllabuses by enhancing learning outcomes and refining assessments to include more global perspectives." (Management) • "I included some international elements, put additional international expressions and literature in the syllabus, and I try to implement it." (Health Sciences) • "/.../ here and there I supplemented the goals and learning outcomes of the course, the content and literature, examples, and to some extent the assessment /.../." (Education) • "I incorporated international elements into content." (Management) • "I included /.../ concrete international documents, foreign literature /.../." (Health Sciences) • "I am currently working on incorporating changes into the curriculum, such as improved learning outcomes and enhanced assessment methods." (Technology) • "I plan to include these contents in my pedagogical work." (Education)

Source: Author's work

CONCLUSION

This article underscores the critical role of professional development for academics in fostering internationalised university teaching and highlights its benefits, challenges, practical applications, and impacts within the educational landscapes of Bosnia and Herzegovina, part of the Western Balkans, and Slovenia, a Central European country formerly part of Yugoslavia. Professional development in curriculum internationalisation is essential as higher education institutions increasingly strive to prepare students for a globalised world.

The findings emphasise that, while professional development initiatives are essential for fostering international and intercultural perspectives in university teaching, inconsistencies in policy implementation and the absence of cohesive national frameworks can significantly limit their effectiveness. In Bosnia and Herzegovina, for example, the fragmented approach to higher education results in variable policies across regions, creating an inconsistent experience for academic staff. Research by Markovic, Bokonjic, and De Lepeleer (2021) highlights the challenges posed by this lack of regulatory cohesion, which often leaves institutions to navigate internationalisation efforts independently. Slovenia's approach is more structured, with defined national guidelines and a unified strategy that promotes internationalisation as a national priority—particularly with the adopted *Strategy for the Internationalisation of Higher Education in Slovenia*. However, challenges remain in effectively implementing internationalisation within university teaching practices. In this context, the article highlights the significance of structured, purpose-driven professional development for academics, not only in enhancing individual competencies but also in fostering an educational environment that supports cross-cultural understanding, development of intercultural competence, and incorporation of international and global perspectives. It is suggested that aligning institutional policies with national and international standards is crucial to maximise the potential of professional development initiatives in the context of curriculum internationalisation.

While the article presents responses from two different countries, it does not distinguish between respondents based on country of origin, academic discipline, or academic title. This represents a limitation of the study, but at the same time, no significant differences were observed in this context. Another notable limitation is the small and non-representative sample size, which restricts the generalisability of the results and limits the depth of comparative analysis. Future studies would benefit from a larger, more diverse sample that includes comparative perspectives across countries, allowing for a more comprehensive understanding of the issue. This approach would also support a deeper exploration of regional perceptions across the Balkans, in addition to Bosnia and Herzegovina and Slovenia, to assess the role of professional development in higher education internationalisation, especially in regions facing unique socio-political challenges like the Western Balkans.

The article highlights the importance of the individual educator's role in advancing internationalisation, even within constrained policy environments. Academic staff frequently go beyond formal requirements, incorporating international elements into their teaching to foster global awareness among students. These individual efforts, as outlined by Klemenčič and Zgaga (2013), are particularly impactful in regions like the Western Balkans, where historical and cultural factors may influence partnerships

more than global academic trends. Encouraging staff autonomy aligns with research suggesting that educator-driven initiatives can catalyse broader institutional shifts towards internationalisation (Stohl, 2007). In this context, the article supports the notion that well-structured and consistently implemented professional development approaches are essential for empowering educators to engage with international perspectives

Furthermore, the authors suggest exploring the potential of collaborative networks that span national borders within the Western Balkans. Such networks could facilitate the exchange of best practices and resources for academic professional development, providing a cost-effective way to enhance global competencies in the absence of systematic national frameworks. Such initiatives could have significant impacts on the global readiness of higher education systems in the Balkans and similar regions.

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

SIMULACIONI MODELI U FUNKCIJI PROGRAMIRANJA OPTIMALNE POSLOVNE EFIKASNOSTI NA PRIMJERU PRERAĐIVAČKIH PREDUZEĆA

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Sažetak: *Kvantitativna deskripcija stanja poslovanja preduzeća zasniva se na prevođenju problema u adekvatan teorijski model, kako bi postupkom modeliranja poslovnog sistema, kroz upravljačke akcije usklađene sa okolnostima u kojima egzistira poslovni sistem postala moćno analitičko oruđe na problemima prevazilaženja nedovoljne poslovne efikasnosti. Podizanje efikasnosti predstavlja ključni motivirajući element jednačine promjena u iznalaženju mogućeg rješenja kao stanja u koje sistem, u skladu sa postavljenim ciljem, želi u budućnosti dospijeti i time ojačati konkurentsku prednost i osigurati tržišnu poziciju. Realni poslovni ambijen otvara brojne mogućnosti poslovnog ponašanja, dok pojedine opcije omogućavaju preduzećima dostizanje željenog ekonomskog kvaliteta, iskazanog u obliku efikasnih strategija, odnosno postavljenih ciljeva. Mnogi realni faktori iskazuju odgovarajuću povezanost, koju je potrebno prepoznati, kvantifikovati i uključiti u adekvatan teorijski model koji povezuju poslovne ishode sa uzrokom ili vjerovatnoćom njihovog nastanka, uključujući matematičku povezanost ulaznih promjenljivih sa mogućim poslovnim ishodom. Objektivan pristup u primjeni teorijskih alata, odnosi se na uvrštavanje početnih pretpostavki u kvantitativni odnos, kao polaznu pretpostavku optimalne kombinacije resursa. Dakle, izgradnja modela treba da omogući postizanje upravljačke ravnoteže kroz modelsku korekciju raspoloživih operativnih resursa. Novi tržišni uslovi zahtijevaju sve širu primjenu teorijskih modela sa ciljem prevazilaženja problema nedovoljne efikasnosti poslovanja. Rezultati istraživanja treba da pokažu da primjena regresione analize ekonomskih funkcija, simulacionog i konkurentskog modela, kao i modela matematičkog programiranja u konkretnom primjeru omaogućava preduzeću značajno podizanje nivoa poslovne efikasnosti kroz povećanje profita, potpunije iskorištenje kapaciteta i povećanje konkurentske sposobnosti. Problemi poslovanja navedenog preduzeća sadržani su, prvenstveno u nedovoljnoj efiksnosti poslovanja koja svakako proizilazi iz opterećenosti troškovima prometnih viškova (zbrinjavanju zaliha), posebno u slučajevima kada se kvalitet usluge direktno izražava „svježinom" predmeta razmjene u okviru poslovanja.*

Ključne riječi: *simulacioni modeli, optimalan poslovni rezultat, prirast poslovne efikasnosti.*

JEL klasifikacija: *C1, D0*

UVODNA RAZMATRANJA

Ključne pretpostavke adekvatne konkretizacije poslovne efikasnosti podrazumijevaju da se prvenstveno sagledaju šanse i opasnosti koje nastaju u okruženju preduzeća, kao i jake i slabe strane preduzeća sa ciljem da se identifikuju kritični faktori poslovnog uspjeha. Shodno prethodno uočenim i analiziranim pokazateljima, a na bazi utvrđene strategijske vizije, opredjeljuje se misija, razvojni ciljevi, pravci metodi, tempo i instrumenti njihove optimalne realizacije u dinamičnoj poslovnoj sredini.

Formulisanje upravljačke vizije upotpunjeno analizama, rasuđivanjem i iskustvom stratega održava i permanentno podiže nivo poslovne efikasnosti poslovnog sistema kao cijeline, kao i svih njegovih podsistema adaptacijom na promjene u poslovnom ambijentu, za razliku od nasumične vizije koja nije nastala na ovakav način rada i razmišljanja.

Dinamička poslovna sredina sadrži stalne promjene kao što su: ukus i potrebe potrošača i korisnika proizvoda i usluga preduzeća, tehničko-tehnološki razvoj, globalizacija tržišta ... Ukoliko preduzeće ne uvaži promjene u okruženju, druga preduzeća će ga "pregaziti", tako da će, kao u evoluciji ljudske vrste, ostati samo ona preduzeća koja su se pravovremeno prilagodila promjenama.

Kontinuiran razvoj preduzeća podrazumijeva neprestanu potrebu izgradnje strategije vitalnosti poslovnog sistema, odnosno strategije podizanja funkcionalne potentnosti u cilju stvaranja upravljačkog kapaciteta. Međutim jednom uspostavljeni odnos se ipak narušava tako da kratkoročni debalans u ponudi i tražnji proizvoda direktno se replicira kako na gubitak pojedinih oblika resursa, tako i na nedovoljno iskorištenje kapaciteta. Ovakva odstupanja koja se manifestuju kroz disfunkcionalan odnos zahtijevaju ozbiljnu naučnu analizu upravljanja ulazno – izlaznim vektorom sistema što je u domenu odgovornosti menadžmenta preduzeća čiji zadatak jeste uspostavljanje optimalne veličine proizvodnog kapaciteta, optimalnog vremena realizacije proizvodnog procesa, optimalne dinamike nabavke. Poslovni sistemi paketom mjera i odluka vlastite aktivnosti usmjeravaju u pravcu ostvarivanja poslovnih ciljeva definisanih kao željene vrijednosti koordinata izlaznih vektora. (Landika M., 2017)

Cilj ovog rada je da se ispitaju mogućnosti koprištenja i rezultati primjene teorijskih modela u riješavanju praktičnih problema u konkretnim situacijama. To se naročito odnosi na upotrebu objektivnih matematičkih postupaka, kako bi se izrazio kvantitativni odnos i sadržina početnih postavki koje se odnose na izbor optimalne kombinacije resursa prilagođenih uslovima odlučivanja i primjenom odgovarajućih teorijski modela.

Teorijski modeli prilagođavaju se konkretnim problemima, tako da se uočenim problemima odlučivanja u uslovima stohastičke neodređenosti pridružuju odgovarajući regresioni modeli i modeli simulacije, u uslovima neizvjesnih poslovnih ishoda odgovarajući konkurentski modeli, dok se u uslovima determinističke povezanosti poslovni sistem modelira matematičkim programiranjem.

PRETHODNA ISTRAŽIVANJA

Simulacioni modeli su vrlo česta alatka u rukama menadžera prilikom procesa donošenja odluka vezanih za strateška opredjelenja i pravce budućih djelovanja. Pregled primjene simulacionih modela u procesima odlučivanja prvobitno je još davne 1975 godine dao Cox Lerbetter i Smith (Cox, 1977) i 1985 godine Nelson, Bradbord, Cox i Ledbetter 1985 godine (Nelson, 1987). Autori su istraživali učestalost pimjene simulacijskog modeliranja na svim nivoima odlučivanja kao strateška, operativna i taktička podrška. Usporedba rezultata ovih studija pokazalaje kroz promatrano razdoblje značajan porast upotreba simulacija na operativnom nivou (u 1985. godini 38.2% poduzeća često je na tom nivou upotrebljavalo simulacije). (Dušak, 1992)

Mogućnosti matematičke simulacije u funkciji prognostike su veoma efikasne, jer se prilagođavaju individualno svakom upravljačkom problem. Aplikacija modela matematičke simulacije nije uslovljena postojanjem realnog poslovnog sistema, već se može primjeniti i na virtuelni poslovni sistem (Mirjana Landika, 2022)

Modeli simulacije efikasno rješavaju probleme kao što je problem optimalan izbor alternative ekološkog zbrinjavanja proizvodnih viškova u funkciji očuvanja životne sredine (Landika & Mikić, Modeliranje upravljačke simbioze prirodnih i ekonomskih entiteta u funkciji održivog razvoja, 2011), izbor optimalne strategije izlaska na inostrano tržište (Landika, Sredojević, & Bojanić, Simulation modelsin the function of optimization of strategic selection offoreingn market positioning, 2017), optimalne predikcije cenzurisane tražnje uslužnih preduzeća (Landika & Račić, Modelske predikcije stvarne tražnje u okviru uslužne djelatnosti, 2020) ili obrazovne usluge (Landika, Uremović, & Aleksić, Simulation models in the function of censored demand management of higher educatio processes in the era of digitalizazion, 2022).

POJAM I FUNKCIJA STRATEGIJSKOG MENADŽMENTA

Jedna od najbitnijih tvorevina moderne civilizacije je preduzeće, shvaćeno kao organizacija ljudi i sredstava koja mogu biti imaterijalna, materijalna i finansijska, odnosno ekonomski entitet kao integracija navedenih resursa sa odgovarajućim zajedničkim ciljem. Poslovni sistem, kao specifična organizacija permanentno zahtijeva napajanje upravljačkom energijom.

U teoriji i praksi se često srećemo sa činjenicom da se upravljanje preduzećem naziva, odnosno poistovjećuje sa menadžmentom, što predstavlja pojednostavljeno gledanje na funkciju menadžmenta.

U kontekstu navedenog, menadžment ćemo shvatiti kao proces ili formu rada koja podrazumijeva usmjeravanje ljudi, tj. zaposlenih organizacionih članova prema datom cilju. (Stefanović, 2004)

Uspjeh u usmjeravanju ljudi prema planiranim ciljevima zavisi od aktivnosti menadžera i njihove sposobnosti da iskoriste raspoložive resurse. Aktivnosti menadžmenta su grupisane u sledeće funkcije: (Stefanović, 2004)

- planiranja,
- organizovanja,
- upravljanja i
- kontrole.

Planiranjem se u jednoj organizaciji uspostavljaju ciljevi i bira način za njihovo ostvarenje. Ciljevi predstavljaju menadžersku izjavu (obećanje) da će proizvesti

specifične rezultate u određenom vremenskom okviru. (Baroš, 2008) Prvi korak u planiranju je izbor ciljeva organizacije, zatim ciljeve za organizacione dijelove. Kada se definišu ciljevi, formuliše se program njihovog ostvarenja, koji mora biti sistematičan i sveobuhvatan. U procesu planiranja neophodno je utvrditi resursne i kadrovske potrebe preduzeća za ostvarivanje definisanih ciljeva. Doprinos rukovodstva razvoju preduzeća ne ostvaruje se samo po osnovu njihove kompetetnosti već i socijalnog inženjeringa ili spremnosti i sposobnosti da razvija i angažuje svoje saradnike (Đurić, 2003)

Nakon što definišu ciljeve i razviju planovi njihovog ostvarenja, menadžeri moraju prilagoditi organizaciju kako bi se planske odluke mogle sprovesti. Organizacija predstavlja način delegiranja poslova i odgovornosti na pojedince i organizacione dijelove i grupisanje zadataka prema njihovoj srodnosti u organizacione jedinice. Pri tome, svaka organizacija treba da obezbjedi komunikaciju i koordinaciju među zaposlenima. Komunikacija ima za cilj koordinaciju eksternih i internih komunikacija sa svim činiocima od kojih zavisi a koji na bilo koji način mogu doprinjeti boljem pozicioniranju, većoj produktivnosti i u krajnjem uvećanju profita. (Projović I, 2017)

Upravljanje treba da omogući kretanje prema definisanim ciljevima. Sinonimi za ovu fazu su usmjeravanje, motivisanje, aktuelizovanje i sl. Suština ove faze je da učini ponašanje članova organizacije takvim da pomognu ostvarivanju ciljeva preduzeća. Upravljanje je vrlo konkretna aktivnost koja podrazumijeva direktan rad sa ljudima, uključuje izdavanje komandi, komuniciranje, kontrolu izvršenja.

Kontrola postoji da bi se utvrdilo da li akcije članova organizacije vode ka ostvarivanju planom definisanih ciljeva. Svrha kontrole je da održi organizaciju na odabranom kolosijeku.

Kontrola obuhvata definisanje standarda za mjerenje performansi i poređenje sa standardima, otkrivanje uzroka odstupanja od standarda kako bi se na vrijeme učinile akcije da se koriguju performanse koje ne odgovaraju standardima.

Efikasnost poslovanja se iskazuje kao opredjeljenje obima i strukture poslovne aktivnosti kojom se uz maksimiziranje razlike izlaznih i ulaznih promjenljivih u poslovnom sistemu.

Održavanje i podizanje nivoa poslovne efikasnosti preduzeća podrazumijeva uspostavljanje logičke zavisnosti između dugoročnih ciljeva i mogućnosti, stavova i načela za njihovu realizaciju, te racionalno reagovanje na impulse i mogućnosti iz okruženja i realizovanje investicija i projektnih planova (slika 1).

Slika 1. Međuzavisnost razvojnih odluka

Izvor: (Todorović, Đuričin, & Janošević, Strategijski menadžment, 2001)

Rast prduzeća se može razumijeti kao povećanje njegove veličine i širine djelatnosti kako bi se, kroz ostvarivanje ekonomije obima i širine, tj. sinergije u poslovanju, obezbjedila efektivna i efikasna realizacija poslovne misije misije. Razvoj pre-

duzeća jeste povećanje njegovih dimenzija, odnosno obima aktivnosti na područjima, proizvodnje, plasmanana, kadrova, unutrašnjih odnosa, ekonomskoj efikasnosti itd.

Rast i razvoj je put da se preduzeće osposobi za efikasnije ostvarivanje svoje uloge u društvenoj reprodukciji, pri čemu je neophodno da se uoče i iskoriste šanse koje se stvaraju u uslovima privređivanja. Spremnost preduzeća da prihvati rast u datom periodu zavisiće od njegovog trenutnog položaja na tržištu, dostignutog obima poslovanja, finansijske snage, kadrovske strukture i sklonosti menadžmenta da prihvati rizik i vrši promjene.

Korisno je da se uoči urgentnost pojedinih faktora, u smislu da se klasifikuju na sledeći način: (Ansoff, 1984)

- Faktori koji će brzo nastupiti, te preduzeće mora odmah na njih da reaguje;
- Faktori koji su izvijesni, ali dozvoljavaju da ih preduzeće obuhvati u narednom planskom ciklusu i
- Faktori koji su permanentno prisutni, sa trajnim dejstvom, te preduzeće može da se pripremi da na njih reaguje kada dostignu svoju kulminaciju.

Na nekim područjima pojava ekonomije veličine uslovljena je prirodom proizvodnje i karakteristikama proizvoda, a najočiglednija je u situacijama: (Speight, 1962)

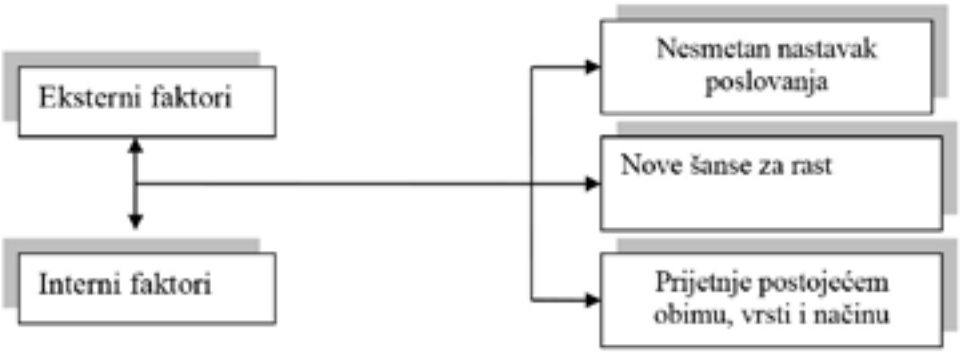
- gdje su proizvodi i oprema za njihovu proizvodnju veliki,
- gdje je proces proizvodnje kompleksan,
- gdje je proizvod standardizovan i može biti proizveden u velikim serijama na posebnim mašinama,
- gdje se skupi istraživačko-naučni radovi pojavljuju kao značajno konkurentsko oružje,
- gdje je tržište geografski koncentrisano ili su troškovi transporta niski u odnosu na vrijednost jedinice proizvoda i
- gdje se zahtijeva veće učešće sredstava za rad.

Aktivnost pojedinih podsticaja mora se analizirati u kontekstu svih ostalih faktora koji opredjeljuju efikasnost poslovanja u određenom sistemu privređivanja. Pored podsticajnih faktora koji šalju preduzeću impulse u obliku prilika koje je neophodno uočiti i iskoristiti, postoji i čitav niz ogarničavajućih faktora koji mogu da neutrališu neke podsticaje za rad.

Analitički okvir za izbor razvojne strategije

Razvojno ponašanje preduzeća treba da bude zasnovano na uočavanju i uvažavanju šansi i opasnosti koje će nastajati u promjenama faktora okruženja, kao i na utvrđivanju mogućnosti narastanja internih sposobnosti preduzeća (npr. na području marketinga, proizvodnje, kadrova, finansija i sl.). Cilj je da se istraže uslovi za uspostavljanje najboljeg balansa između eksternih šansi i internih mogućnosti. Analiza treba da pokaže da li je konstelacija eksternih i internih faktora takva da:

- omogućava nesmetan nastavak poslovanja,
- konstituiše nove šanse za rast i razvoj preduzeća ili
- stvara prijetnju postojećem obimu, vrsti i načinu poslovanja dotičnog preduzeća.



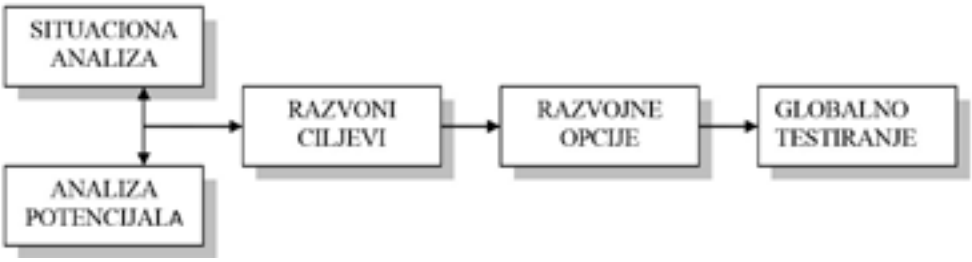
Slika 2. Konceptualni okvir za opredjeljivanje razvojnog ponašanja preduzeća

Izvor: (Todorović, Đuričin, & Janošević, Strategijski menadžment, 2001)

TEORIJSKI ASPEKT EFIKASNOSTI U STRATEGIJSKOM MENADŽMENTU

Preduzeće je ekonomska jedinica svakog društvenog sistema, koje je osnovano sa ciljem, sačinjeno od ljudskih, materijalnih, nematerijalnih i monetarnih resursa. Preduzeće je jedinica ekonomskog sistema koje čini državnu i svjetsku ekonomsku zajednicu. Svrha postojanja preduzeća je da proizvodi i plasira jedan ili više proizvoda i/ili usluga koji služe zadovoljavanju ljudskih potreba. Preduzeća mogu da imaju različite djelatnosti, ali im je zajedničko to da postoje da bi proizveli određena »dobra« koja moraju da služe zadovoljavanju ljudskih potreba i da ti isti proizvodi i/ili usluge budu interesantni za ciljano tržište. Još jedna zajednička karakteristika svih preduzeća, shvaćenih kao ekonomske jedinice, je ta da svako preduzeće mora da ostvari odgovarajući odnos ulaza, koji su neophodni da bi se proizveo tržišno interesantan proizvod i/ili usluga i izlaza, kao tržišne realizacije proizvedenog dobra.

Postizanje stepena poslovne efikasnosti nalaže poslovnom sistemu da uskladi mogućnosti i aspiracije preduzeća sa anticipiranim tendencijama u kretanju ekstenih faktora. Konkretno, preduzeće treba da integriše odgovore na pitanja: gdje je sada i zašto je tu, gdje bi moglo i trebalo da ide, i kako tamo stići; zahtijeva se: situaciona analiza, analiza potencijala i analiza strategijskih opcija.



Slika 3. Proces formulisanja razvojne politike preduzeća

Izvor: (Todorović, Strategijski i operativni menadžment, 2003)

Mjerenje i iskazivanje efikasnosnosti poslovanja preduzeća

Poslovna efikasnost se iskazuje kao zahtjev ili poreba preduzeća da ostvari što bolji odnos između korištenja resursa u procesu proizvodnje i izlaza nastalih procesom proizvodnje ili prema Porteru efikasnost je „kada se poslovi obavljaju na pravi način". Postoje tumačenja koja efikasnost dovode u vezu postignuto sa naporima koji su uloženi u postignute rezultate, ili postignuto u odnosu na moguće. Efikasnost se može iskazati na razne načine, neki od njih su: (Todorović, Strategijski i operativni menadžment, 2003)

- promjene u strukturi imovine i izvora sredstava, produktivnost, ekonomičnost i rentabilnost i drugi podaci koji su sadržani u računovodstvenim izvještajima,
- tržišno učešće,
- količini i kvalitetu inovacija i
- odnosu prema ključnim stakeholdersima.

Metode unapređenja efikasnosti strategija upravljanja – simulacioni modeli

Unapređenje poslovne efikasnosti ekonomskog entiteta zahtijeva da se simboličkom deskripcijom dođe do modela odlučivanja koji bi bio vjerna kopija poslovnog sistema, te da se modelirane upravljačke informacije uključe u proces poslovnog odlučivanja. Optimalna identifikacija problema odlučivanja, u kome su sadržani zahtijevi detekcije kvantitativnog, kvalitativnog i dinamičkog modela razmjene uslovljenog brojnim faktorima uspješno se riješava konstrukcijom adekvatnog modela simulacije.

Efikasnost poslovanja determinisana je ostvarenim profitom koji predstavlja novčani izraz kvaliteta poslovne realizacije, kao odnos izlaznih i ulaznih veličima u kojima dominiraju troškovi zaliha, koji u navedenom kotekstu, predstavljaju kriterijumsku promjenljivu. Kriterijumska promjenljiva zavisi od većeg broja slučajnih nezavisnih promjenljivih kojima je moguće i potrebno dodijeliti odgovarajuću raspodjelu vjerovatnoća korištenjem adekvatne statističke metodologije. Proces istraživanja međusobne povezanosti promjenljivih u modelu i kvantitativna identifikacija raspodjele vjerovatnoće kriterijumske promjenljive, omogućava donosiocu odluke da potpunije razumije kompleksnost problema sa aspekta primjene modeliranih smjernica, a u cilju evaluacije projekta.

Model simulacije mora biti konstruisan namjenski za svaku situaciju odlučivanja, po svojoj proirodi zahtijeva specifikaciju promjenljivih i parametara u modelu, a uslovi pod kojima se sistem posmatra moraju biti prilagođeni konvencionalnim pravilima odlučivanja, kako bi se utvrdila vjerovatnoća odgovarajućih sistemskih kategorija upotrebom slučajnog izbora.

Monte – Carlo metoda modela simulacije

Tehnika se sastoji u simulaciji eksperimenta, gdje se donosilac odluke igra sa sistemom izgrađenim po mjeri čovjeka, istražujući efekte izabrane alternative u skadu sa odabranim opcijama u odgovarajućem vremenskom intervalu, sa zadatkom da se analiza ponašanja sistema uskladi sa formulisanim ciljevima, te da se sagledaju implikacije prije ili u toku izvršenja.

Suština Monte – Carlo tehnike, sastoji se od simulacije eksperimenta kako bi se

utvrdila vjerovatnoća odgovarajućih sistemskih osobina upotrebom slučajnog izbora. Procedura analize rizika navedenom tehnikom omogućava preciznu logičku proceduru modeliranja vjerovatnoće kriterijumske promjenljive (y) kroz sledeće faze: (Landika, Uremović, & Aleksić, Simulation models in the function of censored demand management of higher educatio processes in the era of digitalizazion, 2022)

- Identifikacija kriterijumske i relevantnih nezavisnih promjenljivih;
- Kvantifikacija promjenljivih;
- Međusobni odnosi promjenljivih;
- Ocjena raspodjele vjerovatnoće za ulazne promjenljive;
- Ocjena raspodjele vjerovatnoće zavisne promjenljive (y) na bazi raspodjele nezavisnih promjenljivih (x_1, x_2, ... , x_n);
- Korištenje tehnike Monte – Carlo simulacije za dobijanje zadovoljavajuće raspodjele vjerovatnoće izlazne promjenljive;
- Evaluacija projekta koristeći dio ili sve informacije sadžane u ocjenjenoj raspodjeli.

METODOLOGIJA ISTRAŽIVANJA U CILJU POBOLJŠANJA EFIKASNOSTI STRATEGIJSKOG ODLUČIVANJA

Instrumenti i tehnike istraživanja – populacija – uzorak

Poslovni sistemi kao predmet istraživanja, posmatranja i potrebe donosioca odluke da kontroliše i usmjerava njihovo ponašanje u željenom pravcu u smislu pojavnog oblika pojedinih pokazatelja iskazuju mnogo, pa čak i beskonačno pojavnih oblika. Pojava koji se želi upoznati ili ispitati odgovarajućom metodom naziva se populacija, dok racionalisanje vremenskim i/ili materijalnim resursima u svrhu ispitivanja često koristi njen dio koji se naziva uzorak.

U funkciji validnosti istraživanja i opravdanosti izvedenih sudova opravdano se postavlja zahtijev reprezentativnosti uzorka. Uzorak će biti reprezentativan ako po svojim osnovnim karakteristikama predstavlja umanjenu sliku osnovnog skupa, odnosno populacije koja se ispituje. Lako je zaključiti da je osnovni zadatak uzorka izabranog iz osnovnog skupa procjena karakteristika toga skupa.

Način i metod izbora elemenata osnovnog skupa u uzorak, na osnovu čega se izvode zaključci, biraju upravljačke opcije i opredjeljuju pravci djelovanja, determinišu posljedice izbora. Korespodentnost validnosti strateških opredjeljenja optimalnim načinom izbora i veličinom uzorka zahtijeva suptilan pristup procesu uzorkovanja. Opredjelenje za izbor uzorka adaptirano planiranom istraživanju bio bi prost slučajan uzorak.

Implementacija modela simulacije u funkciji efikasnog upravljanja nabavnom službom u preduzeću

Preduzeće u prometnom asortimanu sadrži proizvode čije su karakteristike takve da mu je mogućnost plasmana predominantno određena „svježinom“ u trenutku realizacije razmjene. Takvi proizvodi su pretežno svježa riba, a u prodajnom asortimanu dominira šaran iz ekološkog uzgoja. Važno je naglasiti da ovakvi proizvodi skladištenjem gube svojstva upotrebljivosti, te u procesu optimizacije zaliha zahtijevaju pažljivo upravljanje kao okosnicu održivog razvoja matičnog preduzeća.

U posmatranom primjeru pozanto je da se tražnja proizvoda kreće u intervalu od 20 – 80 kg u toku radnog dana. Svakoj pojedinoj prosječnoj vrijednosti tražnji (Qt)

pridružene su i relativne frekvencije (p[Qt]), što je prikazano u tabeli 1. Relativne frekvencije izvedene su na bazi postojeće računovodstvene evidencije u prethodnom periodu. Važno je naglasiti da dinamika poslovanja omogućava se proizvod naručuje na kraju radnog dana, isporučuje promptno na početku esledećeg radnog dana, te važno je naglasiti, sve se realizuje u trenutku kada je tržnja za istim nepoznata.

Tabela 1. Relativne frekvencije dnevne tražnje za svježom ribom

Qt	20	30	40	50	60	70	80	Σ
p[Qt]	12/240	24/240	48/240	72/240	48/240	24/240	12/240	1

Izvor: (Landika & Uremović, Istraživanje i analiza, 2022)

Činjenica da se proizvod nabavlja u vremenskom trenutku u kome nije dostupna informacija kolika će biti tražnja, odluka se donosi u uslovima rizika. Važeće pravilo je da se nabavlja količina tražena prethodni dan, te da se prometni viškovi (zalihe) zbrinjavaju prodajom po nižoj cijeni (Pc1=5KM/kg), ali menadžment je mišljenja da navedeno pravilo treba preispitati. Donosioc odluke opredjeljen je da je potrebno preispitivati mogućnost da se preispita novo pravilo, a to je nabavljati očekivanu vrijednost tražnje koja u posmatranom primjeru iznosi 50 kg. Ključni problem koji opredjeljuje ekonomsku efikasnost i održivi razvoj jeste optimizacija nabavke uz ekološki prihvatljivo zbrinjavanje nabavljenih, a ne realizovanih proizvoda. Poznato je da se proizvod nabavlja po cijeni 7 konvertibilnih maraka (Nc=7 KM/kg), prodaje po cijeni 10 konvertibilnih maraka (Pc=10 KM/kg).U tome smislu komaparativna analiza ponuđenih opcija:

- Važeće pravilo je da se nabavlja količina tražena prethodni dan, uz delegiranje zbrinjavanje neprodane količine na drugo pravno lice. Navedeno bi značilo da se zalihe u narednom periodu prodaju preduzeću koje se bavi preradom proizvoda u stočnu hranu po nižoj cijeni (Pc1 = 5 KM/kg). U provedenoj analizi ovu opciju označavamo kao PRAVILO 1;
- Novo pravilo naručivanja po kome se nabavlja očekivana vrijednost tražnje uz isti režim zbrinjavanja zaliha kao u prethodnom pravilu. U provedenoj analizi ovu opciju označavamo kao PRAVILO 2;
- Nova upravljačka opcija koja se odnosi na preradu neprodate količine u novi prometno prihvatljiv oblik, gdje su ekonomski efekti prerade i tržišne realizacije mogući uz niži jedinični profit (Pf1=0,5 KM/kg). Navedena opcija označava sušenje ribe gdje se sušenjem 1 kg šarana dobija 0,5 kg sušene ribe koja se prodaje po cijeni 16 KM/kg (Pc2), a troškovi sušenja iznose 1 KM/kg (Tp). Ovu proizvodnu opciju prate dva režima nabavke i to:
    - Proizvodna prerada prometnih viškova uz režim nabavke prema tražnji od prethodnog dana. U provedenoj analizi ovu opciju označavamo kao PRAVILO 3;
    - Proizvodna prerada prometnih viškova uz režim nabavke prema očekivanoj vrijednosti tražnje. U provedenoj analizi ovu opciju označavamo kao PRAVILO 4.

Kako bi komparacija ponuđenih opcija bila adekvatno provedena, potrebno je razviti metodu generisanja tražnje koja odgovara definisanom vremanskom periodu

upotrebljivosti navedenog proizvoda. Korištene su empirijske distribucije frekvencija prosječne vrijednosti tražnje kao i fiksni vremenski interval. Time se kreira i priprema platforma za primjenu matematičke simulacije, a gdje je prikladno koristiti Monte Carlo tehniku.

U posmatranom primjeru navedeno zahtijeva pretvaranje relativnih frekvencija u odgovarajuće vjerovatnoće kako bi se odrazila proporcija brojeva od 0 do 100, što prikazujemo u tabeli 2, kako slijedi:

Tabela 2. Frekvencije tražnje predstavljene slučajnim brojevima

Qt	p(Qt)	Kumulanta	Interval slučajnih brojeva
20	0,05	0,05	00 – 04
30	0,10	0,15	05 – 14
40	0,20	0,35	15 – 34
50	0,30	0,65	35 – 64
60	0,20	0,85	65 – 84
70	0,10	0,95	85 – 94
80	0,05	1,00	95 – 99
Σ	1,00		

Izvor: (Landika & Uremović, Istraživanje i analiza, 2022)

Sa raspoloživom informacionom podlogom stečeni su uslovi za izvođenje simulacije u cilju adekvatnog izbora ponuđenih upravljačkih opcija. Potrebno je naglasiti da u provedenoj simulaciji oznake imaju sledeća značenja:

- Simulacija se bazira na uzorku od 200 slučajno odabranih vremenskih intervala koji su navedeni u koloni R.B. (redni broj);
- RAND označava programski određene slučajne brojeve;
- Predviđenom intervalu naručivanja očitavanjem dodijeljujemo adekvatnu tražnju (Qt) skladno intervalu slučajnih brojeva;
- Pravilo naručivanja direktno korespondira sa traženjom od prethodnog dana kod PRAVILA 1. i PRAVILA 3.tj. Qni = Qt(i – 1)
- Pravilo naručivanja direktno korespondira sa očekivanom vrijednosti tražnje kod PRAVILA 2. I PRAVILA 4., tako da naručena količina (Qn) odgovara prethodno određenoj očekivanoj vrijednosti tražnje tj. Qn = 50 kg ($\forall i;\ i = 1,2,3, \dots, n$);
- Prodana količina (Qp) izračunava se respektujući sledeće uslove:
  - Ako je Qt = Qn ⇒Qp=Qt
  - Ako je Qt ≠Qn ⇒ Qp=min(Qt,Qn)
- Preostala količina (zalihe; Qz) izračunava se respektujući sledeće uslove:
  - Ako je Qn > Qp ⇒Qz = Qn – Qp
  - Ako je Qn ≤ Qp ⇒Qz = 0
- Profit (Pf) izračunava se respektujući sledeće uslove:
  - Kod Pravila 1. i Pravila 2: Pf = QpxPc – QnxNc + QzxPc1;
  - Kod Pravila 3. i Pravila 4: Pf = QpxPc – QnxNc + Qzx7,5 gdje je (7,5 = $\frac{Pc2-Tp}{2}$);

- Ponoviti prethodno opisan postupak za svih 200 vremenskih intervala (radnih dana) u okviru kojih se provodi postupak simulacije.

Preglede provedenog postupka simulacije pravila naručivanja kao i određivanja načina zbrinjavanja nabavljene a neprodane količine svježeg šarana (zaliha), kao i dobijeni rezultati prikazani su u prilogu. Dok zbirne rezultate provedene simulacije možemo prikazati u narednoj tabeli:

Tabela 3. Zbirni rezultati matematičke simulacije pravila naručivanja zajedno sa pravilima zbrinjavanja zaliha

Pravilo naručivanja / zbrinjavanja	Qt		Qn		Qp		Qz		Pf	
	Σ	DN. PR.	Σ	DN. PR.	Σ	DN. PR.	Σ	DN. PR.	Σ	DN. PR.
PRAVILO 1	9850	49,25	9810	49,05	8140	40,70	1670	8,35	21080	105,4
PRAVILO 2			10000	50,00	8710	43,55	1290	6,45	23550	117,75
PRAVILO 3			9810	49,05	8140	40,70	1670	8,35	25255	126,28
PRAVILO 4			10000	50,00	8710	43,55	1290	6,45	26775	133,88

Izvor: (Landika & Uremović, Istraživanje i analiza, 2022)

Analizirajući rezultate u prethodnoj tabeli, naročito prema kriteriju ostvarivanja profita, naročito prema kriteriju ostvarivanja profita, lako je zaključiti da je neosporna prednost Pravila 4.u odnosu na ostala pravila u određivanju dinamike naručivanja i načina ekološki prihvatljivog pravila zbrinjavanja prometnih viškova.

DISKUSIJA – ANALIZA PODOBNOSTI, REPREZENTATIVNOSTI I EKONOMSKE OPRAVDANOSTI

Relativna komparacija ponuđenih upravljačkih opcija jezikom matematičkih odnosa iskazuje već potvđenu dominaciju Pravila 4.kojim analizirani problem strateškog opredjeljivanja rasuđivanja u pogledu pravila naručivanja sa jedne strane, te pravila ekološki prihvatljivog zbrinjavanja zaliha sa druge strane.

Upravljačka opcija označena u provedenoj analizi kao Pravilo 4.omogućava poslovnom sistemu za po 27,02%; 13,69% odnosno 6,14% veći profit u odnosu na ostale ponuđene opcije respektivno.

Pored navedenog, modelirane su i upravljačke konsekvence odbacivanja optimalnog izbora, što konkretno znači podbacivanje u pogledu ostvarenog profita i to relativno i apsolutno 27,02 % (odnosno 5695 KM); 13,69% (odnosno3225 KM) ili 6,14% (odnosno 1550 KM) manje u slučaju odabira opcije označene u provedenoj analizi kao PRAVILO1; PRAVILO2; PRAVILO3, respektivno.

ZAKLJUČAK

Realni poslovni ambijent otvara brojne mogućnosti poslovnog ponašanja, dok pojedine opcije omogućavaju dostizanje željenog ekonmskog kvaliteat, iskazanog u obliku poslovnih ciljeva, odnosno efikasnih strategija. Mnogi realni faktori iskazuju odgovarajuću povezanost, koja je prepoznata, kvantifikovana i uključena u adekvatan model, kao naučnu platformu upravljačkog ponašanja.

Određivanje ključnih faktora poslovnog uspijeha, uslova koji opredjeljuju njegovu realizaciju, hijerarhijska povezanost ciljeva i podciljeva, te aproksimacija struk-

ture i ponašanja dijela realiteta, je smisao formiranja i aplikacije modela odlučivanja. U tome smislu, ključna pretpostavka poslovnog uspijeha, predominantno, je sadržana u adekvatnom izboru kritičnih faktora poslovnog uspijeha ekonomskog entiteta na koji se odnosi modelska podrška.

Brojne realne situacije programiranja poslovnog portfolija zahtijevaju da se akcent stavi na optimalno upravljanje nabavnom službom preduzeća, što je posebno naglašeno u prometu ili proizvodnji proizvoda kod kojih je kvalitet predominantno uslovljen „svježinom" proizvoda. Ekonomski efekti modeliranih rezultata prevazilaze troškove modeliranja, koji uključuju relativno dostupan softverski paket i lice koje poznaje metodologiju modeliranja, čime se afirmiše naučna disciplina.

Formulisanje proaktivnih strateških pravaca omogućava modeliranom ekonomskom entitetu da, skupom planskih akcija pređe zamišljenu putanju od postojećeg do željenog stanja, a da pri tome svoju organizaciono – tehnološku platformu i stil upravljanja uskladi sa tržišnim, ekonomskim, pravno – političkim, ekološko – prirodnim i ostalim faktorima koji tangiraju njegovo poslovanje.

Modelski izbor upravljačke opcije prilagođavaju se konkretnim poslovnim sistemima i njihovim ciljevima, čime se omogućava prosuđivanje o poslovnim šansama i njihovim alternativama, oslobađajući menadžment od poslovnih iluzija. Pozitivna stopa promjene poslovnog rezultata u kojoj participira i poslovno okruženje, proizilazi iz formalizacije sistema modelskom deskripcijom simboličke povezanosti konstanti i promjenljivih u modelu.

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Mirjana Landika, N. U. (2022). PROGNOSTIČKO MODELIRANJE UPRAVLJAČKIH SMJER-

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SIMULATION MODELS IN THE FUNCTION OF PROGRAMMING OPTIMUM BUSINESS EFFICIENCY FOR THE EXAMPLE OF MANUFACTURING COMPANIES

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Summary: *The quantitative description of the state of business operations of the company is based on the translation of the problem into an adequate theoretical model, so that through the process of modeling the business system, through management actions aligned with the circumstances in which the business system exists, it becomes a powerful analytical tool for the problems of overcoming insufficient business efficiency. Increasing efficiency is a key motivating element of the change equation in finding a possible solution as a state in which the system, in accordance with the set goal, wants to reach in the future and thereby strengthen the competitive advantage and secure the market position.*

Changes in the environment are constant and uninterrupted, and the company is obliged to notice them in a timely manner, adapt to them and respond to them in an adequate way. In accordance with the above, the company sets main and partial goals. Real possibilities and business options are not set by the subjective preferences of management. They are the result of specific mathematical and enmathematical calculations on the basis of which the model is established, which is efficient and flexible enough. Also, one of the important assumptions of the goals is that it must be flexible if

it is long-term, due to leaving the possibility of adapting to changes or taking advantage of unexpected opportunities that the environment can provide.

A realistic business environment opens up numerous possibilities of business options, where some of these options enable companies to achieve the desired economic quality, expressed in the form of efficient strategies and set goals. Many real factors show an appropriate connection, which needs to be recognized, quantified and included in an adequate theoretical model that connects business outcomes with the cause or probability of their occurrence, including the mathematical connection of input variables with a possible business outcome. An objective approach in the application of theoretical tools refers to the inclusion of initial assumptions in a quantitative relationship, as a starting assumption of the optimal combination of resources. Therefore, the construction of the model should enable the achievement of management balance through the model correction of available operational resources. New market conditions require an ever wider application of theoretical models with the aim of overcoming the problem of insufficient business efficiency. The results of the research should show that the application of regression analysis of economic functions, simulation and competitive models, as well as mathematical programming models in the specific example enables the company to significantly raise the level of business efficiency through increased profits, more complete utilization of capacity and increased competitiveness. The problems of the business of the mentioned company are contained, primarily, in the insufficient efficiency of the business, which certainly results from the burden of costs of traffic surpluses (stock disposal), especially in cases where the quality of the service is directly expressed by the "freshness" of the items exchanged within the business.

Key words: *simulation models, optimal business result, increase in business efficiency.*

Jel Classification: *C1, D0*

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PRIMJENA SAVREMENIH PROCESNIH METODOLOGIJA U FUNKCIJI POBOLJŠANJA POSLOVNE IZVRSNOSTI

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Sažetak: *Domaća preduzeća moraju voditi računa o kvalitetu proizvoda, jer pored toga što neće moći poslovati na inostranom tržištu, ubrzo neće moći poslovati ni na domaćem tržištu ukoliko se ne budu pridržavali standarda kvaliteta i istovremeno vršili poboljšanja u vršenju sopstvene registrovane poslovne djelatnosti. Krajnji cilj poboljšanja kvaliteta je postizanje poslovne izvrsnosti, a izvrsnost zadovoljava krajnjeg korisnika. Da bi preduzeća uspješno poslovala neophodno je da kontinuirano vrše poboljšanja i transformacije svojih poslovnih procesa, od kojih preduzeća mogu da stvore određene manje akumulacije koje su značajne za nove pomake u povećanju nivoa kvaliteta proizvoda ili usluga. Preduzeća, takođe imaju mogućnost da tokom poslovanja donose drugačije i nove poslovne odluke, koje im za rezultat mogu donijeti pozitivne promjene koje će stvoriti značajne iskorake u dotičnom preduzeću, a koje za rezultat smanjuju buduće troškove i poboljšavaju njihovu konkurentnost na tržištu. Spoznaja da stanje grešaka ili škarta proizvoda, odnosno usluga, nastaju kao rezultat „poslovnog sljepila", koje je uzrokovano primjenom pogrešnih ili loše procijenjenih poslovnih procesa na mikro ili makro nivou, svako preduzeće prije ili kasnije dolazi do spoznaje da postoji potreba da dodatno izvrše promjene do ostvarivanja što veće ispravnosti kvaliteta proizvoda ili usluga. Primjenom novih metodologija u svrhu poboljšanja procesa preduzeća, definisana je hipoteza ovog rada, koja glasi: „Preduzeća koja primjenjuju međunarodne standarde ne postižu poslovnu izvrsnost, jer ne primjenjuju modele za ocjenu zrelosti poslovnih i za poboljšanje nivoa zrelosti poslovnih procesa."*

Ključne riječi: *poslovna izvrsnost, unapređenje kvaliteta, eliminisanje grešaka, proces, poslovno sljepilo.*

JEL klasifikacija: *B41, O31, P11.*

UVOD

Kada poslovni subjekat ulaže sopstvena sredstva u okviru svojih poslovnih aktivnosti u cilju stvaranja boljeg kvaliteta poslovanja i na taj način poboljšanja svoje poslovne izvrsnosti, može se reći da će mu takvo ulaganje dugoročno donijeti

povećanje prihoda. (Đorđević, 2012) navodi da privredni subjekti koji ulažu u produktivnost i znanje radnika mogu stvoriti bolje uslove za poslovanje na lokalnom i regionalnom tržištu, a to je dalji razvoj kvaliteta poslovanja i povećanje zadovoljstva potrošača (kupca robe ili korisnika usluga). Savremeno tržište u svijetu postavlja zahtjev pred sve poslovne subjekte da im opstanak u poslovnom svijetu zavisi od poslovne izvrsnosti i kako da se težište poslovanja prenese sa običnih pretpostavki u planiranju, na ispunjavanje očekivanja kupaca proizvoda ili usluga, a jedan od načina dostizanja i unapređivanja poslovne izvrsnosti jeste implementacija metodologija sistema kvalitete. Da bi proizvodi ili usluge bili konkurentniji na tržištu poslovni subjekti moraju sebi postavljati zadatke za postizanje standarda kvaliteta svojih proizvoda ili usluga, jer je to jedini ispravan put koji vodi prema cilju osvajanja novih tržišta. Svakako da niska cijena više neće biti jedini preduslov, prednost u utrci za bolju konkurentnost sve više dobija primjena standarda kvaliteta proizvoda i usluga koje se ponude na domaćem i stranom tržištu. Da bi poslovni subjekti uspješno poslovali moraju voditi računa o kvalitetu proizvoda ili usluga, jer neće moći poslovati na inostranom tržištu ako to ne urade, te je neophodno da kontinuirano vrše poboljšanja i transformacije poslovnih procesa, od kojih mogu da stvore značajne male akumulacije u povećanju nivoa kvaliteta proizvoda ili usluga. U osamdesetim godinama dvadesetog vijeka pojavljuju se procesi standardizacije menadžmenta poslovnih subjekata, koji kroz više serija standarda u devedesetim godinama dobijaju svoj legitimitet na evropskom i svjetskom tržištu. Ovi standardi su prošli nekoliko revizija tokom 2000, 2008 i 2015-te godine, koje su usavršavale pravila funkcionisanja poslovnih subjekata i postajale instrument novog povjerenja kupaca i potrošača kroz kvalitet proizvoda i usluga njihovim korisnicima.

Na tržištu Evropske unije mogu se plasirati samo proizvodi koji su proizvedeni u skladu sa harmonizovanim standardima i koji imaju CE oznaku[1] koja je obavezna oznaka na mnogim proizvodima unutar jedinstvenog tržišta u Evropskom ekonomskom prostoru (European Economic Area - EEA). Oznaka potvrđuje da proizvod ispunjava bitne zahtjeve za bezbjednost potrošača, zdravlja ili zaštite okoline, kao što je određeno po smjernicama ili propisima Evropske unije. Upravljanje kvalitetom i uspješna implementacija sistema kvalitete važan su preduslov kod postizanja poslovne izvrsnosti, dok posmatramo istorijski razvoj poslovne djelatnosti čovjeka je uvijek više interesovao kvalitet od troškova i produktivnosti, ali ozbiljnije bavljenje kvalitetom je počelo još u prvoj polovini 20. vijeka. Obezbjeđenje kvaliteta i upravljanje kvalitetom je definisano kroz seriju standarda ISO 9000 koje je počelo 1980.godine, a upravljanje totalnim kvalitetom je počelo da se primjenjuje uvođenjem standarda ISO 9001 od 1990.godine, koje je navedeno u tabeli 1.

Na osnovu dosadašnjeg iskustva u poslovanju poslovnih subjekata na svjetskom tržištu, može se izvesti zaključak da savremeno tržište zahtijeva od menadžmenta poslovnih subjekata da buduće poslovne promjene u poslovnom subjektu vrši u smislu adaptacije i primjene novih standarda upravljanja kvalitetom sa ciljem dostizanja veće izvrsnosti poslovnog subjekta. Savremeno tržište zahtijeva od poslovnih subjekata ispunjavanje ili čak nadmašivanje zahtjeva kupaca, odnosno težnju izvrsnosti u poslo-

[1] CE skraćena oznaka je dobila naziv od francuskog jezika “Conformité Européenne” - evropske usklađenosti).

vanju. Sistemi upravljanja kvalitetom pomažu poslovnim subjektima u poboljšanju poslovanja i poslovne izvrsnosti.

Tabela 1: Razvoj koncepta kvaliteta

Koncept	Godina
Mjerenje	1940.
Kontrola kvaliteta	1955.
Obezbjeđivanje kvaliteta	1965.
Upravljanje kvalitetom	1980.
Upravljanje totalnim kvalitetom	1990.

Izvor: Spasojević, S. (2013).

Primjenom novih metodologija u svrhu poboljšanja procesa poslovnog subjekta u skladu sa iskazanim predmetom istraživanja, definisana je hipoteza ovog rada, koja glasi: „Poslovni subjekti koji su upoznati i primjenjuju međunarodne standarde ne postižu poslovnu izvrsnost, jer ne primjenjuju komplementarne alate i tehnike za poboljšanje poslovnih procesa, između ostalih CMMI model i alate i tehnike Six Sigma."

PREGLED LITERATURE

Sistem potpune kvalitete skup je praktičnih pravila za postizanje poslovne izvrsnosti. Svaki poslovni subjekt ima mogućnost razvijanja vlastitog sistema kvalitete bez potrebe za praćenjem prakse drugih poslovnih subjekata, a samim time i bez jedinstvene i ravnopravne primjene u njihovom radu i nastupu na tržištu. U poslovnoj praksi najčešće se primjenjuje koncept cjelovitog upravljanja kvalitetom, a razvija se u više smjerova, kao što su zadovoljenje potreba korisnika (tj. potrošača), zatim unapređenje sustava kvalitete i sigurnosti zaposlenika, zaštita okoliša i rad. formirati kulturu poduzeća i educirati zaposlenike. Poslovni subjekti koji steknu međunarodne certifikate ISO standarda imaju prednost na tržištu u odnosu na druge poslovne subjekte koji ne posjeduju ovaj certifikat, posebno za izvozno orijentisana poduzeća. Budući da su poslovni subjekti u 21. stoljeću počeli poboljšavati svoje poslovanje pod utjecajem moderne tehnologije, u tom smislu će im svakako pomoći posjedovanje certifikata ISO standarda koji će im omogućiti ekonomsku prednost u odnosu na druge poslovne subjekte i konkurirati tržišnom uspjehu. poslovnih subjekata, što nedvosmisleno doprinosi povećanju zadovoljstva potrošača. (Radović, M., Tomašević, I., Stojanović, D., Simeunović, B., 2012) su utvrdili da poslovni subjekti stare orijentacije sve više prelaze na poslovne procese kao glavnu orijentaciju, jer je organizaciona struktura promjenljiva, ona je u nadležnosti menadžmenta i zbog toga služi, pored ostalog, kao sredstvo za organizovanje rada i upravljanja u radnim, odnosno poslovnim ili organizacionim sistemima. Isto tako, utvrdili su da menadžeri kada žele da nešto promijene u poslovnom subjektu najčešće polaze od kupovine novih informacionih tehnologija ili uvođenja novih standarda, ali je neophodno da prethodno utvrde i identifikuju poslovne procese koji predstavljaju temelj poslovnog subjekta.

Prilikom realizacije bilo kojeg projekta neophodno je krenuti od tog temelja, odnosno identifikacije osnovnih poslovnih procesa, jer to predstavlja pozitivnu pretpostavku za stvaranje osnove za upravljanje tim procesima, a tek na kraju kako i koji

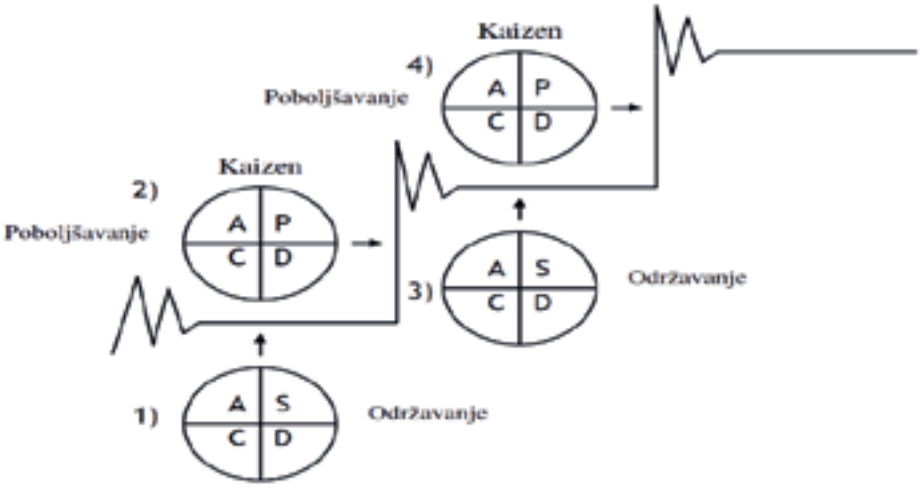
putem realizovati projekte, odnosno primijeniti standarde i nabaviti novu informacionu tehnologiju, što je slikovito prikazano na sledećoj slici 1.

Poslednju deceniju je u praksi prisutno, da zbog primjene novih standarda i koncepta upravljanja totalnim kvalitetom, mnoge javne korporacije i organi državne uprave plaćaju iz sopstvenog ili budžeta države, nabavku nove opreme iz domena informacionih tehnologija. Ovo svakako predstavlja iskorak prema boljem upravljanju kvalitetom proizvoda i usluga, ali se u budućem vremenskom periodu mora posmatrati koliko je menadžment ispravno procijenio i identifikovao temelj poslovnih procesa, kao i svih ostalih poslovnih procesa, bez čije uključenosti u standardizaciju totalnog kvaliteta nije moguće dovesti poslovne subjekte u što veći nivo poslovne izvrsnosti.

Slika 1: Realizacija projekta u procesno orijentisanom poslovnom subjektu

Izvor: Radović, M., Tomašević, I., Stojanović, D., Simeunović, B. (2012).

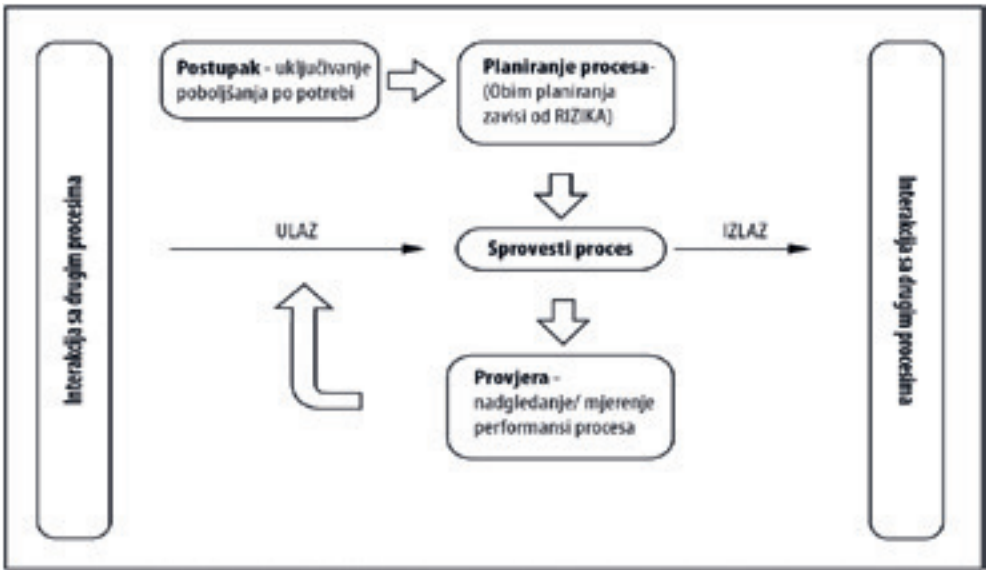
Prema (Imai, 1997), stalno poboljšanje uvelike ovisi o Demingovom modelu 'Plan-Action-Control-Act' (Plan-Action-Control-Act ili PDCA) prikazanom na slici 3. Jedan ciklus predstavlja jedan kaizen događaj. Jedna od japanskih filozofija stalnog poboljšanja je Kaizen.



Slika 3. Interakcija PDCA i SDCA ciklusa

Izvor: Imai, M. (1997).

Reč Kaizen se prevodi kao kai - promena i zen – za bolje. Kaizen predstavlja neprekidan proces čiji je cilj postizanje savršenstva, korak po korak, uz održavanje unapređenog procesa i sagledavanje mogućnosti za dalja poboljšanja. U postupku identifikacije procesa potrebno je prepoznati ili dizajnirati njihovu strukturu koja omogućuje upravljanje pojedinačnim procesima po modelu PDCA ciklusa prepoznatog i na nivou poslovnog subjekta u strukturi procesnog modela. Ovakvu strukturu, uz naglasak upravljanja rizikom ilustruje standard ISO/DIS 9001:2014 šemom na slici 4.



Slika 4. Upravljanje procesima prema standardu ISO/DIS 9001:2014

Izvor: ISO 9000 Introduction and Support Package: ISO/TC 176 SC2/N 544R2 (2008).

METODOLOGIJA

U izradi ove znanstvene studije korištene su temeljne istraživačke metode koje se koriste u svim područjima znanosti, a koja ispituje primjenu suvremenih metoda i tehnika za poboljšanje poslovanja gospodarskih poduzeća, posebice metode redukcije i ublažavanja, kao i korištenje metoda. Sastoji se od sinteze i analize. Pripremljena su pitanja za upitnik koji je projektovan tako da obuhvata pitanja iz poznavanja poslovne izvrsnosti i primjene metodologija stručnjaka u poslovnim procesima poslovnih subjekata u Bosni i Hercegovini. Predstavljajući metodu rasuđivanja, induktivna metoda koristi se za odabir pojedinačnih faktora za donošenje opšteg suda, odnosno za izvođenje zaključaka od poznatog prema poznatom. Deduktivno zaključivanje odnosi se na suprotnost od indukcije, odnosno zaključivanje na način koji osigurava da ono što je opšte prihvaćeno također vrijedi u određenoj situaciji.

EMPIRIJSKI PODACI

Kada se govori o novom kvalitetu neophodno je da budu ispunjeni propisani zahtevi za proizvod ili uslugu, a dok su zahtjevi propisani zakonom, svakako da je takvo posmatranje kvaliteta i minimalni uslov koji mora biti ispunjen. Poslovni subjekti nude

proizvode ili usluge na tržištu, koji da bi se smatrali za kvalitetne moraju da bude svrsishodni, jer se smatra da je neophodno ispunjavanje osnove zamisli zbog koje su nastali. Odnosno, ako je proizvod ili usluga projektovani i napravljeni da služi određenoj namjeni od njih se očekuje da to ispune. Porterov model četiri ugla prediktivno je pomagalo koje se koristi kako bi se predvidjelo buduće djelovanje konkurenata (slika 2).

Slika 2: Porterov model četiri ugla za predviđanje djelovanja konkurenata

Izvor: Mateša, Z. (2019).

Korištenjem četiri komponente menadžerskih pretpostavki, strategije i sposobnosti, model kombinuje strategiju i motivaciju kako bi se bolje mogle razumjeti pokretačke sile određenog poslovnog subjekta, te je potrebno odabrati pravu strategiju, precizne ciljeve i vrijedne radnike kako bi odabrana poslovna strategija dala doprinos razvoju poslovnog subjekta i bila uspješnija od konkurencije.

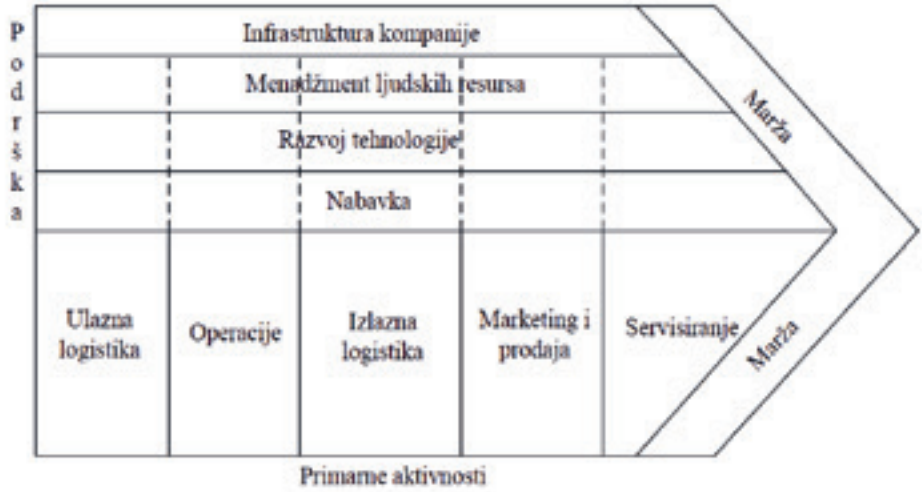
Američki istraživači (Edwards D., Joseph J., Feigenbaum A., Crosby P., 2017), kao developeri kvalitete u svijetu, smatraju da uspjeh poslovanja poslovnog subjekta uglavnom zavisi o kvaliteti, a veliku odgovornost u tom pogledu ima menadžment, a svi zaposlenici trebaju sudjelovati u postizanju kvalitete. Na njihovim konceptima razvijeni su tzv. "alati kvaliteta" koji krajem prošlog početkom ovog vijeka dali novu dimenziju ocjeni kvaliteta, tako da se može reći da se danas nalazimo u "zlatnoj eri menadžmenta". Modeli predstavljeni popularnim skraćenicama ušli su u standardnu terminologiju menadžmenta, pa su čak i u uobičajenoj komunikaciji dobro poznati termini kao ISO 9001, Lean, Six sigma, Lean six sigma, Just in time, itd. Budući da u svijetu postoje mnoga istraživanja, definicija kvalitete proizvoda ne tiče se samo proizvode već i na razvoj odnosa i ekonomije.

Svi modeli poslovne izvrsnosti se zasnivaju na želji da poslovni sistemi dobiju alat sa kojim mogu izmjeriti poslovni uspjeh i dati brzu dijagnostiku za utvrđivanje pravaca poboljšanja na svim slabim mjestima u poslovnom sistemu. Stanje grešaka ili škarta proizvoda, odnosno usluga ispitivanjem ili nekom drugom metodom koje uglavnom nastaju kao rezultat „poslovnog sljepila", koje je uzrokovano primjenom pogrešnih ili loše procijenjenih poslovnih procesa na mikro ili makro nivou. Svaki poslovni subjekat prije ili kasnije dolazi do svoje spoznaje da postoji potreba da dodatno

izvrši promjene do ostvarivanja što veće ispravnosti ili kvaliteta proizvoda ili usluga.

Procesi su, dakle, osnovno sredstvo za projektovanje, razvoj i proizvodnju proizvoda odnosno pružanje usluga, čijom se isporukom, ugradnjom i servisiranjem zadovoljavaju potrebe i zahtjevi kupaca, kojim poslovni subjekti realizuju postavljene ciljeve. Upravo iz ovih razloga proučavanje metoda i tehnika projektovanja, optimizacije i upravljanja procesima postaje osnovni predmet istraživanja industrijskog inženjerstva i drugih komplementarnih oblasti. U cilju utvrđivanja potreba za projektovanjem, reinženjeringom i/ili unapređenjem pojedinih procesa u poslovnom subjektu, potrebno je prethodno izvršiti njihovu identifikaciju (prepoznavanje), i klasifikaciju (podjelu) prema utvrđenim kriterijumima, odnosno formirati bazu podataka procesa.

Među brojnim studijama, (Porter, 1985) bio je jedan od prvih koji je razlikovao osnovne funkcije operacije i metode njezine podrške analizom vrijednosti. Prema njegovim riječima, lanac vrijednosti opisuje slijed aktivnosti koje se provode kako bi se dizajnirali, proizveli, plasirali, isporučili i podržali proizvodi poslovnog sistema, a polazište je odluka poslovnog sustava da razvije ili stvori novi proizvod. Završava primanjem usluge (ili narudžbom proizvoda koji se nudi korisniku) i dobivanjem proizvoda/usluge koji u potpunosti zadovoljava potrebe potrošača (Slika 5). Prema (Porter, Competitive advantage, 1985) , pomoćne aktivnosti, tehnološki razvoj, upravljanje ljudskim resursima i poslovna infrastruktura. Zapravo, Porterov model pretpostavlja da se poboljšanja prvo trebaju učinkovito implementirati u procese lanca vrijednosti, jer procesi lanca vrijednosti daju vrijednost krajnjem korisniku i prateći te procese, korisnici mogu brzo shvatiti utjecaj promjena.



Slika 5. Porterov lanac vrijednosti

Izvor: Porter, M. (1985).

Kada se želi definisati pojam poslovnog procesa potrebno je objasniti da se u praksi prečesto ne razumije i ne pravi razlika između poslovnog procesa i projekta i u tom slučaju se primjenjuje CMM model za ocjenu zrelosti poslovnih procesa. Pošto je pojam projekta i procesa je neko duže vrijeme u projektnom menadžmentu prisutan u naučnoj literaturi i poslovnoj praksi, iz tog razloga mnogi ljudi su spremni da jednako

tumače ova dva pojma. Međutim, kada se projektni menadžment koristi u različitim poslovnim aktivnostima, kako navode (Martin, P., Tate, K. , 2001) , često ne funkcioniše kada se radi u timovima (projekti, procesi). Procesi su vrlo slični i osnovni prikazane su razlike, a vremenski okvir, način na koji je rad podijeljen i priroda prikazanih rezultata prikazani su u tablici 2. Isto tako, utvrdili su da između više postojećih modela za kvalitetno upravljanje i mjerenje, CMM model predstavlja sistemski model za kompletan opis zrelosti programskih procesa, koji je od velike pomoći za sve poslovne subjekte koji su dostigli nivo svijesti da trebaju unaprijediti svoje poslovne procese i razvoj održavanja programskih aplikacija.

Tabela 2. Razlika između projekta i poslovnog procesa

Projekt	Poslovni proces
kratkotrajan – ima svoj početak i kraj (vremenski određeno trajanje)	kontinuiran – isti proces se ponavlja ispočetkalispočetka(vremenski neodređeno trajanje)
proizvodi jedinstveni output	proizvodi isti output svaki put kada se proces pokreće
radni zadaci nisu predefinirani u odnosu na funkcijsku filozofiju	radni zadaci su predefinirani u odnosu na funkcijsku filozofiju

Izvor: Martin, P., Tate, K. (2001).

CMM (Capability Maturity Model) je nastao kao model Instituta softverskog inženjerstva (Software Engineering Institut – SEI) 1987. godine u SAD, koji je kasnije međunarodno prihvaćeni model za ocjenu zrelosti softverskih i poslovnih procesa, kao i za identifikaciju ključnih koraka za povećanje kvaliteta procesa u poslovnom subjektu. CMM bismo mogli okarakterizirati i kao sustav smjernica poboljšanja koji se preporučuje softverskim poslovnim subjektima koje žele povećati sposobnost softverskog procesa. CMM – model se primjenjuje: za utvrđivanje prednosti i slabosti poslovnog subjekta, za identifikaciju rizika izbora korisnika, za nagrađivanje posla i nadzor ugovora, za bolje razumjevanje aktivnosti od strane menadžmenta, za pomoć pri definisanju i unapređivanju softverskog procesa u poslovnom subjektu.

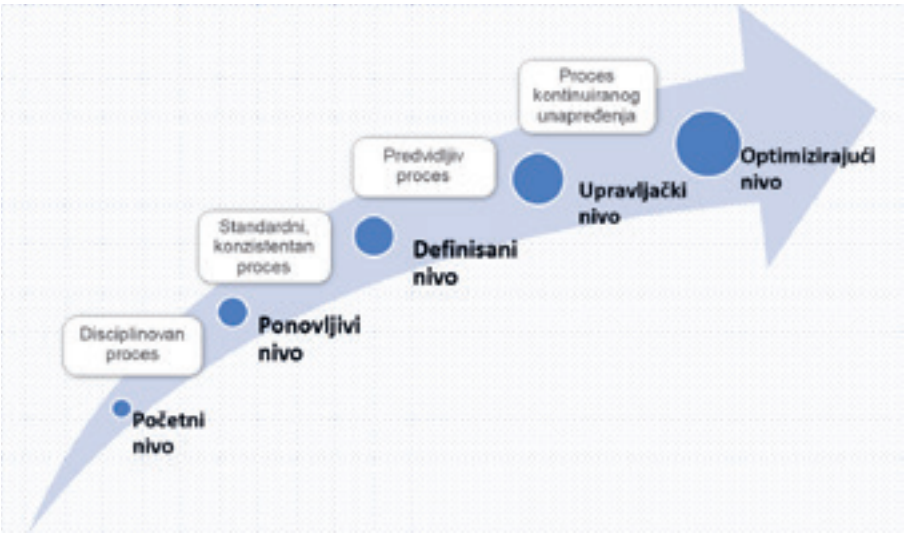
Uloga CMM modela za ocjenu zrelosti cjelokupnog poslovnog sistema je da analizira nivoe zrelosti za potrebe određivanja reinžinjeringa aktivnosti ključnih poslovnih procesa u projektu. CMM je organizovan u pet nivoa zrelosti, prema postizanju zrelog procesa, pri čemu svaki nivo pruža novi korak za kontinuirano poboljšanje procesa procesa poslovnog subjekta. Prvi nivo zrelosti postoji kako bi se uspostavila osnova za poređenje poboljšanja procesa u odnosu na više nivoe zrelosti, dok nivoe zrelosti od drugog do petog je moguće opisati nizom aktivnosti koje poslovni subjekat provodi radi poboljšanja procesa.

Prema (Walker, 2002) istraživanjem je potvrđeno da model CMMI opisuje procese kroz pet nivoa zrelosti (slika 6):

1. Prvi nivo predstavlja fazu rasta i neplanirane rezultate jer se koriste ad-hoc metode, evidencija i alati. Kada upravljanje nije učinkovito, mora se pretočiti u aktivnosti koje se prvenstveno oslanjaju na vještine tima da bi bile uspješne.

2. Nivo zrelosti, koja predstavlja dio ovog procesa, karakterizira ponovljivu izvedbu projekta. Na ovom nivou, poslovna jedinica koristi disciplinu usmjerenu na upravljanje zahtjevima, planiranje projekta, kontrolu i praćenje, ugovore o upravljanju nabavom, kvalitetu proizvodnje, upravljanje konfiguracijom te mjerenje i analizu. Stoga se na ovom nivou glavni proces usredotočuje na operacije i učinak na nivou projekta.

3. Nivo definisan klasom predstavlja proces rasta koji karakterizira poboljšanje performansi na temelju poslovnog modela. Kontinuirano poboljšavajte proces uspostavljanjem potrebnih funkcija upravljanja operacijama. Uspostavljen je standardni razvojni proces koji se koristi za svaki projekt i svaku promjenu u poslovanju. Upravljanje rizicima uvedeno je kako bi se olakšalo praćenje i upravljanje.



Slika 6. Nivoi zrelosti procesa

Izvor: Autor, preuzeto 02.05.2022. sa http://docplayer.net/6076539-Cmm-vs-cmmi-from-conventional-to-modern-software-management.htm.

4. Kvantitativno upravljani nivo pokazuje proces rasta koji karakterizira poboljšanje uspješnosti upravljanja, dok rezultati dobiveni iz prethodnog sektora pokazuju da se projekt može koristiti za razvoj dotičnih aktivnosti i da su dotični rezultati unutar konkurentskih parametara (cijena, firma, kvalitetno vrijeme). Ovaj nivo uključuje: upravljanje projektom za provedbu projekta temeljeno na operativnim performansama i statističkim metodama kontrole kvalitete koje određuju standarde uspjeha.

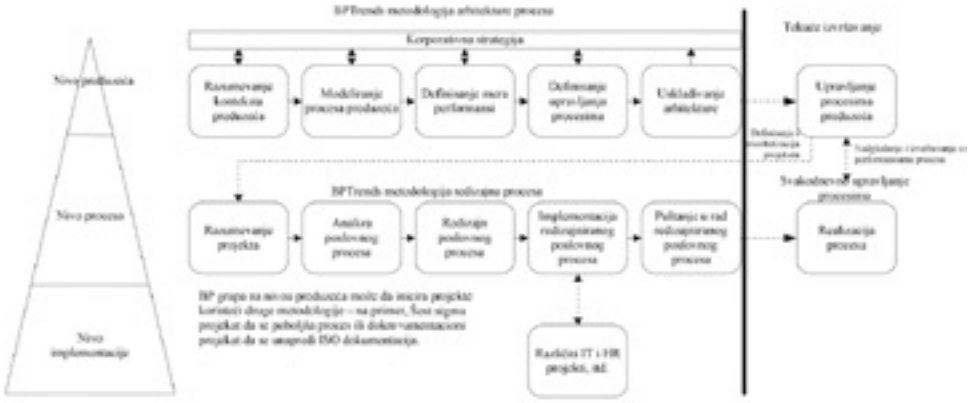
5. Optimizirani nivo ukazuje na proces rasta koji karakterizira ubrzanje reforme sustava upravljanja kao funkcije kontinuiranog poboljšanja. Ovaj nivo uključuje: analizu uzroka i donošenje odluka u smislu izbjegavanja ozbiljnih pogrešaka i koordinaciju najboljih praksi, kao i inovacije i implementaciju pri koordinaciji i poboljšanju uloge organizacije.

Prema (Walker, CMMI: From conventional to Modern Software management, 2002), CMM je jedan od novih načina ocjenjivanja kvalitete poslovanja i rasta infor-

macijskih sistema jer nema potrebe za vanjskim revizorom i obično se radi o samoprocjeni. Glavni nedostatak ove metode je što predstavlja zastarjelu tehnološku metodu koja ne uzima u obzir faktore ljudske inteligencije uključene u upravljanje projektom.

REZULTATI I RASPRAVA

Prema naučniku (Harmon, 2005) postoji opis nove metodologije koju je nazvao BPTrends metodologija zbog promjena poslovnih procesa (slika 7), a poslovni subjekat se posmatra u novoj metodologiji kroz tri nivoa: poslovnog subjekta, procesa i implementacije (lijeva strana slike). Slijedeći metodologiju na korporativnom nivou, metoda poslovnog subjekta, nazvana ”BPTrends metodologija”, opisuje ”aktivnosti koje poslovni subjekat provodi kako bi implementirao i koristio alate i metode na nivou poslovnog subjekta”. Metodologija koja se koristi na nivou procesa je “BPTrends metodologija redizajna procesa”, a koja opisuje korake redizajniranja poslovnog procesa. Pošto su ove dvije metodologije u praksi povezane jer alati koji su kreirani u ovoj metodologiji omogućavaju poslovnom subjektu da definiše i upravlja poslovnim procesima na nivou poslovnog subjekta. BPTrends metodologija redizajna procesa se sastoji iz pet faza koje omogućavaju poslovnom subjektu da primjene različite tehnike i prakse kao što su SCOR, Balanced Scorecard i Lin six sigma. Ovaj pristup se koristi za ključne promjene lanca vrednosti ili glavnih poslovnih procesa i putem ove metodologije karakteristično je da se na nivou poslovnog subjekta upravlja poslovnim procesima, definišu projekti za poboljšanje poslovnih procesa kroz metodologiju redizajniranja.



Slika 7. BPTrends metodologija promjena poslovnih procesa

Izvor: Harmon, P. (2005).

Prema (Harmon, Service Oriented Architectures and BPM, 2005), “Veliki projekti zahtijevaju vrijeme i sudjelovanje velikog broja ljudi, a ako su dobro isplanirani, mogu se učinkovito izvesti, smanjujući vrijeme koje troše uključeni i osiguravajući postizanje rezultata u kratko vrijeme.” U projektima gdje vanjski konsultanti često mijenjaju planove unutar 3-6 mjeseci, ima projekata gdje se radi analiza i cijeli projekt je gotov dvije godine kasnije.”

Druga metoda koju želim predstaviti u ovom radu je Six Sigma metoda koja

se temelji na statističkoj kontroli učinka (SPC - Statistical Control), jer smanjenjem varijance u procesu dolazi do povećanja profita i povećanja morala zaposlenika koji poboljšava kvalitetu proizvoda i usluga. (Joglekar, 2003) navodi da je pri analizi metode šest sigma važno razlikovati statističke koncepte potrebne za razumijevanje ove metode. Sigma je zapravo simbol zastandardnih devijacija, tj. standardnu devijaciju ili statističku mjeru promjene određenog trenda, tj. odstupanje od procijenjene vrijednosti. Standardna devijacija i srednja vrijednost izračuna $\{X_1, X_2, X_3...X_n\}$ ključni su pokazatelji performansi sistema i prikazani su histogramom (Allen, 2010).

Formula 1: Formula standardnog odstupanja

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(Xi - X)^2}$$

Izvor: Joglekar, A. M. (2003).

(Alagić, 2017) navodi da je Six Sigma pristup koji se temelji na znanju za postizanje ukupne kvalitete. Zbog toga se Six Sigma naziva ”savršenim” konceptom jer postiže 99,99966% kvalitete. To je filozofija stalnog poboljšanja i fokusa na ”izvrsnost u svemu što radimo”. Koncept Sigme promijenio se iz 2 Sigme u Sigmu 6. Razlika između to dvoje je broj pogrešaka na milion prilika. Donja tablica prikazuje broj pogrešaka na milion prilika od 2 do 6 sigma.

Tabela 3: Broj grešaka za različit Sigma koncept.

Sposobnost procesa Sigma	Greške/škart na milion prilika
2 Sigma	308.537
3 Sigma	66.807
4 Sigma	6.210
5 Sigma	233
6 Sigma	3,4

Izvor: Alagić, I. (2017).

(Kontić, Ž., Samardžić, I., Čikić, A., 2011) u svojim su istraživanjima potvrdili da su se za osiguranje kvalitete do uvođenja Six Sigma metode koristile norme ISO 9001. Naučnici koji su ga počeli koristiti nisu smatrali dokumente jako važnima, koristili su najbolje metode i alate kako bi postigli najbolju razinu. Dok se ISO 9001 usredotočio na formalno ispunjavanje zahtjeva standarda, koncept Six Sigma bavio se time kako poslovnaorganizacija može postati konkurentnija, smanjitiili eliminirati pogreške i odstupanja na “loše” načine koji utječu na kvalitetu proizvoda. ili uslugu. Six Sigma se usredotočuje na tri područja: poboljšavanje zadovoljstva kupaca, smanjenje ciklusa vremena (cycle time), smanjenje grešaka na proizvodima ili uslugama. (Lazić, 2011) navodi da je cilj Six Sigme uskladiti poslovni centar sa zahtjevima kupaca i tržišta. Očekivanja kupaca nisu jasna, kupce treba pitati što žele, njihova se očekivanja stalno mijenjaju i treba ih slijediti, pa se odnos s kupcem mora održati. Six Sigma metode uglavnom imaju za cilj povećati zadovoljstvo korisnika (kupaca), skratiti vri-

jeme razvoja proizvoda (skratiti vrijeme ciklusa) i smanjiti broj nedostataka (grešaka) u proizvodima i uslugama. Kako navode (Habul, A., Pilav-Velić, A. i Kremić, E., 2011) , potvrđeno je da se odnos između postojećih i novih kupaca i njihov uticaj na poslovanje može dobro izraziti. Parettov princip, poznat kao pravilo 80:20, znači: 20% kupaca osigurava 80% profita; 20% kupaca ostvaruje 80% profita; 20% kupaca pruža 80% svojih usluga i problema. Cilj provedenog istraživanja u ovom radu je da se identifikuju mogućnosti primjene savremenih metodologija kao što je Six Sigma model u upravljanju projektima sa namjerom poboljšanja poslovnih procesa poslovnog subjekta na Six Sigma nivou.

Nakon stečene spoznaje da stanje grešaka ili škarta proizvoda, odnosno usluga ispitivanjem ili nekom drugom metodom koje uglavnom nastaju kao rezultat „poslovnog sljepila“ u poslovnim subjektima, koje je uzrokovano primjenom pogrešnih ili loše procijenjenih poslovnih procesa na mikro ili makro nivou, svaki poslovni subjekat prije ili kasnije dolazi do svoje spoznaje da postoji potreba da dodatno izvrši promjene do ostvarivanja što veće ispravnosti ili kvaliteta proizvoda ili usluga (Miličević, 2024).

Tabela 4. Primjena i rezultati za model CMMI i Six Sigma

Report

Poslovni subjekti u Bosni i Hercegovini koji su upoznati i primjenjuju međunarodne standarde ne postižu poslovnu izvrsnost, jer ne primjenjuju komplementarne alate i tehnike za poboljšanje poslovnih procesa, između ostalih CMMI model i alate i tehnike Six Sigma.

Funkciju koju vršite	Mean	N	Std. Deviation
Menadžer u uslužnom poslovnom subjektu	4.0000	45	0.52223
Menadžer u proizvodnom poslovnom subjektu	4.0625	48	0.43301
Ekspert iz oblasti upravljanja kvalitetom	4.5000	36	0.50709
ANOVA TEST	F = 30,676, p = 0,000 < 0,05, Postoji značajna statistička razlika između ispitanih grupa		
Total	4.1628	129	0.52724

Izvor: Obrada autora u statističkom paketu SPSS 20

U analiziranom uzorku od 129 ispitanika koji su odgovorili na postavljeni upitnik, od toga je 72,1% menadžera u proizvodnom procesu, a 27,9% ispitanih su eksperti koji se bave upravljanjem kvaliteta, bilo da se radi sa aspekta akademske zajednice ili implementacije metoda za unapređenje kvaliteta. Analiza podataka pokazuje da se radi o relativno iskusnoj grupi ispitanika. Najviše njih je između 10 i 15 godina iskustva u struci, 34,9% ispitanih, zatim između 5 i 10 godina, 32,6%. Ostatak ispitanika, odnosno oni koji imaju preko 15 godina radnog staža ili ispod 5 godina, je 16,3%.

Sudionici su potvrdili da su poslovni subjekti u Bosni i Hercegovini upoznati i primjenjuju međunarodne standarde, koji ne postižu najbolji nivo poslovanja zbog nekorištenja komplementarnih alata i tehnika, uključujući CMM i Six Sigma, te tehničkih alata za unapređenje poslovanja. Ispunjavanje svih zahtjeva za poboljšanje proizvodnje i njihova primjena u poslovanju nije ista stvar, ovo je glavna razlika između drugih metoda i Six Sigme; direktno eliminiše devijacije uz poboljšanje proizvodnje, što bolje odražava kvalitetu proizvoda, osiguravanje tržišnog natjecanja, a potom i na cijenu proizvoda ili usluge. Ovo pitanje ispituje hipotezu predstavljenu u ovom članku

i temeljenu na rezultatima. Prosječna ocjena ispitanika je 4,1628, a postoji malo odstupanje oko prosječne vrijednosti. ANOVA test pokazuje da je razlika u mentalnom statususkupina ocijenjena kao statistički značajna budući da je $p = 0,000 < 0,05$.

Hipoteza je dokazana da „poslovni subjekti koja su upoznati i primjenjuju međunarodne standarde ne postižu poslovnu izvrsnost, jer ne primjenjuju komplementarne alate i tehnike za poboljšanje poslovnih procesa, između ostalih CMMI model i alate i tehnike Six Sigma.“

ZAKLJUČAK

Možemo zaključiti da su odstupanja česta kako u proizvodnji finalnih proizvoda tako I u uslužnom sektoru, posebice kada ih poslovne organizacije zanemaruju i ne rade na otklanjanju neučinkovitosti poslovnih procesa. Međutim, rijetki su pružatelji usluga koji mjere njihovu varijabilnost i pokušavaju je smanjiti kako bi poboljšali kvalitetu usluge, što je pogreška. Varijacije se događaju u svim poslovnim procesima, uključujući uslužnu industriju, jer do ovog smo zaključka došli analizirajući primjere iz stvarnog svijeta u kojima su menadžeri usluga pokazali svoju sposobnost mjerenja varijabilnosti u izvedbi i poboljšanja kvalitete u vrlo maloj mjeri. Postoji statistički značajna razlika u stavovima ispitanih skupina menadžera proizvodnih procesa, menadžera uslužnih proizvoda i stručnjaka za poboljšanje kvalitete o primjeni koncepta Six Sigma.

Poslovni subjekti su upoznati sa nivoom zrelosti poslovnih procesa (ispitivanje prema CMMI modelu zrelosti procesa) i primjenjuju projekte za poboljšanje poslovnih procesa. Istina je da poslovni subjekti koji poznaju i primjenjuju međunarodne standarde ne uspijevaju postići poslovne rezultate jer ne koriste komplementarne alate i tehnike za poboljšanje proizvodnje ili performansi usluga, uključujući alate i tehnike Six Sigma. Detaljna analiza istraživačkih pitanja ovdje dovodi do drugih zaključaka, kao što je zaključak da menadžeri uključeni u uslužnu proizvodnju koriste sistem kontrole varijacija i poboljšanja kvalitete na puno nižem nivou od menadžera proizvodnje.

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APPLICATION OF MODERN METHODOLOGIES IN IMPROVING BUSINESS EXCELLENCE AND PROCESSES OF BUSINESS ENTITIES

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Summary: *Domestic companies must take care of product quality, because in addition to not being able to operate on the foreign market, they will soon not be able to operate on the domestic market either if they do not adhere to quality standards and at the same time improve their own registered business activities. The ultimate goal of quality improvement is to achieve business excellence, and excellence satisfies the end user. In order for companies to operate successfully, it is necessary to continuously improve and transform their business processes, from which companies can create*

certain smaller accumulations that are significant for new developments in increasing the level of quality of products or services. Companies also have the opportunity to make different and new business decisions during their operations, which can result in positive changes that will create significant breakthroughs in the company in question, and which will reduce future costs and improve their competitiveness on the market. Realizing that the state of errors or scraps of products, or services, arise as a result of "business blindness", which is caused by the application of wrong or badly evaluated business processes at the micro or macro level, every company sooner or later comes to the realization that there is a need to make additional changes until achieving the highest possible correctness of the quality of products or services. By applying new methodologies for the purpose of improving the processes of business entities, the hypothesis of this paper is defined, which reads: "Companies that apply international standards do not achieve business excellence, because they do not apply models for assessing the maturity of business and for improving the level of maturity of business processes."

Keywords: *business excellence, quality improvement, error elimination, process, business blindness.*

JEL classification: *B41, O31, P11.*

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

TRANSPARENCY OF FINANCING OF THE NON-PROFIT ORGANIZATIONS IN THE REPUBLIC OF SRPSKA

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Abstract: *This paper examines the transparency of financing of the non-profit organizations. This subject is regulated by legal and by-laws that define the conditions and criteria that non-profit organizations, should fulfill and satisfy in order to gain allocated funds. However, the question arises of the transparency of the financing of these organizations, whether the allocation procedure is followed by reports on the intended use of funds, whether there is a clearly visible public interest that is financed by budget funds. Therefore, this research was prepared in order to provide an answer and collect data on the method of allocation and the amount of financial amounts of public funds that were available to non-profit organizations for the period 2021-2022. The subject of analysis of this paper includes the legal framework for financing non-governmental organizations in the Republic of Srpska, and the goal is to determine to what extent the legal regulation affects the achievement of transparency in the financing of non-profit organizations. In accordance with the above, the following hypotheses are tested: H1: The legal framework for financing non-profit organizations in the Republika Srpska provides an adequate basis for achieving transparency regarding the collection and spending of funds by non-profit organizations. H2: Inadequate application of legal regulations and the absence of appropriate by-laws affect the achievement of a low level of transparency in the financing of non-profit organizations in the Republic of Srpska.*
The considerations that we give through the conclusion of the paper will give us an answer to the set research problem and confirm or deny the truth of the set hypothesis.

Keywords: *management, financial management and contror, management control, public finance*

JEL classification*: D81, G18, G38, H20, H50, H70, H79, J28, K49, P43.*

INTRODUCTION

Every democratic society should encourage the development of the non-governmental sector, i.e. civil society. The reason for that is that the continuous development of society cannot be ensured if there is no dialogue and cooperation between the executive and legislative authorities with representatives of civil society. The non-governmental sector includes a wide range of organizations including all non-governmental, non-profit, independent organizations through which individuals or legal entities organized to achieve common goals and ideals. Goals can be political, cultural, religious, ecological, social, economic, as well as goals related to health, socially neglected categories and the like. In many resolutions and conventions, the United Nations recognizes the role of the civil sector in promoting the development of society, protection of the environment and human rights, democracy and good governance. This sector includes a large number of people who are committed to these goals. In Bosnia and Herzegovina, the civil sector faces numerous problems that threaten its development. Some of these problems are common to all organizations, and they relate to successful functioning, building reputation and attracting funds for the realization of their projects.

In order to encourage the work of non-profit organizations in Republic of Srpska, significant financial sums were allocated annually from public funds, budgets at the entity level and budgets of local communities for co-financing the projects of non-profit organizations. The financing of non-profit organizations is regulated by legal and by-laws that define the conditions and criteria that non-profit organizations should fulfill and satisfy in order to be allocated funds. However, the question arises of the transparency of the financing of these organizations, whether the allocation procedure is followed by reports on the intended use of funds, whether there is a clearly visible public interest that is financed by budget funds. Therefore, this research was prepared in order to provide an answer and collect data on the method of allocation and the amount of financial amounts of public funds that were available to non-profit organizations for the period 2021-2022. The subject of analysis of this paper includes the legal framework for financing non-governmental organizations in the Republic of Srpska, and the goal is to determine to what extent the legal regulation affects the achievement of transparency in the financing of non-profit organizations. In accordance with the above, the following hypotheses are tested:

H1: The legal framework for financing non-profit organizations in the Republika Srpska provides an adequate basis for achieving transparency regarding the collection and spending of funds by non-profit organizations.

H2: Inadequate application of legal regulations and the absence of appropriate by-laws affect the achievement of a low level of transparency in the financing of non-profit organizations in the Republic of Srpska.

DEFINITION AND CONCEPT OF NON-PROFIT ORGANIZATION

In the middle of the twentieth century, a more significant development of the non-governmental sector took place. Although volunteerism and the development of social awareness of citizens existed throughout history, non-profit organizations (hereinafter referred to as NGOs) in today's context, especially at the international level, have been developing for the last two centuries.

The term non-governmental organization "NGO" appears for the first time in

the United Nations, and then the Council of Europe and other multilateral and bilateral organizations use it. In the last twenty years, the use of the term NGO has become common in many countries on all continents. There are different approaches in defining the non-governmental sector, i.e. NGOs, and through the literature, we are faced with the challenge of analyzing the phenomenon of non-governmental organizations. One of the reasons for this is that NGOs are a diverse group of organizations that defy generalisation, as we range from small informal groups to large formal agencies. Non-profit organizations play different roles and take different forms within societies. For example, despite the fact that non-profit organizations are neither governed by the government, nor driven by a profit motive, there are still certain non-profit organizations that receive large amounts of government funding and others that seek to generate profit.(Lewis, 2010). The first appearance of the term non-governmental organization dates back to the forties of the last century.(María Olivo, 2007) This term was first found in an official document of the United States in Pamphlet no. 3 of 1942 in the Education and National Defense series published by the Federal Security Agency of the United States Office of Education, entitled "Non-Governmental Sources of Information on National Defense." Pamphlet no. 2 of the same series examined government sources of information. These documents are proof that for the first time in official American publications a terminological distinction is made between governmental and non-governmental organizations. (María Olivo, 2007) The term "non-governmental organization" began to be used with the establishment of the United Nations in 1945. The United Nations High Commission for Refugees (UNHCR) has set the following criteria for defining an NGO: that it is non-profit, non-commercial, non-governmental, legally registered, and that it agrees with universal humanitarian values and practices. Other international agencies look for additional characteristics, the most important of which is that the NGO has capacity, which means that it knows how to make a plan and has the resources to implement it, and that it is ready to be responsible for its activities. (UNDP, 2006) The prevalence of the term "Non-Governmental Organization" and the wide range of organizations it covers creates confusion and makes any socio-political, economic or administrative study of this term difficult.

The non-profit sector consists of individuals and organizations that help society become a community of responsible individuals oriented towards personal/family progress, but also the progress of the community to which they belong . Korten defined three generations of volunteer development actions (Korten, 2010):

1. The first generation includes a typical development NGO that focuses on aid and social welfare and provides services directly to beneficiaries. Examples are distributing food, building shelters and providing health care.
2. The second generation includes NGOs that are oriented towards small actions of local development and involve building the capacity of local communities to meet their needs through local actions, relying on their own capacities.
3. Korten calls the third generation "sustainable system development". In this phase, NGOs try to promote changes in policies and institutions at the local, national and international levels. They go beyond their role of providing operational services, and move to the role of catalyst. NGOs are starting to develop from NGOs for humanitarian aid to NGOs for development.

LEGAL FRAMEWORK FOR THE FUNCTIONING OF NON-GOVERNMENTAL ORGANIZATIONS

The legal environment that enables the activity of civil society organizations and the participation of citizens is recognized as one of the main pillars of a functional democracy. This is based on the fact that the Constitution of Bosnia and Herzegovina includes the right to association as one of the main human rights and freedoms that are guaranteed. The legal basis for the establishment, registration and work of non-governmental organizations is determined by the Constitution, which provides for the freedom of association with others in the Catalog of Rights (Article 2 point 3). It is, therefore, the constitutional right of all physical and legal persons, including foreign citizens under certain conditions, on the territory of Bosnia and Herzegovina.(UNDP, 2014)

This right is embedded in the political conditions for the EU accession process. Due to the political and administrative fragmentation of Bosnia and Herzegovina, the right to association is also regulated in two ways, at the state and entity level. The law at the state level was adopted in 2001. The valid legal framework for the work of NGOs in BiH consists of harmonized state and entity laws on associations and foundations, which in the period 2001-2002. were adopted by the competent legislative bodies, and they were the subject of certain changes and additions in the later period. These are the valid Law on Associations and Foundations of Bosnia and Herzegovina (Official Gazette of BiH No. 32/01, 42/03, 63/08 and 76/11) Law on Associations and Foundations of the Federation of BiH (Official Gazette of FBIH No. 45/ 02) Law on Associations and Foundations of the Republic of Srpska (Official Gazette of RS No. 52/01, 42/05). These laws regulate in a very similar way the issue of establishing associations and foundations, the registration procedure with competent institutions (acquiring the status of a legal entity), mandatory association bodies and association acts, property, and termination of work and penal provisions. Law on the budget system of the Republic of Srpska ("Official Gazette of the Republic of Srpska" no. 121/12, 51/14, 103/15, 15/16), Law on the implementation of the budget of the Republic of Srpska for a specific calendar year, by-laws enacted by individual budgets users such as the Rulebook on the selection procedure and the method of co-financing programs and projects in culture, the Rulebook on special criteria and the procedure for distributing funds from games of chance and the like. Precisely by analyzing the provisions of these laws and legal solutions in the following, we will confirm or refute the set hypotheses.

Legislation at all levels (Ministry of justice, 2023) stipulates that registration is voluntary. On the other hand, if the association is not registered, it cannot acquire the status of a legal entity. The basic prerequisite for acquiring the status is the association of at least three persons who are citizens of Bosnia and Herzegovina or have a residence in it, or are legal entities from Bosnia and Herzegovina, or registered in Bosnia and Herzegovina, or a combination thereof, can establish an association (i.e. a legal entity run by members) of citizens, with the fact that the law(Ministry of Justice Republika Srpska, 2023) in Republika Srpska did not introduce restrictions on citizenship or place of business. A foundation (ie a legal entity without membership managed by a board) can be established by one or more natural or legal persons, regardless of their citizenship or place of business.

It is important to point out that civil society organizations, ie non-profit organizations, can only be registered as "associations" or "foundations" - this represents the

only possible legal option for them to obtain legal subjectivity and to engage in legal business.

After the agreement on the formation of the association has been reached between the future members of the association, the founders and members hold their founding assembly. In this process, the association establishes its own bodies, namely the assembly and the board of directors, or appoints a person authorized to represent the association if there is no board of directors. In addition to the appointment of the management body, the association adopts the founding act (decision on establishment) and the statute of the association, which are legally binding acts for every association. Therefore, an association cannot exist without a statute and a founding decision. The content of these documents is prescribed by law. With the date of registration in the register maintained by the competent authority, the association acquires the status of a legal entity. This means that on the day of registration, the association becomes the holder of rights and obligations in accordance with its goals and activities. Actions taken in the period between the establishment and registration of the association can create obligations only for those persons who took those actions. For such previous actions that bind the association in some respect, the ratification of the highest governing bodies is required when the association is established. However, in order to be able to act in legal transactions, the registration procedure is only the first step in the process.

Depending on the decision on the place of carrying out their activities, the founders of the association independently decide in which register they will perform registration, i.e. entry. There are cantonal registers at the cantonal ministries of justice. There is also the Register of the Federation of Bosnia and Herzegovina at the Ministry of Justice of the Federation of Bosnia and Herzegovina and the Register of the Republic of Srpska that is kept at the Ministry of Local Administration and Self-Government. In Brčko District of BiH we have the Register, and one Register at the Ministry of Justice of Bosnia and Herzegovina. Therefore, if the association operates exclusively on the territory of one canton in the Federation of Bosnia and Herzegovina, it is sufficient to register with the competent cantonal Ministry of Justice, and if the association operates on the territory of two or more cantons, the registration should be carried out with the Ministry of Justice of the Federation of Bosnia and Herzegovina. (Ministry of Justice FBiH, 2002). If the headquarters of the association is in a municipality in Republika Srpska, registration can be done in the basic court in the seat of the district court in whose territory the association has its headquarters (although the single Register is kept in the Ministry of Administration and Local Self-Government to which the courts forward the data). Regardless of which entity it is registered in, the association operates freely in the territory of another entity without further administrative conditions, unless its activities would be in conflict with the law. The current law in Bosnia and Herzegovina stipulates that then the data from the decision on the registration of an association registered in the Republic of Srpska is transferred to the register of associations of the Federation of Bosnia and Herzegovina, while this obligation is not foreseen by the regulation in the Republic of Srpska. The founders can also register the association at the state level, and it then has the freedom to operate in the entire territory of Bosnia and Herzegovina, regardless of where the headquarters of the association or foundation is located. We conclude that, in principle, there are no legal obstacles to the registration and operation of the association, regardless of

where its founders decide to register, and that this right of choice is entrusted to the founders themselves.

If all legal requirements are met, the association is issued a permit for registration in the register of associations or foundations.

This permit, in the form of an administrative act of "decision", is issued and delivered by the authority that performed the registration (ministry/court), and it contains:

- date of entry,
- registration number under which registration was made,
- name, abbreviated name and name in a foreign language (if any) and address of the association,
- association mark (if any),
- goals and activities for which the association was founded,
- names and addresses of persons authorized for representation and representation.

In order to facilitate the process and better communication with the parties, some ministries have made available forms, including the prescribed "request for registration" and other attachments, with detailed instructions for filling out these forms. Thus, this information can be found on the website of the state Ministry of Justice of Bosnia and Herzegovina (Ministry of justice, 2023) for those interested in registration at the state level, as well as the Ministry of Justice of the Federation of Bosnia and Herzegovina (Federalno ministarstvo pravde, 2023) For those interested in registration at the FBiH level. In the Republika Srpska, the registration process takes place in basic courts located in the area of the seat of the district court. Given that, there are five district courts (Banja Luka, Bijeljina, Doboj, East Sarajevo, and Trebinje); registration is done in one of the basic courts in the mentioned municipalities, according to the criterion of geographical affiliation (proximity) in relation to the headquarters of the organization. If all the documents prescribed by the law have been properly submitted, the court will issue a decision on the registration of the founder of the association within 30 days from the date of receipt of the documents, which will make the association a legal entity.

The practice of the Basic Court in Banja Luka is that the parties personally come to get the decision, while a copy of the decision is also delivered to the Ministry of Administration and Local Self-Government of the Republic of Srpska in Banja Luka through an official channel. The Ministry further informs the party, i.e. of the founder that it was registered in the register of associations and foundations managed by the ministry.

If the association makes changes and additions to the statutes related to the activity and goals of the association, name, address, then members of the administrative bodies (including persons authorized to represent), that change must be registered with the competent Ministry of Justice (in the FBIH or in the state). , that is, the court in the Republic of Srpska. In both cases, the ministry (in FBiH and BiH) or the court issues a certificate of receipt of the request for entry in the register, or of the receipt of the request for modification or deletion of data in the register to the requester. What needs to be emphasized is that the EU's policy on civil society is based on the Guidelines for

the support of the European Union to civil society in countries undergoing enlargement (Euroepan Commission, 2022). The guidelines contain a series of goals, results and indicators that have been developed for EU support to civil society. Also, it is necessary to take into consideration the recommendations given through the 2022 Mapping Study of non-governmental organizations in BiH,(EUROPEAN COMMISION, 2022) such as:

- the content and implementation of relevant legislation related to NGOs (especially the harmonization of laws and by-laws - e.g. the Rulebook on maintaining the register of NGOs) and determining the legal obligation to (a) maintain accurate online databases of existing NGOs as well as (b) establishing working status of an NGO, as a basis for initiating the procedure for the termination of an NGO (similar to the article of the Law on the Obligation to Hold the Annual Assembly of an NGO).
- Also, in terms of the content of the relevant laws, there is a need to clarify the potential conflict of various laws regarding the possibility of NGOs to perform economic activities. Given that this segment has great potential for the sustainability of civil actors in Bosnia and Herzegovina, e.g. The Law on Consumer Protection in Bosnia and Herzegovina restricts the economic activity of non-governmental organizations active in the field of consumer protection, while the Law on Associations and Foundations of Bosnia and Herzegovina stipulates that an Association or a foundation may perform economic activity only if the main purpose of such activities is the achievement of goals established by the statute, and also the Association or foundations can perform unrelated economic activities (economic activities that are not directly related to the realization of the basic statutory goals of associations and foundations) only through a specially established legal entity.
- existing financial legislation relevant to NGOs, which would provide a modern foundation for NGOs in performing their financial affairs and reporting. The chart of accounts as well as the forms of financial reports should be fully adapted to the work of NGOs and the needs of establishing a database to support the development of the civil sector.
- transparent allocation of public funds to civil society organizations on the basis of tenders. The current estimated participation of 34.4% of public funds in the total revenues of NGOs in BiH is far below the EU average (58%).
- effective use of the existing (and drafting of new) Agreements on the cooperation of public institutions with civil society organizations, considering that the partnership of these two sectors is essential for achieving the desired improvements in terms of upcoming reforms in BiH, but also for the further development of civil society.

FINANCING OF NON-PROFIT ORGANIZATIONS

When we look at the definition of an association, it is stated that, unlike a company, the purpose of the establishment is not to make a profit, that is, to make a profit. (UNDP , 2014) The founders, members of the association, members of the manage-

ment bodies, responsible persons, workers or donors are not allowed to directly or indirectly gain profit or other material benefit from the activities of the association. This does not apply to compensation for work or reimbursement of expenses to those persons in connection with the realization of the legal goals and activities of the association that are regulated by the statute. Article 35 of the Law on Associations and Foundations of the Republic of Srpska defines that the property of an association or foundation consists of:

- voluntary contributions and gifts that have monetary value,
- financial resources from budget grants and taxes,
- subsidies and contracts with natural and legal persons,
- income from interest,
- dividends,
- profits from capital,
- rents,
- royalties and similar sources of passive income,
- income acquired through the achievement of goals and activities of the association or foundation;
- Membership fee.

When it comes to the association, and other income generated by the legal use of the organization's assets and funds. Article 35 of the Law on Associations and Foundations of the Federation of Bosnia and Herzegovina(Ministry of Justice FBiH, 2002) defines: "Income of associations and foundations may include the following:

- membership fee in the case of an association;
- voluntary contributions and gifts from public institutions, natural and legal persons, both foreign and domestic, in cash, services or property of any kind;
- state subsidies or contracts with the state, public institutions, natural and legal persons, both domestic and foreign;
- income from interest, dividends, capital gains, rents, royalties and similar sources of passive income;
- Income earned through the achievement of goals and activities of the association or foundation, as determined by the statute."

Those revenues can be used for the activities of the organization, as well as for the purchase of equipment, furniture and other technical means for work. A registered association or foundation is obliged to keep properly business books, in accordance with accounting principles, and to prepare financial reports in accordance with the requirements set forth in applicable laws. Their authorized body determined by statute and law, as well as competent authorities performs supervision over the legality and intended use and disposal of association and foundation funds.

In accordance with the legal provisions, we distinguish between different sources of financing the work of non-governmental organizations. Some of them are sponsorship, donations, grants, procurement, compensation to non-profit organizations for services provided by them, public budgets (state, entity, cantonal and municipal budgets).

Most often, funds received from donors are used for institutional support and for the implementation of programs. If funds are received from local self-government

units, they can be intended for the implementation of project activities, then organizations can be allocated some space for use, so that this support is not expressed directly through the inflow of money, but as support in kind, etc.(UNDP , 2014)

In the previous period, especially after the war, non-profit organizations on the territory of Bosnia and Herzegovina were financed by international, foreign institutions and organizations. However, as time passes, the possibility of attracting foreign donors decreases, so the goal would be non-governmental organization should have to be self - sustainability , te provision of living funds through the self-financing . U according to with goals associations that is purpose establishment non-profit organizations, which is defined through the statute, the same, can perform related economic activity. That is one from the Find on self-financing. Such activities they have to to be related goals established in statute, a gain se not shares between has a founder and members is already investing further in statutory activities .

U according to s provisions of the law about tax on the gain in both entities, associations and foundations not I am paying tax on the gain accomplished like the result performance related economic activities. The income must be directed to the further work and development of the NGO. The only limitation is that the profitable activity must be in accordance with the organizational goals for which the NGO was registered and that these activities are in accordance with the applicable legal regulations in BiH, as well as that the income is directed exclusively to the activity of the organization in accordance with the statute.

Non-profit organizations are required to submit annual financial reports and reports to the appropriate institution, namely the Financial and Information Agency of Bosnia and Herzegovina, the Financial and Information Agency of the Federation of Bosnia and Herzegovina or the Agency for Mediation, Financial and Information Services of the Republic of Srpska. In addition to the law on associations and foundations, the operations of civil society organizations are affected by other laws in Bosnia and Herzegovina, especially the Law on Value Added Tax of Bosnia and Herzegovina and the Laws on Accounting and Auditing of the Republic of Srpska and the Federation of Bosnia and Herzegovina.

The content of the Law on Value Added Tax of Bosnia and Herzegovina leaves room for different interpretations of the tax liability regarding grant support received by non-profit organizations. Despite the fact that non-profit organizations implement their projects and programs in order to realize their organizational goals as non-profit legal entities, the positions of the BiH Indirect Taxation Administration, regarding the taxation of grants and donations to civil society organizations, are such that the burden of proof is on the payer of indirect taxes. The actual situation, after reviewing by inspectors in each non-governmental organization can only be determined in the control procedure. In this process, the authorized official (inspector) independently determines the facts and circumstances based on which he applies the regulations and, based on his conviction, decides which facts will be taken as evidence of the assessment of the legality of each act. Consequently, there have been cases where inspectors act differently in the same legal matters, which creates legal uncertainty that can call into question the functioning of civil society organizations, and even the survival of the non-governmental sector.

The relevant legal solutions that we have mentioned, that is, the provisions of those laws, directly affect the financing of non-governmental sector organizations.

Although they have the same names, the Laws on Accounting and Auditing of the Republic of Srpska and the Federation of BiH establish different bases for non-profit organizations in performing financial management and bookkeeping. If they are based in FBiH, non-profit organizations will keep their financial records according to the Chart of Accounts created only for associations and other non-profit organizations. There is no special chart of accounts for non-profit organizations in the Republic of Srpska and they apply the chart of accounts created for profit-making companies, as well as forms (eg balance sheet and income statement, cash flow form, etc.).

The operation of non-governmental organizations is defined by a series of aforementioned legal solutions. However, there are still no detailed data on the sources of financing of non-governmental organizations in terms of sources of financing. We group funding sources into:

1. Domestic sources of financing: budgets of local self-government units, cantonal or entity levels of government, state level, then public and private companies and individual donations,
2. International funding sources: EU funds, other governments, corporate, private/government foundations, etc.

One of the detailed analyzes of the financing of non-governmental organizations that examines the financing of NGOs from domestic, public budgets is the analysis "Transparency of financing of non-governmental organizations in Bosnia and Herzegovina from public budgets". (Martić, 2023). As the analysis showed, what characterizes the financing of the non-governmental sector from public budgets is insufficient transparency as well as the impossibility of determining the common and public interest. Common and public interest should be the decisive criterion when allocating public money to the non-governmental sector. Data show that the funds allocated to non-profit organizations from the budgets of local self-government units, the budgets of cantons in the Federation of BiH, the budgets of ministries at the level of Republika Srpska and the Federation of BiH , and the budgets of joint institutions at the level of BiH amount to over one hundred million convertible marks. (Centar za istrazivacko novinarstvo, 2023). The sources used for data collection were the auditor's reports on the conducted financial audit for 2021 and 2022. In the previous two years, more than 47 million convertible marks were allocated to non-profit organizations from the budget of the Republic of Srpska. It should be noted here that the budget funds that are realized in the form of transfers to non-profit organizations are many times higher because, in addition to non-governmental organizations, they also include transfers to public institutions and other non-profit business entities

When it comes to the purpose of financing, it is mainly about budget funds that are allocated to non-profit organizations on three different bases: a) as (grant) grants for financing their ongoing (regular) activities, b) as grant funds for the implementation of certain projects, and c) as grant funds for the organization of certain manifestations and events.

Table 1: Overview of the financing of non-profit (and non-governmental) organizations from the Budget of the Republic of Srpska for 2021 and 2022

Name of the institution	2021 year	2022 year
Ministry of Family, Youth and Sports	**7,761,252**	**14,971,436**
Grants to organizations and associations in the field of sports, youth and family	7,668,052	14,833,418
Grants to organizations and associations for family affirmation	72,400	124.018
Capital grants to youth organizations and associations	20,800	14,000
Ministry of Labor and Veterans' Disability Protection	**2,039,271**	**2,800,895**
Current grants for the construction and maintenance of monuments, memorials and military cemeteries - public invitation	683.371	557,395
Current grants to non-profit organizations - public call	450,000	950,000
Current grants to public interest associations - no invitations	700,500	850,500
Funding of projects and programs in accordance with According to the Law on games of chance - public invitation	205,400	443,000
Ministry of Education and Culture	**1,939,444**	**2,081,422**
Current grants to organizations and associations in the field of culture	639,200	1,201,422
Grants for national minorities	30,000	30,000
Grant for public interest associations	31,000	100,000
Grant for the Society of Members of Matica Srpska u Republic of Srpska	24,000	24,000
Grant funds for film development	700,000	
Funding of projects in accordance with the Law on Games of Chance	515.244	726,000
Ministry of Health and Social Protection	**3,074,899**	**3,199,399**
Grants to humanitarian organizations and associations	770,000	709.337
Grants to organizations and associations in the field of education, scientific research, culture and information	30,000	30,000
Grants to organizations i associations in accordance with the Law on Games of Chance	1,983,399	2,195,598
Grants to non-profit entities of public interest	291,500	264,464
Ministry of Administration and Local Self-Government of the RS	**4,087,000.00**	**4,071,300**
Current grants to political organizations	3,670,000	3,670,000
Current grants to foundations and citizen associations	50,000	70,000
Current grants to public interest associations	80,000	80,000
Current grants to charitable and humanitarian societies	257,000	251,300
Current grants to other associations	30,000	
General Secretariat of the Government of the RS	**757.301**	**908.100**
Grants to humanitarian organizations and associations	7,000	37,000
Grants to sports and youth organizations and associations	148,000	158,000
Grants to ethnic and religious organizations and associations	187.301	47,000

Grants to organizations i associations for family affirmation, and protection of the rights of women, children, refugees and displaced persons, combatants and persons with disabilities	87,400	110,600
Grants to organizations and associations in the field of health and social protection, environmental protection and communal activities	43,000	86,000
Grants to organizations and associations in the field of education, scientific research, culture and information	109,000	222,500
Grants to organizations and associations in the field of economic and economic development	2,000	27,000
Other current grants to non-financial entities in the field of education, scientific research, culture, information, health, social protection, environmental protection and communal activities	173,600	220,000
IN TOTAL	19,659,167	28,032,552

Source: https://gsr-rs.org/wp-content/uploads/2023/10/RG001-23_Cyr.pdf

As a practical representation of the allocation of funds to non-profit organizations, we present the procedure for the distribution of funds Current grants to organizations and associations in the field of culture within the budget beneficiary Ministry of Education and Culture. For the year 2022, the value assigned to non-profit organizations was 1,201,422 convertible marks. The Rulebook on the selection procedure and the method of co-financing programs and projects in culture (" Official Gazette of the Republic of Srpska" number: 8/20) defines the forms of support, as well as the criteria that must be respected when selecting projects and programs of non-profit organizations for funding.

However, there is no obligation on the part of the competent authorities to control each granted grant, i.e. transferred funds in terms of purpose, efficiency, effectiveness and satisfaction of the public interest by non-profit organizations through implemented projects. The rulebook defines that contracts on the co-financing of projects are concluded with the beneficiaries, whereby the beneficiary of the grant is obliged to use the funds exclusively for the approved purposes in the realization of the project in accordance with the contract and submit a report on the intended expenditure of the grant funds. The audit report established that a certain number of users of grant funds did not submit a report on the intended expenditure of grant funds, which is in contradiction with the aforementioned Rulebook and the Law on the Budget System

When it comes to current grants to non-profit organizations of the Ministry of Labor, Veterans, and Disability Protection in 2022, they were reported for 3.209.180 BAM, the audit report stated that grant funds to associations and foundations for co-financing programs and projects were approved to beneficiaries whose applications do not include necessary attachments. For example, part of the necessary documentation prescribed by the Rulebook on the criteria and procedure for awarding grant funds to associations of public interest, other associations and foundations. The situation is the same with funds based on grants to associations of public interest that are approved to users whose applications do not contain the necessary attachments, that is, part of the evidence prescribed by the Rulebook on the criteria and procedure for awarding grant funds to associations of public interest, other associations and foundations. The find-

ings of the Supreme Audit Office of the Republic of Srpska Public Sector indicate that the distribution of funds from games of chance, the allocation of grant funds through a public call was also not done in accordance with the Rulebook on special criteria and the procedure for the distribution of funds from games of chance. Because the beneficiaries who were granted funds with the application were not submitted part of the evidence prescribed by Article 9 of the Rulebook on special criteria and procedure for the distribution of funds from games of chance.

For a more complete insight into the financing of non-profit organizations from the budget of Republic of Srpska, it should be noted that every year a number of non-profit organizations are also financed from budget reserve funds. This practice has been present for a long period. According to the decisions of the President of the Government of the Republic of Srpska on the distribution of funds from the budget reserve, grants are awarded in accordance with the laws on the execution of the budget of the Republic of Srpska years.

Thus, according to Article 14 of the Law on the Execution of the Budget of the Republic of Srpska for 2022,(Novakovic, Aleksic, & Milovanovic,, 2022) it is defined that the distribution of budget reserve funds is carried out in accordance with the Law on the Budget System. Exceptionally during the fiscal year, for urgent and unforeseen expenditures and projects that are not included in the budget, distribution can be made by the Prime Minister, in the amount of up to 1,000,000 BAM. When looking at the structure of grants awarded to non-profit organizations from budget reserve funds, one can notice significant financing of sports clubs and organizations in this way. At the same time, the part of the total allocations to non-profit organizations from budget reserves, the dominant part is the participation of football clubs (e.g. more than 3.5 million KM in 2019). Nothing that no information is available to the public about the purpose of these allocations, nor are there reports on the use of funds, which leaves room for numerous guesses and questions about possible misuse of those funds.

The legal framework that defines the financing of non-governmental organizations clearly laid the foundations for the financing of non-profit organizations, ensured transparency, and defined the criteria for awarding grants within the budget positions of relevant institutions. This clearly confirms the hypothesis H1 defined at the beginning of the paper.

However, the aforementioned examples confirm the second hypothesis, because the absence of appropriate by-laws affects the achievement of a low level of transparency in the financing of non-profit organizations in the Republic of Srpska.

When looking at the budgets of local communities, the level of non-transparency is extremely pronounced. Through the audit reports, it was stated that the practice is to allocate funds to non-profit organizations at the request of the user and without a public call, and where a public call is carried out, there is often a lack of clear and measurable criteria for scoring received applications, and decisions on funding are made on the basis of subjective assessments of commission members.(Supreme audit office of the Republic of Srpska public sector, 2024). In addition, the most significant part of financial resources for non-profit organizations is realized through budget items grants, that is, current transfers to non-profit organizations, then through items of capital grants/transfers and from budget reserve funds. The amounts that are allocated in the name of grants and current transfers for the financing of non-profit organizations

are in the millions in larger municipalties. Tor the illustration, in Banja Luka, as part of the realized grants, in 2020, 2.6 milion BAM were transferred to:

- sports and youth organizations,
- organizations and associations for family affirmation
- protection of the rights of women, children, refugees and displaced persons, combatants and persons with disabilities 0.8 million KM,
- Organizations and associations in the field of health and social protection of the environment and communal services 0.7 million KM.

Furthermore, in the audit report for the City of Prijedor from 2021, it is stated that The City allocated part of the grant funds based on the mayor's decisions within the budget approved positions and for defined purposes, without announcing a public call for their allocation (to public kitchens and certain social humanitarian associations, religious institutions, partly sports organizations, non-profit entities in the country, etc.). Furthermore it was without defined rules and criteria for the distribution of grants in certain areas, according to Article 60 of the Law on the Budget System of the Republic of Srpska. Certain users of the funds did not submit reports on the expenditure of the received funds, which is not in accordance with Article 11 of the Decision on the Execution of the City Budget."(Supreme audit office of the Republic of Srpska public sector, 2024).

In order to increase the transparency of the work of non-profit organizations, the Government of the Republic of Srpska has proposed a Draft Law on a special register and transparency of the work of non-profit organizations in the Republic of Srpska. That law intends to establish a special register for non-profit organizations operating in the Republic of Srpska, which receive donations from foreign sources. The positive impact of donations from abroad is that they helped non-profit organizations to survive and that donors recognized that the NGO sector can contribute a lot to the development of the country.

The Law on the Special Register and Publicity of the Work of Non-Profit Organizations of the Republic of Srpska can contribute to the transparency of financing of non-governmental organizations from foreign sources. The reason for the adoption of this law, the circumstances that until now have not been regulated by a special law in the field of publicity of the work of non-profit organizations. Namely, their political activities, publication of financial statements, keeping business books, as well as supervision of the legality of work and other provisions on the work of non-profit organizations. The Law on Associations and Foundations of the Republika Srpska regulated issues of establishment, registration procedure, internal organization and termination of work, with the fact that it did not regulate the area of publicity of the work.

Article 1 of the subject law prescribes the establishment of a special Register of non-profit organizations established in the Republic of Srpska that financially or otherwise helps foreign subjects as agents of foreign influence.

This law regulates the conditions and manner of ensuring the publicity of the work and prescribes other issues related to the work of these organizations. In terms of this law, a foreign subject is understood as the government, executive body of another country or a foreign political party, a natural person who does not have the citizenship of Bosnia and Herzegovina and resides in Bosnia and Herzegovina or a legal entity

or a group of legal entities that is organized according to the regulations of another country or that has its headquarters in another country. Government of another country means the executive authority of every country except Bosnia and Herzegovina, and foreign political party means any political party registered under the regulations of another country. Furthermore, the law defines that the Ministry of Justice maintains the Register of Non-Profit Organizations. The non-profit organization is obliged to submit to the Ministry of Justice a half-yearly and annual financial report with an indication of the payer of the funds, information on the amount of funds transferred, the type and amount of compensation and income expressed in money or other value. , as well as a report on the expenditure of funds. The Ministry of Justice submits the financial report to the Tax Administration for the purpose of inspection supervision. In the previous period, the positions available to the public from non-governmental organizations financed by foreign donors were to impose additional bureaucratic obstacles, complicate activities, and threaten the freedom of association and work of non-governmental organizations. The assumptions are that, through the registry in question, the public and transparency of the financing of non-governmental organizations from international sources would be further facilitated. However, only after the adoption of by-laws that will more clearly prescribe the procedural procedures that non-profit organizations are obliged to carry out, we will be able to assess the impact of the law in question on the transparency of the financing of non-governmental organizations.

CONCLUSION

Based on the collected and processed data from the audit reports, it is evident that on an annual level significant funds are allocated from the budget of the Republic of Srpska for the financing of non-profit organizations. Namely in 2021, 19.659.167 convertible marks were allocated, and in 2022, 28.032.552 convertible marks were allocated, whereby: the Ministry of Family, Youth and Sports, the Ministry of Administration and Local Self-Government, the Ministry of Labor and Veterans, Disability Protection stand out as the most significant budget beneficiaries according to the amount of allocated funds. Funds, which are awarded as non-refundable non-profit organizations, are most often used to finance their current and regular activities, as grant funds for the realization of certain projects and as grant funds for the organization of certain manifestations and events. Sports clubs and organizations, veterans' associations and associations in the field of culture and information lead the way in terms of participation in financing.

The analysis showed that the legal framework clearly set and defined the rules of conduct in relation to the rules and procedures for allocating funds to non-profit organizations. However, in practice, it happens that the institutions that allocate funds do not comply with the legal provisions in question, because funds are allocated to non-profit organizations upon request, without conducting a tender procedure and announcing a public call. The allocation of funds to non-profit organizations is accompanied by low transparency and the absence of basic information about the purpose of the funds, the activities carried out, the results achieved and the expenditure itself. That is, the users of the funds do not submit reports on the expenditure of the received funds.

Based on all of the above, we can conclude that both hypotheses have been confirmed. In the Republika Srpska, the legal framework for financing non-profit organi-

zations provides an adequate basis for achieving transparency regarding the collection and spending of funds by non-profit organizations. However, the inadequate application of legal regulations and the absence of appropriate by-laws affect the achievement of a low level of transparency in the financing of non-profit organizations in the Republic of Srpska.

Also, we can conclude that there is a clearly defined legal regulation, that is, the legal framework has set norms of behavior regarding the allocation of public financial resources to non-profit organizations. However, the lack evidents is the application of those legal solutions in practice. Although the allocation of financial resources to non-profit organizations is carried out through a public call, there is still a lack of transparency in terms of the purpose and effects of the allocated funds. The recommendation that is imposed is to introduce a system of previous controls regarding the assessment of the capabilities of non-governmental organizations (acquisition of necessary equipment, expertise of personnel engaged in the implementation of project activities, etc.) in order to further reduce the risk of misuse of allocated funds. From the aspect of control activities, both local and entity, the authorities should continuously monitor the realized effects of allocated funds in relation to the objectives of public calls, according to which non-profit organizations were allocated funds.

The aforementioned measures would additionally affect the transparency, efficiency and effectiveness of spending public funds allocated to non-profit organizations.

Please note that in the Republic of Srpska, in order to increase the transparency of the work of non-governmental organizations, the Law on the Special Register and the Publicity of the Work of Non-Profit Organizations was adopted, but we will be able to see the effects of its application only after the adoption of by-laws and the passage of a certain period of time.

Based on all the above, we give recommendations for future research, which would focus the research on the research of the financing system of civil society organizations in the countries of the Western Balkans. In this way, we would have comparative data for the Republic of Srpska, Bosnia and Herzegovina and neighboring countries.

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

BRENDIRANJE KULTURNOG IDENTITETA NA PRIMJERU DANA PAJE KOLARIĆA – STUDIJA SLUČAJA

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Sažetak: *Ovaj rad bavi se prikazom studije slučaja na temu brendiranja kulturnog identiteta na primjeru Dana Paje Kolarića odnosno prikazuju se specifičnosti implementacije spomenutog projekta kao dijela aktivnosti brendiranja kulturnog identiteta od strane Akademije za umjetnost i kulturu te lokalne zajednice i Grada Osijeka. U ovome radu prikazane su teorijske odrednice kulture i kulturne politike, a potom slijede specifičnosti brendiranja u kulturi. Metodološki okvir ovoga rada odnosi se na prikaz interdisciplinarnog projekta „Dani Paje Kolarića", kroz specifičnosti vezane uz formiranje projektnog tima, postavljanje glavnog cilja i specifičnih ciljeva projekta, definiranja ciljne javnosti odnosno dionika kao i planiranja i provođenja projektnih aktivnosti. Ovim radom će se prikazati kako ovakav interdisciplinarni pristup cjelokupnom projektu utječe na javnost koja će promijeniti svijest o važnosti očuvanja kulturne baštine jer će kroz projekt biti promoviran povijesni značaj i kulturno nasljeđe rada i života Paje Kolarića. Zaštititi će se arhaične vrijednosti umjetnosti 19.stoljeća kroz suvremene umjetničke izričaje mladih umjetnika, a u isto vrijeme stvara se i novi turistički proizvod kroz prezentaciju osječkih povijesnih osoba te glazbene kulture i baštine.*

Ključne riječi: *brendiranje, interdisciplinarnost, kulturni identitet, projektni menadžment, upravljanje događajem.*

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UVOD

U današnjem društvu vizualnost je postala nezaobilazni čimbenik, poglavito kada se promišlja o planiranju i pripremi strategije provedbe nekoga projekta odnosno događanja. Vizualno doba, koje je uz to još i digitalno, inzistira na slici, video zapisu, fotografiji i imidžu svih vrsta, inzistira na brzini, zanimljivosti, zabavnosti i raznolikosti. Upravo u tom kontekstu osmišljen je, strateški modeliran i proveden interdisciplinarni projekt, o kojemu će u ovome radu podrobnije biti riječi. Ovaj rad će detaljno

prikazati realizaciju interdisciplinarnog projekta, budući da je isti bio iznimno uspješan te može poslužiti kao primjer dobre prakse kako se kulturna baština, tradicija, glazba, izvedbene i primijenjene umjetnosti i znanost ujedinjuju u stvaranju kulturnoga identiteta.

Ovaj rad daje teorijski okvir upravljanja projektom i događanjem te pojašnjava sam proces brendiranja u okviru stvaranja kulturnoga identiteta. Metodološki dio rada obuhvaća studiju slučaja, odnosno pomno prikazuje strategiju i taktike organiziranja ovakvoga događaja.

U zaključku se podcrtava važnost interdisciplinarnoga pristupa pri osmišljavanju određenoga projekta koji doprinosi raznolikosti i zanimljivosti samoga događanja.

TEORIJSKE ODREDNICE KULTURE I KULTURNOG IDENTITETA

Pojam kulture i kulturne politike

Moglo bi se reći kako kultura nema samo jedno značenje, već ima brojna značenja i moguće ju je promatrati s mnogo aspekata. S obzirom da ne postoji jednoznačna i usuglašena upotreba pojma kulture, može se reći da je termin multidiskurzivan (O'sulivan T., 1994; Taylor, 2016; Rihtman-Auguštin, 1970.)

Naime, kako ističe Mesić, „kulture se tradicionalno zamišljaju kao sveobuhvatni i čvrsti duhovni okviri, koji svojim pripadnicima uvjetuju, ako ne i određuju, pogled na svijet i na druge kulture, odnosno one su predstavljene kao socijalne formacije s jedinstvenim strukturama i specifičnim vjerovanjima." (Mesić, 2007.). Tradicionalno se pod konstitutivnim elementima kulture smatraju društvene norme, a tu se misli na jezik, tradiciju, mitove, običaje, obrede i samorazumijevanje neke zajednice. Dužnost pripadnika bilo koje kulture ne očituje se samo u očuvanju njezinih specifičnih simbola i praksi, već i u osjećanju kao i u međusobnoj povezanosti i solidarnosti.

Kultura se može tumačiti i kao „središnja kategorija svake multikulturalističke perspektive, stoga je teško za očekivati da će se čak i zagovornici multikulturalizma složiti glede nekih bitnih odrednica multikulturalizma, osim ako se ne usuglase oko shvaćanja kulture" (Mesić, 2007.). Kada je riječ o pojmu kulture, tada bi se moglo konstatirati kako je ovaj termin istovremeno postao i preširok i preuzak, da bi ga se uopće moglo dosljedno koristiti. Kako navodi Eagleton, „njezino antropološko značenje pokriva sve, od stila frizure i navike pijenja do toga kako se obratiti suprugovoj rođakinji u drugom koljenu, a estetsko, pak, značenje riječi uključuje Igora Stravinskog, ali ne i znanstvenu fantastiku, dok se antropološko određenje može učiniti odveć nejasnim" (Eagleton, 2002).

Prema Enciklopediji Leksikografskog zavoda „kultura je ukupnost materijalnih i duhovnih vrijednosti koje je stvorio čovjek u svojoj društveno-historijskoj praksi u svrhu svladavanja prirodnih sila, razvoja proizvodnje i rješavanja društvenih zadaća".

Kako navodi Milanja, kulturu sačinjavaju dva međusobno povezana područja, i to materijalna kultura, u koju se ubrajaju sredstva za proizvodnju i ostale materijalne tvorevine te duhovna kultura, u koju se ubrajaju ukupnost rezultata znanosti, umjetnosti i filozofije, morala i običaja. „Kultura je ukupnost moralne, društvene i proizvodne djelatnosti društva" (Anić, 1994.).

Kultura u najširem smislu riječi označava preradbu i usavršavanje nečega, neke građe, nekog materijala za određenu svrhu, a u užem smislu riječi, kultura znači ostvarivanje humanih vrednota u čovjeku i njegovim djelima (M. Žugaj, 2004.; S. Hall,

1976.). Kako ističe Posavec, „kultura i politika povijesne su suputnice, dvije od više mogućih maski građanskog društva“, stoga prema istom autoru, „ni sintagma kulturna politika nije nešto što bi samostalno postojalo, dakle što bi se konstituiralo po nekim svojim izvornim razlozima, već je radni pojam istine otuđenog bitka“ (Posavec, 1988.).

Moglo bi se reći kako se kulturna politika razlikuje od svake druge politike s kojima ima i neke određene sličnosti. Treba istaknuti i načela koja bi svakako trebao uvažavati jedan suvremeniji i konzistentan obrazac kulturne politike. Tu se misli na načelo kontinuiteta, načelo samo-determinacije i načelo selektivnosti (Mitrović, 1988.). Kada je riječ o načelu kontinuiteta, tada treba ukazati na značajnost za politiku u kulturi, i to ponajviše zbog kumulativnog karaktera (kulturnog stvaralaštva), međutim potrebno ga je razlikovati od tradicionalizma i konzervatizma kao „robovanja prošlosti i sadašnjosti u smislu njihovog što dužeg trajanja pod svaku cijenu“ (Mitrović, 1988.). Pod načelom samo-determinacije misli se na određeni stupanj autonomne motivacije, i to onih koji se smatraju objektom kulturne politike, dok se pod načelom selektivnosti, izvedenog iz prethodnog, misli na mogućnost izbora tijekom svih faza usmjeravanja društveno-kulturnih procesa, i to od izbora ciljeva kulturne politike, kao i izbora sredstava i načina ostvarenja ciljeva kulturne politike, pa sve do izbora samih kulturnih sadržaja.

Kulturni identitet

Pojam kulturnog identiteta može se promatrati i u okviru procesa globalizacije, pod kojim se misli na cjelovitost ekonomskog, političkog, kulturnog i inog kretanja jedinstvene tzv. civilizacijske paradigme. Međutim, unutar ovakvog osnovnog obrasca, događaju se i brojni procesi, koji se nalaze unutar različitih odnosa, pod različitim utjecajima i s različitim posljedicama glede osnovne tendencije globalizacije.

Kako ističu Labus i suradnici, „globalizacija kulture i komunikacija sasvim sigurno mijenjaju suvremena društva, a unutar političkog polja djelovanja, iznimno je važna (na tragu postmoderne ili druge moderne) dekonstrukcija (političkog) subjekta i njegova diseminacija u različite nositelje političke i društvene subjektivnosti“ (M. Labus, 2014.). Ovo se posebice odnosi na javnu sferu odnosno na civilno društvo, a uspostavlja se na samo-procjeni i samo-izvjesnosti nekog subjekta odnosno pojedinca, i to kao njegova univerzalna vrijednost, kako smatraju Labus i suradnici, koji dodaju da se danas pojavljuju „fenomeni novih oblika kulturnog identiteta, novih kulturnih praksi, novih određenja ljudske samopercepcije i tjelesnosti /rodna određenja/ itd.“ (M. Labus, 2014.).

Istinska bit kulture ogleda se u interkulturnoj komunikaciji, što znači da upravo onda odražava njezinu duhovnu i društvenu bit. Giordano promišlja zapadnu ideju (vlastite) kulturne gramatike, i to kao „„univerzalne gramatike“ te tako kritički analizira ideju jednog nametnutog „univerzalnog (kulturnog) katekizma“, koji se u svojoj „modernosti“ može globalno „izvoziti“, odnosno ideju koja „previđa“ svo bogatstvo nacionalnih kultura, ispadajući time izvan same biti kulture“ (Giordano, 2001.).

Prema Perasović i suradnicima, „kulturni identiteti mogu biti definirani različitim odrednicama od rase, spola i klase do etniciteta ili nacije“ (B. Perasović, 2022.). „Pritom je kao centralna karakteristika identifikacije posebno naglašen pojam razlike i usporedbe“ (Andreson, 1983.). Razlikovanje odnosno odrednica identiteta koja, kako ističe Anderson „prepoznaje „nas“ i „njih“, „pripadanje“ i „nepripadanje“, „prijatelja“

i „neprijatelja“ one „unutra“ i one „vani“, podrazumijeva emotivni naboj i prepoznavanje onog koji nije „ja“ ili „mi“ kao drugog“ (Andreson, 1983.). Upravo se iz takvog procesa oblikuje ideja zajednice, ali i granice tih ideja. Naime, zajednice mogu biti opipljive i konkretne, ali također, i zamišljene, kao što su to etno-nacionalne zajednice, koje proizvode etničke i nacionalno temeljene identitete.

BRENDIRANJE U KULTURI

Kako navodi Viljetić, „brend, u svojoj biti, nije – primarno – niti ime, niti logo, niti grafički dizajn pa čak ni (isključivo) marketinško sredstvo, već ono što organizacija predstavlja i zastupa, kroz sve aspekte svoga djelovanja, ponajprije programe“ te slijedom toga dodaje kako „brend odgovara na pitanje zašto, i u tom je smislu od vitalne važnosti svakoj ustanovi (u kulturi)“ (Viljetić, 2019.).

Sammut-Bonnici definira brend kao „skup opipljivih i nematerijalnih atributa dizajniranih za stvaranje svijesti i identiteta te za izgradnju ugleda proizvoda, usluge, osobe, mjesta ili organizacije“, kao cilj strategije brendiranja ističe stvaranje brendova „koji se razlikuju od konkurencije, čime se smanjuje broj percipiranih supstituta na tržištu, povećava cjenovna elastičnost i poboljšava profit“ (Sammut-Bonnici, 2015.). Strategije brendiranja temelje se na tzv. međuovisnim okvirima konkurentnog pozicioniranja brenda, a osim toga, značajnu ulogu ima razvoj lanca vrijednosti kao i upravljanje kapitalom brenda.

Kod promišljanja o brandiranju u kulturi, brojni se autori nerijetko osvrću na rezultate istraživanja koje je proveo Rober Jones, britanski sveučilišni profesor i konzultant za branding. Zaključci tih istraživanja danas su prisutni u brojnim ustanovama u kulturi u svijetu, i to posebice u muzejima. U anketi provedenoj na uzorku od stotinu osoba, viših menadžera, u sklopu konferencije „Communicating the Museum“, koja je održana u Veneciji 2008. godine, gotovo dvije trećine delegata odnosno ispitanika (65%) zaključilo je, između ostalog, da brend određuje izgled memoranduma (pribora za pisanje), potpisa i letaka ustanove te ih je samo ih 23% bilo mišljenja da brend usmjerava izložbene programe, dok je 17% ustvrdilo da brend utječe i na ponašanje zaposlenika (Jones, 2013.).

„Brend je sve ono što se osjeća prema nekom proizvodu, on je ljubav i privrženost te projekcija u umu i očima svakog pojedinca na kraju uspješne marketinške kampanje“ (Gigić-Karl, 2020.). Treba napomenuti da je svrha brenda usmjerena ka unaprjeđenju imidža u očima internih i eksternih dionika (Vanolo, 2008.). Upravo se moć brenda u kulturi može promatrati kroz jačanje lokalnog (kulturnog) identiteta kao i kroz poistovjećivanje lokalnog stanovništva sa svojim gradom i sl.

METODOLOŠKI OKVIR INTERDISCIPLINARNOG PROJEKTA „DANI PAJE KOLARIĆA“

U 2021. godini Akademija za umjetnost i kulturu u Osijeku obilježavala je 200 godina od rođenja začetnika tamburaške glazbe Paje Kolarića, koji je svoj kratki životni vijek proveo kao pjevač, svirač, skladatelj, tekstopisac, političar i filantrop. Značajno je njegovo zalaganje za promicanje hrvatskoga jezika, a uz Petra Preradovića, Stanka Vraza i ostale mlade umjetnike i književnike, hrvatskim je jezikom nastojao marginalizirati mađarizaciju i germanizaciju, i to poglavito u kulturnim i umjetničkim ustanovama.

Naime, upravo je 200-ta obljetnica rođenja Paje Kolarića bila povod u osmišljavanju i provođenju projekta koji će na interdisciplinaran način prikazati čitavo jedno razdoblje u kojemu je živio i djelovao. S obzirom da je Akademija za umjetnost i kulturu u Osijeku jedina u široj regiji koja spaja umjetnost i znanost, ovim je povodom je okupljen organizacijski tim umjetnika, nastavnika, znanstvenika te drugih, koji su svatko iz svoga područja preporučili aktivnost ili temu kojom će se baviti.

Utjecaji projekta „Dani Paje Kolarića" jesu sljedeći:

1. Javnosti će biti promoviran povijesni značaj i kulturno nasljeđe rada i života Paje Kolarića
2. Javnost će promijeniti svijest o važnosti očuvanja kulturne baštine
3. Zaštititi će se arhaične vrijednosti umjetnosti 19. stoljeća kroz suvremene umjetničke izričaje mladih umjetnika
4. Stvoriti će se turistički proizvod kroz prezentaciju osječkih povijesnih osoba te glazbene i kulturne baštine.

Uzimajući u obzir da će se sve projektne aktivnosti prezentirati kroz medije, plakate i digitalne platforme, kao i činjenicu da će javnost imati mogućnost biti uključena u programe putem live streaminga, projektni je tim procijenio da će ovaj projekt imati posredan utjecaj na oko 100.000 ljudi koji će se ovim putem u isti uključiti.

Općenito o životu i radu Paje Kolarića

Pajo Kolarić je začetnik tamburaške glazbe, a rođen je 1821. godine u Osijeku. U gradu je djelovao kao gradski senator, narodni zastupnik i ravnatelj Osječke štedionice, a 1871. godine godine dobio je saborski mandat. Cijeli život radio je na promicanju hrvatske riječi u glazbenom i javnom životu. Zasluga je Paje Kolarića da se sa svjetovne pozornice u Osijeku čuje hrvatska riječ, a predvodio je i prvu kazališnu diletantsku družinu u kojoj se glumilo i na hrvatskom jeziku. 1847. godine osnovao je prvi građanski tamburaški zbor u Hrvatskoj i počeo skladati za tambure te postao utemeljiteljem organiziranog sviranja tambure u Hrvatskoj, a Osijek učinio tamburaškim srcem cijele zemlje. Skladao je na vlastite i narodne tekstove te stvarao tzv. slavonske varoške pjesme, a iste žive i danas zahvaljujući notnim zapisima njegovog suvremenika i prijatelja, Franje Kuhača. Oporučno je sav imetak ostavio za prosvjetne i dobrotvorne svrhe te ostao vječno zapamćen kao značajan glazbenik u povijesti grada (Miholić, 2009.).

Javnosti je općepoznato da se često u govoru o Slavoniji dotičemo tamburaške glazbe i tamburice. Manje je poznato kako je Osječanin Pajo Kolarić začetnik hrvatske tamburaške glazbe. Godine (2021.) obilježavala se 200. godina od njegova rođenja.

Program je bio raznolik, ispunjen koncertima, predstavama, izložbama, radionicama i glazbeno - scenskim šetnjama. Unutar programa je održan i Međunarodni interdisciplinarni umjetničko - znanstveni skup Pajo Kolarić i njegovo doba što dodatno pojačava naglasak na interdisciplinarnosti ovoga događaja.

Naime, Akademija za umjetnost i kulturu u Osijeku jedinstvena je institucija u Hrvatskoj i šire, budući da objedinjuje i umjetnost i znanost. Svih šest odsjeka (Odsjek za glazbenu umjetnost, Odsjek za instrumentalne studije, Odsjek za kazališnu umjetnost, Odsjek za kreativne tehnologije, Odsjek za kulturu, medije i menadžment te Odsjek za vizualnu i medijsku umjetnost) su sudjelovali u ovome događanju na

način da svatko iz svoga segmenta umjetnosti, kulture i znanosti doprinosi stvaranju snažnije vidljivosti ne samo Paje Kolarića nego života u Osijeku sredinom i u drugoj polovici 19. stoljeća.

Ciljevi projekta i ciljna javnost

Kako navodi Perić i Martić, „provedba projekta započinje planiranjem - vremena, troškova, resursa te aktivnosti“ (M. Perić, 2013.). Sastavljen program iziskivao je usku i kvalitetnu suradnju niza dionika, budući da se radilo uistinu o vrlo raznolikom području s nizom sudionika koje je valjalo dobro koordinirati. Svaki projekt, pa tako i ovaj, definiran je ciljevima te isporukom, vremenskim trajanjem i proračunom. Općenito govoreći, procesi realizacije odnose se na grupu procesa temeljem kojih se izvršava posao, koji je definiran u planu upravljanje projektom te se upravo samim time ostvaruju ciljevi projekta.

Projektni tim treba definirati i izabrati „one procese koji su neophodni za realizaciju određenog projekta te ova grupa procesa zahtijeva koordinaciju ljudskih i drugih resursa, kao i integraciju i izvršavanje projektnih aktivnosti u skladu sa planom za upravljanje projektima“ (R. Avlijaš, 2011.).

Tablica 1. Opći i specifični ciljevi projekta „Dani Paje Kolarića“.

Opći cilj projekta	Promovirati umjetnost i kulturu 19. stoljeća na osnovu života i rada Paje Kolarića kroz programe Akademije za umjetnost i kulturu u Osijeku, tijekom travnja i svibnja 2021. godine.
Specifični ciljevi projekta	1. Informirati javnost i promovirati povijesni značaj i kulturno nasljeđe rada Paje Kolarića za Osijek, Slavoniju i Hrvatsku. 2. Zaštititi arhaične vrijednosti umjetnosti 19. stoljeća kroz suvremene umjetničke izričaje mladih umjetnika. 3. Stvoriti novi turistički proizvod kroz prezentaciju osječkih povijesnih osoba te glazbene i kulturne baštine.

Izvor: autorski podaci, 2024.

Za sam predprogram osmišljeno je nekoliko aktivnosti koje su imale za cilj unaprijed najaviti projekt čiji program će se dogoditi mjesecima kasnije. Naime, upravo analiza vremena u mrežnom planu, kako ističe Krpan, ima zadatak svakoj od prepoznatih aktivnosti utvrditi vrijeme trajanja odnosno vrijeme izvršenja, a upravo se na temelju tih podataka izračunava ukupno očekivano vrijeme trajanja projekta kao i eventualne vremenske rezerve u njegovoj realizaciji (Krpan, 2021.).

Kada je riječ o dionicima u provedbi projekta, onda se misli na sve fizičke osobe, kao i na poduzeća, organizacije, skupine, institucije, udruge građana i sl., čiji su interesi vezani uz dotični projekt, a koji mogu, pozitivno ili negativno, utjecati na sam razvoj projekta. Kako navodi Krpan, „primarni dionici su oni na koje projekt u konačnici neposredno utječe, bilo na pozitivan (korisnici) ili negativan način (npr. prisilno raseljene osobe, vlasnici zemljišta kojim prolazi prometnica i sl.)“, dok su ključni dionici „oni koji mogu značajno utjecati na projekt ili koji su važni za uspjeh projekta“ (Krpan, 2021.). Analizom dionika na primjeru projekta „Dani Paje Kolarića“, utvrdile su se sve interesne skupine odnosno grupe i pojedinci koji mogu utjecati na provedbu ovoga projekta, ali i na koje ovaj projekt može utjecati, a tu se, prije svega misli na

izvođače, javnost (građane), medije, znanstvene (akademske) zajednice i druge interesente u području kulture.

Aktivnosti projekta

Upravljanje projektom nije jednostavan zadatak, obzirom da je riječ o složenom procesu, koji zahtijeva primjenu određenih znanja, vještina, tehnika i dr. Dakle, proces upravljanja projektom obuhvaća čitav „niz djelatnosti i aktivnosti koje doprinose ostvarenju konačnih rezultata, a kako bi se ostvarili ciljevi i očekivani rezultati projekta, potrebno je voditi i upravljati projekt na način koji odgovara njegovim značajkama i planiranim aktivnostima“ (D. Ribić, 2023.). Slijedom navedenog, što se tiče vremenskog rasporeda aktivnosti navedenog projekta, potrebno je spomenuti vremenski slijed svake pojedine aktivnosti ovoga projekta.

Aktivnosti projekta „Dani Paje Kolarića“ jesu sljedeće:

1. Likovna izložba
2. Matineja, glazbeno-scenska šetnja kroz vrijeme
3. Vokalno-instrumentalni koncert
4. Glazbene radionice.

Tijekom travnja i početkom svibnja 2021. godine, građani Osijeka bili su upoznati s najavom projekta „Dani Paje Kolarića“ kroz prikazivanje kratkog promidžbenog filma na društvenim mrežama i lokalnim televizijskim postajama, vožnjom u oldtimer tramvaju (u kojem su studenti preddiplomskog studija glume i lutkarstva Odsjeka za kazališnu umjetnost Akademije za umjetnost i kulturu u Osijeku pripovijedali priču o Paji Kolariću) . Također su se organizirala i kušanja delicija čiji recepti potiču iz 19. stoljeća u osječkim ugostiteljskim objektima.

Prva aktivnost iz predprograma bio je Natječaj za novu kompoziciju namijenjenu tamburaškom orkestru koji su priredili i organizirali Akademija za umjetnost i kulturu i Hrvatsko društvo skladatelja. Cilj natječaja bio je prvenstveno doprinos stvaranju nove umjetničke glazbe koja je namijenjena tamburaškim orkestrima. Kompozicija je trebala biti skladana u čast Paji Kolariću te je ista bila praizvedena na Danima Paje Kolarića koji su bili upriličeni u tjednu od 20. do 29. svibnja 2021. godine u Osijeku. Uvjeti natječaja definirali su kako kompozicija treba biti trajanja od 4,00 do 6,00 minuta; ne smije biti prethodno objavljena, nagrađivana ili javno izvedena; treba biti na visokoj umjetničkoj razini koja će u potpunosti prikazati zvukovne mogućnosti velikoga tamburaškog orkestra; partitura treba sadržavati 10 dionica i to: bisernicu 1 (raspon tonova e1-a3/zvuči oktavu više od zapisanoga), bisernicu 2 (raspon tonova e1-a3/zvuči oktavu više od zapisanoga), bisernicu 3 (raspon tonova e1-a3/zvuči oktavu više od zapisanoga), brač 1 (raspon tonova fis-a2), brač 2 (raspon tonova fis-a2), brač 3 (raspon tonova fis-a2), E brač (raspon tonova cis-e2), čelo (raspon tonova FIS-a1), bugariju (raspon tonova e-e2), berde (raspon tonova FIS1-g/zvuči oktavu dublje od zapisanoga); partitura može sadržavati dionice za soliste na instrumentima ili pjevače te skladatelj može prijaviti maksimalno jednu skladbu na ovaj natječaj.

Organizatori natječaja imenovali su peteročlano prosudbeno povjerenstvo koje je bilo sastavljeno od eminentnih domaćih kompozitora i pedagoga. Kompozicije je valjalo poslati najkasnije do 15. veljače 2021. godine do 12 sati. Rezultati Natječaja bili su objavljeni 1. ožujka 2021. godine na mrežnim stranicama AUK-a i HDS-a.

Na natječaj je pristiglo ukupno šest kompozicija. Prosudbeno je povjerenstvo u sastavu: Davor Bobić, Massimo Brajković, Ivo Josipović, Sanda Majurec i Mladen Tarbuk skladbu *Slavonski impromptu* autora Jurice Hrenića ocijenilo s najviše bodova čime je ona postala pobjednička kompozicija ovoga natječaja. Pobjednička skladba je bila praizvedena na Danima Paje Kolarića, 28. svibnja 2021. godine u Osijeku.

Sljedeća aktivnost organizirana je u suradnji Odsjeka za kreativne tehnologije, Akademije za umjetnost i kulturu u Osijeku i Udruženja obrtnika Osijeka. Krojači grada Osijeka u svojim su krojačkim radionicama šivali replike kostima odjeće 19. stoljeća. Sašiveni kostimi koristili su se u okviru različitih programa projekta Dani Paje Kolarića, a nakon održanoga projekta, ostaju u fundusu Akademije za korištenje Odsjeka za kazališnu umjetnost, odnosno studentima glume i lutkarstva.

Sam program obilježavanja Dana Paje Kolarića, započeo je 20. svibnja 2021. godine u Muzeju Slavonije u Osijeku, postavom slika i predmeta iz vremena Paje Kolarića. Pajo Kolarić prvi je u Hrvatskoj i slavenskom Jugu naše narodno glazbalo tamburu, prenio sa sela u grad. Osnovao je prvi povijesno potvrđen tamburaški sastav te tako profesionalizirao višestoljetnu tradiciju slavonskog tamburaškog glazbovanja. Učinio je Osijek središtem hrvatske i svjetske tamburaške glazbe. Tambura Paje Kolarića, prema dosadašnjim spoznajama, najstarija je sačuvana tambura u Hrvatskoj. Pronađena je 1951. godine kod osječkog postolara Šime Kolarića. Iste su godine Julije Njikoš i Viktor Peras tamburu, kao simbol tamburaškog prvaštva, predali na čuvanje najistaknutijem tamburaškom skladatelju toga vremena, dr. Josipu Andriću. Godine 1993. Julije Njikoš je tamburu poklonio Muzeju Slavonije gdje se i danas čuva.

Program je nastavljen Likovnom izložbom koja je postavljena u Galeriji Knifer. Student druge godine diplomskog studija, Josip Jelenčić s Odsjeku za vizualnu i medijsku umjetnost Akademije za umjetnost i kulturu u Osijeku postavio je likovnu izložbu na temu Glazba u slikarstvu. Otvorenje izložbe održano je 22. svibnja 2021. godine u 19 sati, a omogućeno je i virtualno praćenje otvorenja izložbe i pregledavanje postava.

Zatim je uslijedila Matineja, Glazbeno-scenska šetnja kroz vrijeme. Studenti treće godine preddiplomskog studija glume i lutkarstva Odsjeka za kazališnu umjetnost govorilo je tekstove književnika 19. stoljeća, a studenti tambura s Odsjeka za instrumentalne studije sviralo je i pjevalo starogradske pjesme Paje Kolarića, odjeveni u kostime 19. stoljeća. Građani su bili pozvani šetati osječkim šetališnim zonama odjeveni u odjeću nalik onoj kakva se nosila u Osijeku prije 200 godina te uz stručno vodstvo posjetiti sve zanimljive lokacije vezane uz Paju Kolarića. U ovoj aktivnosti partneri Akademije za umjetnost i kulturu u Osijeku su članovi HKUD-a Osijek 1862 te Turistička zajednica Grada Osijeka.

Velikim koncertom Hrvatskoga komornoga orkestra pod ravnanjem dirigenta Davora Kelića te solista Marija Zbiljskog (bisernica), Vice Zirduma (bisernica) i Darka Čuvidića (brač) održana je treća večer programa, u prekrasnom holu Rektorata Sveučilišta Josipa Jurja Strossmayera. Između ostaloga, izvedene su dvije skladbe naših profesora, Davora Bobića: Concertino Strossmayer za tamburu i gudače i Tihomira Ranogajca: Grimizni svirači za dva solista na bračevima i orkestar.

U okviru programa 25. svibnja, održane su i glazbene radionice u Osnovnoj školi Frana Krste Frankopana Osijek, III. gimnaziji Osijek i Glazbenoj školi Franje Kuhača u Osijeku. Glazbene radionice Stvaralaštvo i djelovanje Paje Kolarića kao

doprinos hrvatskoj kulturnoj baštini, održali su studenti Diplomskog studija Glazbena pedagogija Odsjeka za glazbenu umjetnost Akademije za umjetnost i kulturu u Osijeku uz mentore.

U nastavku programa, u srijedu, 26.5., održao se Međunarodni interdisciplinarni umjetničko-znanstveni skup *Pajo Kolarić i njegovo doba* uz suorganizaciju Hrvatske akademije znanosti i umjetnosti. Međunarodni interdisciplinarni umjetničko-znanstveni skup okupio je umjetnike i znanstvenike koji su s glazbenim, scenskim, društvenim i povijesnim temama upoznali građane s kulturom, umjetnošću i stilom života u vrijeme 19. stoljeća. Plenarni izlagači bili su znanstvenici koji se bave tematskim područjima Skupa.

Pajo Kolarić je svoj kratki životni vijek proveo kao pjevač, svirač, skladatelj, tekstopisac, političar, gospodarstvenik i filantrop. Uz Petra Preradovića, Stanka Vraza i ostale mlade umjetnike i književnike, nastojao je promicati hrvatski jezik. Grad Osijek zadužio je osnivanjem Prve gradske štedionice (uz biskupa Josipa Jurja Strossmayera), prve amaterske kazališne družine i prvog građanskog amaterskog tamburaškog sastava, a tamburašku javnost skladbama koje je napisao na vlastite ili slavonske tekstove. Ovim umjetničko-znanstvenim skupom potaknulo se zainteresiranu javnost na revalorizaciju njegovog lika i djela, a kroz znanstveno promišljanje o temama vezanim uz djelovanje Paje Kolarića.

Vokalno-instrumentalni koncert održan je u nastavku programa, u prostoru Arheološkog muzeja u Osijeku. *Golden Strings Orchestra* i studenti tambura zagrebačke Akademije izvodili su pjesme Paje Kolarića i ostala prigodna tamburaška djela. Na koncertu je bila i praizvedba nagrađene skladbe koja je skladana u čast Paji Kolariću.

U svrhu popularizacije instrumenta tambure, studenti tambura Akademije za umjetnost i kulturu uz mentora, Marka Sesara održali su tamburaške radionice s različitim dobnim skupinama djece. Radionice su se održale 27. svibnja 2021. u prostoru Slavonskog tamburaškog društva „Pajo Kolarić“ u Osijeku.

Završna večer središnje faze projekta zaključena je Biografskom večeri. Kako bi građanima približili znamenitu povijesnu ličnost studenti treće godine Preddiplomskog studija glume i lutkarstva Odsjeka za kazališnu umjetnost uprizorili su scene iz života Paje Kolarića.

Dramsko-scenski prikaz je održan 29. svibnja 2021. u dvorani Kulturnog centra u Osijeku. Ovom večeri završena je središnja faza projekta, no ne i sam projekt. U završnoj fazi projekta održale su se još tri važne aktivnosti koje su ujedno i krajnji proizvodi cjelokupnog projekta. Naime, tijekom rujna i listopada sniman je dokumentarno-igrani film *Sanjar s tamburom* o životu i radu Paje Kolarića i njegovih suvremenika. Prikupljanje materijala trajalo je od prosinca 2020. do svibnja 2021. godine te snimanje i montaža od lipnja-prosinca 2021. godine.

U prosincu 2021. U produkciji Croatia Recordsa snimljen je nosač zvuka sa tamburaškom glazbom koju izvodi *Golden strings orchestra*. Glazbeni materijal za ovaj nosač zvuka nije samo pokazatelj duge tradicije umjetničkog muziciranja na tamburama, koja je neprekidna od Paje Kolarića, nego to je čvrst dokaz kako je ideja Paje Kolarića o skupnom muziciranju na tamburama itekako utemeljena te i danas živi bogatim glazbenim životom.

Svečana premijera filma te promocija CD-a i zbornika radova upriličene su 25. travnja 2022. godine u velikoj dvorani Vikarijata u Osijeku. Ovaj događaj ujedno je

i zaokružio projekt Dani Paje Kolarića. Važno je napomenuti da su se financijskom podrškom u ovaj Projekt uključili; Grad Osijek, Osječko-baranjska županija, Ministarstvo kulture i medija, Akademija za umjetnost i kulturu u Osijeku te sponzori i donatori. Predstavnici gore navedenih institucija i privatnih tvrtki uz brojne građane nazočili su premijeri filma i promociji CD-a te zbornika radova.

ZAKLJUČNA RAZMATRANJA

Ovaj projekt zamišljen je interdisciplinarno što znači promatrati određenu ideju kroz različita umjetnička polja i znanstvene grane te dati posebnu vizuru cjelovitosti ove teme. Veliki je angažman studenata različitih odsjeka Akademije u samoj pripremi, realizaciji i sudjelovanju u svim aktivnostima ovoga projekta. Upravo je širina Akademije u smislu umjetnosti i znanosti omogućila ovakav pristup. Kako osječko sveučilište nosi naziv Josipa Jurja Strossmayera, upravo je to bila egida pod kojom je osmišljen ovaj, a i budući projekti koji će se interdisciplinarno i fenomenološki baviti poznatim Osječanima / Slavoncima 19. stoljeća, koji su bili suvremenici biskupa Josipa Jurja Strossmayera ili je on na neki način utjecao na njihove živote. Važno je napomenuti da je ovaj projekt otvorio vrata mnogim daljnjim aktivnostima i projektima. Dokumentarno-igrani film Sanjar s tamburom u Produkciji 12:21 omogućio je snimanje serijala Sanjari ilirskog preporoda koji će se emitirati u jesen 2023. na nacionalnoj hrvatskoj televiziji. Nosač zvuka Tambura, ljubav i domovina prezentiran je hrvatskoj dijaspori širom svijeta, a zbornik radova Pajo Kolarić i njegovo doba omogućuje budućim generacijama relevantnu literaturu u daljnjim istraživanjima o Paji Kolariću, njegovim suvremenicima kao i o vremenu u kojem su živjeli. Projekt je bio vrlo zahtjevan i bogat, a provedba projekta otežana zbog vremena epidemije Korona virusa, no isto tako ovaj projekt je pokazao da se uz dobar tim i odličnu organizaciju mogu provesti svi zadani ciljevi.

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CULTURAL IDENTITY BRANDING ON THE EXAMPLE OF DANI PAJE KOLARIĆA - A CASE STUDY

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Summary: *This paper deals with the presentation of a case study of Dani Paje Kolarića on the topic of cultural identity branding and specifics of the implementation as part of cultural identity branding activities by the Academy of Arts and Culture and the*

local community and the City of Osijek are presented. This paper presents the theoretical determinants of culture and cultural policy, followed by the specifics of branding. The methodological framework refers to the presentation of the interdisciplinary project "Dani Paje Kolarića", through the specifics related to the formation of the project team, setting the main and specific goals of the project, defining the target audience or stakeholders, as well as planning and implementing project activities. The main goal of this research is to promote the art and culture of the 19th century based on the life and work of Pajo Kolarić through the programs of the AUK-Os, during April and May 2021. It includes informing the public about the historical significance and cultural heritage of Pajo Kolarić's work for his homeland, protecting the archaic value of 19th century art through contemporary artistic expressions of young artists, and creating a new tourist product through the presentation of Osijek's historical figures and musical heritage. Through art exhibitions, music-stage events, vocal-instrumental concerts and music workshops, the interdisciplinarity of the project was evoked and thus the goals of the project are realized. This work will show how this interdisciplinary approach to the entire project affects the public, which will change the awareness about preserving cultural heritage, because the historical and cultural significance of the work will be promoted through the project. The implementation of the interdisciplinary project will also be presented in detail, since it was extremely successful and can serve as an example of good practice in how cultural heritage, tradition, music, performing and applied arts and science are united in the creation of a cultural identity. Due to its characteristics, the project has largely served as an educational backbone for the younger generations who are currently connected with popular and current knowledge, while on the other hand, they do not possess knowledge of the values of cultural heritage. By approaching a historical topic in the way it is presented, this project arouses the interest of the younger population, which was ultimately the goal of the entire project. The implementation of this project resulted in the fulfillment of the set main and specific goals, and it becomes a good basis for research and implementation of projects on the topic of other famous Osijek / Slavonians of the 19th century. Finally, this project was quite demanding, but also rich. The Corona virus epidemic made the implementation of this project even more difficult, but the great involvement of students from different departments of the Academy in the very preparation, implementation and participation in all activities of this project and the breadth of the Academy in terms of art and science enabled this approach and opened the door to many further activities and projects.

Keywords: *branding, interdisciplinarity, cultural identity, project management, event management.*

JEL classification: *Z1, M37*

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

UTICAJ BDP-A NA SPOLJNU TRGOVINU BOSNE I HERCEGOVINE SA FOKUSOM NA ROBNU RAZMJENU SA ZEMLJAMA EVROPSKE UNIJE

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Sažetak: *Bosna i Hercegovina je zemlja u tranziciji sa ekonomijom koja više uvozi nego što izvozi, no značaj izvoza je ključan za održiv ekonomski rast. Ovaj rad istražuje uticaj bruto domaćeg proizvoda (BDP) na spoljnu trgovinu Bosne i Hercegovine. Rad je fokusiran na istraživanje robne razmjene Bosne i Hercegovine sa zemljama Evropske unije. Analiza obuhvata period od 2009. do kraja 2022. godine kako bi se sagledalo dugoročno kretanje. Glavni cilj istraživanja ovog rada je da se utvrdi postojanje statistički značajnog uticaja BDP-a na izvoz i uvoz zemlje. Koristeći t-test takođe se analizira vrijednost izvoza/uvoza između zemalja Evropske unije i ostalih zemalja. Rezultati istraživanja ovog rada pružaju uvid u trendove kretanja navedenih promjenljivih tokom analiziranog perioda. Na temelju dobijenih rezultata, daju se konkretne preporuke za povećanje izvoza Bosne i Hercegovine. Rad doprinosi razumijevanju ekonomske dinamike ove zemlje, Bosne i Hercegovine, u trgovinskom kontekstu, ističući važnost strategija za unapređenje izvoza i jačanje ekonomske stabilnosti.*

Ključne riječi: *robna razmjena, bruto domaći proizvod, uvoz, izvoz, stabilnost.*

JEL klasifikacija: *E01, F10, F14*

UVOD

Uvođenje Bosne i Hercegovine (BiH) u globalno tržište nosi sa sobom složene ekonomske dinamike i izazove, posebno u kontekstu trgovinske aktivnosti. Kao zemlja u tranziciji, BiH se suočava sa specifičnim izazovima i mogućnostima koji proizilaze iz njene ekonomske strukture, karakterizovane većim uvozom nego izvozom. Međutim, ključna uloga izvoza u postizanju održivog ekonomskog rasta ne može biti zanemarena. Ovaj rad temelji se na pretpostavci da je bruto domaći proizvod (BDP)

ključni pokazatelj ekonomske aktivnosti i razvoja, te da ima značajan uticaj na spoljnu trgovinu države. Fokusirajući se posebno na robnu razmjenu sa zemljama Evropske unije, istražuje se kako varijacije u BDP-u utiču na dinamiku uvoza i izvoza tokom četrnaestogodišnjeg perioda (od početka 2009. do kraja 2022. godine).

Analizom ovog perioda, cilj istraživanja je sagledati dugoročne trendove i utvrditi da li postoji statistički značajan uticaj BDP-a na izvoz i uvoz BiH. Korištenjem t-testa, takođe se vrši poređenje vrijednosti izvoza i uvoza između zemalja Evropske unije i drugih zemalja kako bi se bolje razumjeli ti odnosi i njihov uticaj na trgovinsku dinamiku zemlje.

Rezultati ovog istraživanja pružaju dragocjen uvid u promjenljive tokove analiziranog perioda, što omogućava izvlačenje relevantnih zaključaka i preporuka za unapređenje trgovinskih performansi BiH. Ovi nalazi ne samo što doprinose teorijskom razumijevanju ekonomske dinamike zemlje, već nude i konkretne smjernice za implementaciju strategija koje bi mogle povećati izvoznu sposobnost i doprinijeti jačanju ekonomske stabilnosti ove države u kontekstu globalne trgovine.

Robna razmjena ima ključni značaj za ekonomsku stabilnost i razvoj BiH, posebno imajući u vidu njen status kao zemlje u tranziciji. Kao što je već pomenuto, BiH je više sklona uvozu nego izvozu, što naglašava važnost efikasnog upravljanja trgovinskim aktivnostima kako bi se osigurao održiv ekonomski rast. Ovo je posebno bitno imajući u vidu da je trgovina jedan od glavnih pokretača rasta i prosperiteta u savremenim ekonomijama, te da je pravilno balansiranje uvoza i izvoza ključno za izgradnju konkurentne privrede.

Pored toga, robna razmjena sa zemljama Evropske unije ima dodatnu važnost za BiH, s obzirom na njenu aspiraciju za članstvo u Evropsku uniju i postojeće trgovinske sporazume. U tom kontekstu, povećanje izvoza u zemlje Evropske unije ne samo što može donijeti ekonomske koristi u vidu povećanja prihoda i otvaranja novih tržišta, već može i olakšati proces prilagođavanja evropskim standardima i regulativama. Što je ključno za integraciju u evropsko tržište. Stoga, razumijevanje dinamike robne razmjene sa zemljama Evropske unije postaje od suštinskog značaja za planiranje dugoročnih ekonomskih strategija BiH i njeno približavanje evropskim ekonomskim normama.

Ovaj uvod postavlja osnovne premise istraživanja i njegovog značaja u kontekstu trgovinskih aktivnosti BiH, kao i potrebu za analizom uticaja BDP-a na spoljnu trgovinu, sa posebnim fokusom na razmjenu sa zemljama Evropske unije. U narednim pasusima, biće predstavljan relevantni teorijski okvir, detaljnije će se predstaviti metodologija istraživanja i biće predstavljeni rezultati koji će poslužiti kao temelj za formulisanje preporuka za unapređenje dinamike uvoza i izvoza u narednom periodu.

PREGLED LITERATURE

Spoljna trgovina je značajna za svaku zemlju u svijetu, a posebno za manje i niže razvijene ekonomije (Krugman & Obstfeld, 2009). Bosna i Hercegovina je mala otvorena ekonomija u kojoj spoljna trgovina ima izuzetnu važnost za njen ekonomski razvoj, a jedan od njenih najvažnijih trgovinskih partnera je Republika Hrvatska (Krajišnik, 2013). Važno je napomenuti da je spoljnotrgovisnki režim BiH vrlo liberalan jer je ova država napravila značajne reforme u spoljnotrgovinskoj politici donošenjem različitih zakona vezanih za trgovinsku liberalizaciju, čime je omogućen vrlo povoljan režim za uvoz različitih proizvoda (Lambeta, 2021).

Oblast spoljne trgovine bila je tema mnogih priznatih ekonomskih stručnjaka koji su analizirali uticaj obima i strukture spoljne trgovine na ekonomski razvoj, kao i uticaj trgovinskih politika na otvorenost i integrisanost privrede. Lambeta (2021) navodi da ne postoji potpuna saglasnost naučne zajednice o pozitivnoj vezi između spoljne trgovine i ekonomskog blagostanja, ali da se može konstatovati da najveći broj istraživanja potvrđuje postojanje pozitivne veze iako navedena veza uzima različite vrijednosti, što je uslovljeno postojanjem različite strukture, zakonske regulative i okolnosti u svakoj pojedinačnoj zemlji.

U uslovima globalizacije svjetske ekonomije, uključivanje zemalja u međunarodne trgovinske tokove je jedan od ključnih ekonomskih preduslova ekonomskog rasta i razvoja što je posebno značajno za zemlje u razvoju čije je učešće u svjetskoj trgovini još uvijek relativno skromno (Behara & Jovičić, 2021). Nacionalne ekonomije se suočavaju sa izazovom iznalaženja načina za povećanje proizvodnje i izvoza koji treba da omoguće ostvarivanje stabilnog ekonomskog rasta tokom vremena (Marjanović & Domazet, 2018). rezultati dostupnih empirijskih istraživanja potvrđuju postojanje pozitivnog uticaja otvorenosti ka međunarodnoj trgovini i ekonomskom rastu zemalja u regionu (Tahir & Azid, 2015).

Bosna i Hercegovina, uslijed visoke otvorenosti, ali slabe razvijenosti privrede, te niske konkurentnosti, bilježi kontinuiran deficit u spoljnotrgovinskoj razmjeni sa svijetom (Šušnjar Čanković & Agić, 2019). Često se uvoze i one vrste robe koje mogu biti proizvedene u zemlji, pa prema dostupnim podacima, uvoze se velike količione vode za piće, sokovi, mlijeko i mliječni proizvodi, meso i mesne prerađevine, tekstilni proizvodi i drugo. Ova činjenica ukazuje na potrebu primjene politike supstitucije uvoza, imajući na umu da ona ima prednosti, ali i određene nedostatke (Salvadore, 2009).

I pored priznanja da je spoljnotrgovinski deficit ključni problem privrede, kreatori ekonomske politike nisu pokazali dovoljno sluha za dobronamjerna upozorenje pojedinih ekonomskih stručnjaka. Nerazvijen sistem necarinskih mjera, nagla liberalizacija domaćeg tržišta, potpisivanje preferencijalnih trgovinskih sporazuma sa zemljama iz okruženja, brz rast domaće potrošnje i zarada doprinijeli su progresivnom širenju deficita u robnoj razmjeni sa inostranstvom (Petrović, 2005). Sam po sebi nameće se zaključak da bi nivo konkurenstnosti države morao da bude mnogo viši kako bi doprinijeo uravnoteženju platnog bilansa kao jednog od elementarnih makroekonomskih ciljeva svake zemlje (Madžar, 2014).

Stepen zavisnosti pojedinih zemalja od spoljne trgovine ne mjeri se samo po učešću izvoza i uvoza u domaćem proizvodu, nego je velikim dijelom zavisan od razvijenosti ukupne privredne strukture određene zemlje. Monokulturne privrede su pretjerano uključene u svjetsku privredu i pretjerano zavisne od nje, pa to negativno utiče na njihove privrede. To je još jedan dokaz da je stepen uključenosti i otvorenosti prema svjetskoj privredi specifičan za neku zemlju (Unković, 2010).

Što se tiče izlaska na svjetsko tržište, za mnoge domaće ekonomije situacija je prilično nepovoljna zbog niske konkurentnosti, ali i brojnih necarinskih barijera koje otežavaju izvoz na mnoga tržišta. Uprkos tome što je određeni broj carinskih barijera regulisan u okviru Svjetske trgovinske organizacije, neke od njih se često zloupotrebljavaju (Bijelić, 2008). s obzirom na zemlje u tranziciji, kao što je i Bosna i Hercegovina, karakteriše obilje jeftine radne snage i bogatstvo prirodnim resursima, može se

očekivati da će izvoz biti uglavnom sačinjen od proizvoda u čijoj proizvodnji dominira upotreba prostog rada i prirodnih resursa (Boljanović, 2013).

Iako je Evropska unija najznačajniji trgovinski partner zemalja Zapadnog Balkana, saradnja sa Kinom u prethodnoj deceniji bilježi rastući trend i u pogledu investicija i u pogledu trgovine (Jaćimović, Dragutinović Mitrović, Bjelić, Tianping, & Rajković, 2018).

METODOLOGIJA ISTRAŽIVANJA

Istraživanje je sprovedeno sa ciljem da se analizira uticaj bruto domaćeg proizvoda (BDP) na spoljnu trgovinu Bosne i Hercegovine, sa fokusom na robnu razmjenu sa zemljama Evropske unije. Sa ciljem sprovođenja cjelovite analize, istraživanje je podijeljeno na tri dijela. U prvom dijelu analiziran je trend kretanja vrijednosti BDP-a, uvoza i izvoza Bosne i Hercegovine u periodu od 2009. do kraja 2022. godine. Ova analiza omogućiće identifikaciju trendova, kao što su rast, rad ili stabilnost ekonomskih pokazatelja, što će omogućiti bolje razumijevanje ekonomske dinamike zemlje. U drugom dijelu sprovedena je regresiona analiza sa ciljem utvrđivanja veze između bruto domaćeg proizvoda i uvoza i izvoza. Sprovođenjem regresione analize utvrdiće se veza između nezavisne promjenljive (BDP) i zavisnih promjenljivih (uvoz i izvoz). Treći dio istraživanja obuhvata analizu pomoću t-testa uparenih uzoraka sa izračunavanjem srednje vrijednosti i standardne devijacije. Ovaj dio istraživanja sproveden je sa ciljem da se dobiju informacije o postojanju statistički značajne razlike između robne razmjene BiH sa zemljama Evropske unije i ostalim zemljama.

U istraživanje je uključeno ukupno sedam promjenljivih i to: bruto domaći proizvod (BDP), uvoz u Bosnu i Hercegovinu (Uvoz - BiH), izvoz iz Bosne i Hercegovine (Izvoz – BiH), uvoz u zemlje Evropske unije (Uvoz – EU), izvoz u zemlje Evropske unije (Izvoz - EU), Uvoz u druge zemlje (Uvoz – DZ) i izvoz u druge zemlje (Izvoz – DZ). Prilikom utvrđivanja veze između bruto domaćeg proizvoda i uvoza, zavisna promjenljiva je Uvoz – BiH, a BDP je nezavisna promjenljiva. U skladu sa tim, prilikom utvrđivanja veze između bruto domaćeg proizvoda i izvoza, zavisna promjenljiva je Izvoz – BiH, a nezavisna promjenljiva je BDP.

Podaci koji su korišteni u istraživanju su godišnji podaci koji obuhvataju period od početka 2009. do kraja 2022. godine. Važno je napomenuti da u trenutku pisanja rada, autorima nisu bili dostupni podaci sa kraja 2023. godine. Podaci o vrijednosti bruto domaćeg proizvoda preuzeti su od Centralne banke Bosne i Hercegovine, dok su podaci o vrijednosti uvoza i izvoza preuzeti od Spoljnotrgovinske komore Bosne i Hercegovine. Podaci su obrađeni pomoću statističkog programa IBM SPSS Statistics Version 26.

Glavno istraživačko pitanje u ovoj studiji je da li bruto domaći proizvod ima statistički značajan uticaj na uvoz, odnosno izvoz Bosne i Hercegovine. Da bi se došlo do odgovora na navedeno pitanje, sprovedena je regresiona analiza. Nakon toga, pomoću t-testa analizirano je da li postoji razlika u robnoj razmjeni BiH sa zemljama Evropske unije i odtalim zemljama. U skladu sa tim, predstavljeni su i rezultati istraživanja.

REZULTATI ISTRAŽIVANJA I DISKUSIJA

Pregled makroekonomskih trendova

Praćenje kretanja BDP-a, uvoza i izvoza Bosne i Hercegovine ključno je za razumijevanje makroekonomskih trendova i ukupne ekonomske situacije zemlje. BDP

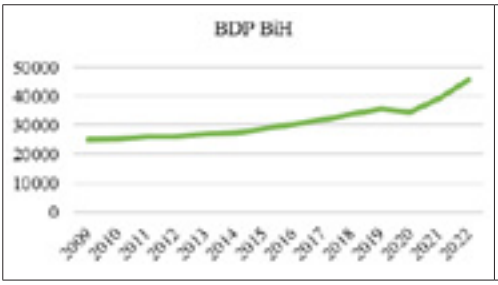
je jedan od najvažnijih pokazatelja ekonomske aktivnosti i prosperiteta društva jer predstavlja ukupnu vrijednost svih dobara i usluga proizvedenih u zemlji tokom određenog vremenskog perioda. Praćenje kretanja BDP-a omogućava analizu rasta ili recesije ekonomije, što je ključno za donošenje politika ekonomske stabilizacije i razvoja.

Uz to, praćenje uvoza i izvoza daje uvid u trgovinsku aktivnost zemlje sa drugim državama i regijama. Uvoz predstavlja količinu dobara i usluga koje zemlja kupuje iz inostranstva, dok izvoz označava količinu dobara i usluga koje zemlja prodaje na međunarodnom tržištu. Ovi podaci ključni su za analizu spoljnotrgovinskog bilansa zemlje i njenog položaja u globalnoj ekonomiji. Npr. visok uvoz u odnosu na izvoz može ukazivati na trgovinski deficit, što može biti izazov za ekonomsku stabilnost.

Sve navedene promjenljive su međusobno povezane i često imaju uzročno-posljedični odnos. Npr. rast BDP-a obično rezultuje povećanom potražnjom za uvozom roba i usluga, dok povećani izvoz može doprinijeti povećanju BDP-a. Zbog toga je važno pratiti navedene pokazatelje zajedno, kako bi se stekao cjelovit uvid u ekonomsku dinamiku zemlje. Osim toga, ovi podaci su od vitalnog značaja za donošenje ekonomskih politika i strategija koje će podržati održiv rast, konkurentnost i prosperitet Bosne i Hercegovine.

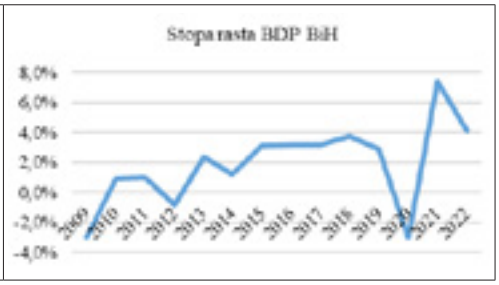
Bruto domaći proizvod Bosne i Hercegovine predstavlja ukupnu vrijednost dobara i usluga proizvedenih u zemlji tokom određenog perioda, odnosno godine. To je ključni pokazatelj ekonomske aktivnosti i prosperiteta zemlje te se koristi za mjerenje i upoređivanje ekonomske performanse sa drugim državama.

Trend kretanja vrijednosti BDP-a Bosne i Hercegovine (u milionima KM) može se sagledati na Grafikonu 1, a trend kretanja stope rasta/pada BDP-a može se sagledati na Grafikonu 2.



Grafikon 1. Trend kretanja BDP-a BiH

Izvor: Izrada autora na osnovu podataka CBBiH



Grafikon 2. Stopa rasta/pada BDP-a BiH

Izvor: Izrada autora na osnovu podataka CBBiH

Na osnovu podataka predstavljenih na Grafikonu 1, može se zaključiti da je vrijednost bruto domaćeg proizvoda BiH uglavnom imala trend rasta u periodu od 2009. do kraja 2022. godine. Izuzetak je samo 2012. godina kada je zabilježeno smanjenje vrijednosti BDP-a.

Na temelju analize kretanja apsolutne vrijednosti BDP-a i stope rasta BDP-a u BiH od 2009. do kraja 2022. godine, može se zaključiti da je ekonomija uglavnom pokazivala trend rasta, iako su evidentni izuzeci poput smanjenja vrijednosti BDP-a u 2012. godini. Međutim, posmatrano kroz prizmu stope rasta, vidljivo je da je ekonomski trend bio promjenljiv, s najnižom stopom rasta u godinama zahvaćenim globalnom

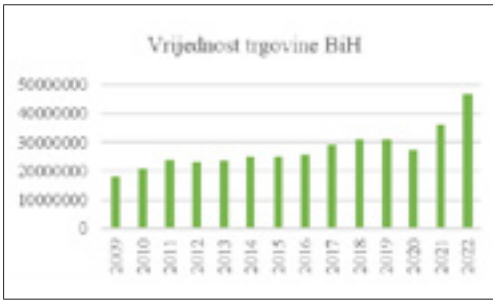
finansijskom krizom i pandemijom Covid-19, dok su najviše stope zabilježene u 2021. godini. Ovi podaci ukazuju na izazove i oscilacije sa kojima se ekonomija BiH suočavala tokom analiziranog perioda. Osim oscilacija u stopama rasta BDP-a, izazovi sa kojima se suočavala ekonomija BiH uključuju i strukturalne probleme, poput visoke nezaposlenosti, nedovoljne konkurentnosti na tržištu, te izazove u pogledu političke stabilnosti i institucionalne efikasnosti.

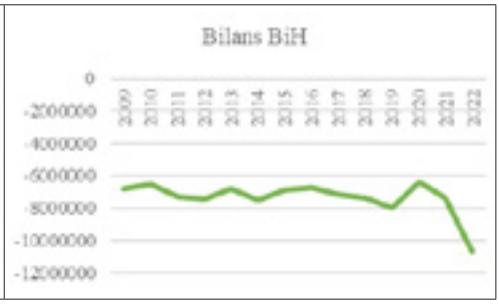
Uvoz Bosne i Hercegovine odnosi se na količinu dobara i usluga koje zemlja kupuje iz inostranstva radi zadovoljavanja domaće potražnje. Ovaj pokazatelj je važan za analizu spoljne trgovine zemlje te može ukazivati na njenu sposobnost zadovoljavanja potreba tržišta i ekonomske otvorenosti.

Izvoz Bosne i Hercegovine predstavlja količinu dobara i usluga koje zemlja prodaje na međunarodnom tržištu. Ovaj pokazatelj je ključan za analizu konkurentnosti zemlje na globalnom tržištu i njenu sposobnost generisanja prihoda putem izvoza. Visok izvoz može biti pokazatelj ekonomske vitalnosti i konkurentnosti zemlje na globalnom nivou.

Veoma je važno razumjeti analizu vrijednosti uvoza i izvoza, jer ti podaci pružaju uvid u trgovinske aktivnosti zemlje i njen ekonomski položaj na globalnom tržištu. Takođe, analiza omjera između vrijednosti uvezenih i izvezenih roba i usluga ključna je za procjenu trgovinskog deficita ili suficita, te dugoročne održivosti spoljnotrgovinskog bilansa BiH. Ovi podaci mogu oslikati sposobnost zemlje da zadovolji domaću potražnju, izdrži konkurenciju na međunarodnom tržištu te potencijalno identifikuje sektore u kojima je potrebno unaprijediti izvoznu sposobnost.

Grafikon 3 oslikava ukupnu vrijednost trgovine BiH u periodu od 2009. do kraja 2022. godine, dok Grafikon 4 prikazuje trgovinski bilans države tokom istog perioda.





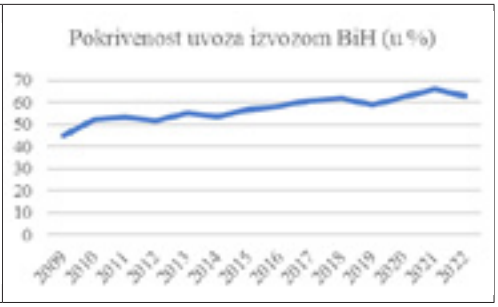
Grafikon 3. Vrijednost trgovine BiH **Grafikon 4.** Trgovinski bilans BiH

Izvor: Izrada autora na osnovu podataka Spoljnotrgovinske komore Bosne i Hercegovine

Na osnovu predstavljenih podataka može se konstatovati da je ukupna vrijednost trgovine BiH bila najmanja na početku analiziranog perioda, odnosno 2009. godine kada je iznosila 17.886.378 KM. Najveća vrijednost zabilježena je na kraju analiziranog perioda, 2022. godine i iznosila je 46.610.187 KM. Trend kretanja pokazuje da se vrijednost trgovine uglavnom povećavala, a izuzetak su 2012., 2015., 2019. i 2020. godina kada je zabilježeno smanjenje u odnosu na prethodnu godinu. Dalje, podaci predstavljeni na grafikonu 4 ukazuju na negativan trgovinski bilans, što je posljedica većeg iznosa uvoza nego izvoza države tokom cjelokupnog analiziranog perioda.

U nastavku je predstavljen trend kretanja uvoza i izvoza BiH (Grafikon 5), kao i kretanje stope pokrivenosti uvoza izvozom (Grafikon 6) u periodu od 2009. do kraja 2022. godine. Analiza stope pokrivenosti uvoza izvozom je važna jer pruža uvid u sposobnost zemlje da vlastitom proizvodnjom zadovolji potrebe tržišta i smanji zavisnost o uvozu, što može da doprinese jačanju domaće ekonomije, smanjenju trgovinskog deficita i poboljšanju spoljnotrgovinske stabilnosti.

Grafikon 5. Vrijednost uvoza i izvoza BiH



Grafikon 6. Stopa pokrivenosti uvoza izvozom

Izvor: Izrada autora na osnovu podataka Spoljnotrgovinske komore Bosne i Hercegovine

Na osnovu prikazanih podataka, može se zaključiti da je vrijednost izvoza bila najmanja 2009. godine kada je iznosila 5.531.199 KM, a najveća na kraju 2022. godine kada je iznosila 17.973.740 KM. U međuvremenu, vrijednost izvoza imala je uglavnom trend rasta, sa izuzetkom 2012. i 2019. godine, kada je zabilježen pad u odnosuna vrijednost na kraju prethodne godine. Sa druge strane, najmanja vrijednost uvoza zabilježena je na kraju 2009. godine kada je iznosila 12.355.179 KM, a najveća na kraju 2022. godine kada je iznosila 28.636.447 KM. Kao i kod izvoza, vrijednost uvoza uglavnom je imala trend rasta tokom analiziranog četrnaestogodišnjeg perioda, za izuzecima 2012., 2013., 2015. i 2020. godine kada je zabilježeno smanjenje uvoza u odnosu na prethodnu godinu.

Podaci predstavljeni na grafikonu 6 pokazuju da je stopa pokrivenosti uvoza izvozom bila najmanja 2009. godine kada je iznosila 44,8%, a najveća na kraju 2021. godine kada je iznosila 66,1%. Tokom analiziranog perioda stopa se kretala u navedenom intervalu, bez velikih oscilacija što ukazuje na relativno uravnotežen trgovinski položaj zemlje. Sa druge strane, njena vrijednost tokom analiziranog perioda pokazuje da se država suočava sa izazovima u postizanju održivog spoljnotrgovinskog bilansa, s obzirom na to da niža stopa pokrivenosti ukazuje na prekomjernu zavisnost o uvozu ili na nedovoljnu konkurentnost izvoznog sektora.

Bez dileme se može reći da je BiH zemlja koju karakteriše veći uvoz u odnosu na izvoz, što može predstavljati zabrinjavajući trend za državu iz nekoliko razloga. Prije svega, veći uvoz dovodi do trgovinskog deficita, što znači da zemlja troši više nego što zarađuje iz međunarodne trgovine. Takođe, prekomjerni uvoz može ukazivati na nedostatak konkurentnosti domaće proizvodnje i izvoznog sektora, što dugoročno može štetiti ekonomskom rastu i razvoju zemlje. Zato je važno da BiH radi na unapređenju svoje izvozne sposobnosti kako bi smanjila zavisnost od uvoza i postigla ravnotežniji spoljnotrgovinski bilans.

Uticaj BDP-a na uvoz i izvoz Bosne i Hercegovine

Nakon detaljne analize makroekonomskih pokazatelja, sprovedena je regresiona analiza sa ciljem da se utvrdi da li bruto domaći proizvod utiče na vrijednost uvoza Bosne i Hercegovine, odnosno na vrijednost izvoza.

Preliminarnim analizama dokazano je da pretpostavke normalnosti, linearnosti, multikolinearnosti i homogenosti varijanse nisu bile narušene. Kako bi se izmjerio stepen kvantitativne zavisnosti između BDP-a i uvoza, prvo je izračunat koeficijent linearne korelacije i rezultat je predstavljen u Tabeli 1.

Tabela 1. Rezultati korelacione analize

Correlations			
		Uvoz	**BDP**
Pearson Correlation	Uvoz	1,000	,953
	BDP	,953	1,000
Sig. (1-tailed)	Uvoz	.	,001*
	BDP	,001*	.
N	Uvoz	14	14
	BDP	14	14

Izvor: Izrada autora pomoću SPSS-a

Tabela 2. Rezultati regresiona analize

Model Summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	,953[a]	,908	,900	1,44498

a. Predictors: (Constant), BDP
b. Dependent Variable: Uvoz

Izvor: Izrada autora pomoću SPSS-a

Prema dobijenim rezultatima, koeficijent linearne korelacije iznosi $r = 0,953$ i pokazuje da postoji povezanost između analiziranih pojava. Vrijednost koeficijenta linearne korelacije između BDP-a i uvoza ukazuje na pozitivnu povezanost visokog intenziteta, što znači da bi povećanje BDP-a trebalo da utiče i na povećanje uvoza, odnosno da će u slučaju smanjenja BDP-a doći i do smanjenja uvoza. Da bi se to sa sigurnošću moglo potvrditi, potrebno je testirati značajnost dobijene ocjene. Dobijeni rezultat ($p = 0,001$) pokazuje da postoji statistički značajna i pozitivna korelacija između analiziranih promjenljivih.

Dalje, u Tabeli 2 prikazani su rezultati provjere da li je odabrani model dobar. Na osnovu njih, može se zaključiti da se oko 90% varijabiliteta zavisne promjenljive može objasniti pomoću odabrane objašnjavajuće promjenljive. Pokazatelj *Adjuster R Squared* daje bolju procjenu stvarne vrijednosti koeficijenta determinacije i on pokazuje da se 90% uvoza BiH može objasniti pomoću vrijednosti BDP-a. Standardna greška, koja ukazuje na preciznost modela, u ovom slučaju iznosi 1,44.

Nakon analize povezanosti BDP-a sa uvozom, analiziralo se da li vrijednost BDP-a utiče na vrijednost izvoza BiH. Sprovedeni postupak regresione analize je isti

kao i u prethodnom slučaju, a dobijene vrijednosti prikazane su u Tabeli 3 i Tabeli 4.

Tabela 3. Rezultati korelacione analize

Correlations			
		Uvoz	**BDP**
Pearson Correlation	Izvoz	1,000	,975
	BDP	,975	1,000
Sig. (1-tailed)	Izvoz	.	,001*
	BDP	,001*	.
N	Izvoz	14	14
	BDP	14	14

Izvor: Izrada autora pomoću SPSS-a

Tabela 4. Rezultati regresiona analize

Model Summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	,975[a]	,950	,946	1,8241

a. Predictors: (Constant), BDP
b. Dependent Variable: Izvoz

Izvor: Izrada autora pomoću SPSS-a

Nakon sprovedene korelacione analize, može se zaključiti da postoji statistički značajna i pozitivna korelacija između BDP-a i izvoza BiH (podaci iz Tabele 3). Dalje, na osnovu rezultata regresione analize može se zaključiti da se oko 94% vrijednosti zavisne promjenljive može objasniti pomoću odabrane objašnjavajuće promjenljive. To znači da se oko 94% izvoza BiH može objasniti pomoću vrijednosti BDP-a.

Na kraju, nakon sprovedene regresione analize, može se zaključiti da bruto domaći proizvod ima statistički značajan i pozitivan odnos sa uvozom i izvozom Bosne i Hercegovine. To praktično znači da se, u slučaju povećanja vrijednosti BDP-a, može očekivati i povećanje uvoza, odnosno izvoza ove države. Dobijeni rezultati su u skladu sa očekivanim.

Analiza robne razmjene Bosne i Hercegovine sa inostranstvom

Pored analize trenda i regresione analize, sprovedena je analiza pomoću t-testa uparenih uzoraka sa ciljem da se utvrdi da li postoji statistički značajna razlika između uvoza BiH iz zemalja Evropske unije i ostalih zemalja koje joj ne pripadaju. Pored uvoza, pomoću t-testa uparenih uzoraka utvrdiće se da li postoji statistički značajna razlika između izvoza BiH u zemlje Evropske unije i one koje joj ne pripadaju.

Korišteni podaci odnose se na period od 2009. do kraja 2022. godine, a preuzeti su od spoljnotrgovinske komore Bosne i Hercegovine. Rezultati t-testa pomoću koga se utvrdilo da li postoji statistički značajna robna razmjena Bosne i Hercegovine sa zemljama Evropske unije i ostalim zemljama prikazani su u Tabeli 5.

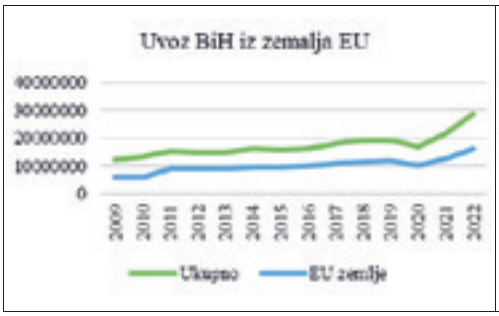
Tabela 5. Rezultati t-testa

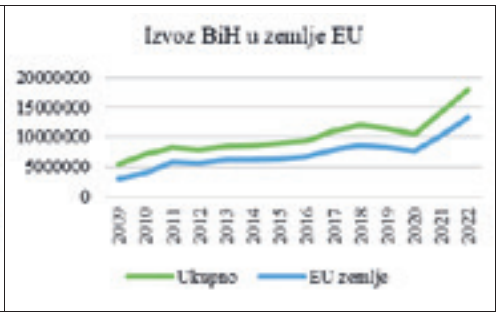
Paired Samples Statistics						
		Mean	**N**	**Std. Deviation**	**t-test Value**	**Sig. (2-tailed)**
Pair 1	Uvoz_EU	10217343,2857	14	2560450,25787	6,937	,023
	Uvoz_DZ	7226281,4286	14	1689938,50700	7,681	,064
Pair 2	Izvoz_EU	7143480,6429	14	2569856,87911	0,681	,481
	Izvoz_DZ	2955911,7143	14	712331,25468	4,521	,521

Izvor: Izrada autora pomoću SPSS-a

T-testom upoređene su vrijednosti robne razmjene (uvoza i izvoza) Bosne i Hercegovine sa zemljama Evropske unije i ostalim zemljama. Rezultati pokazuju da ne postoji statistički značajna razlika između vrijednosti uvoza/izvoza u zemlje Evropske unije i one koje joj ne pripadaju.

Iako nije utvrđena statistički značajna veza, vrijednosti pokazuju da Bosna i Hercegovina u velikom mjeri vrši robnu razmjenu sa zemljama Evropske unije. To potvrđuju podaci prikazani na grafikonima 7 (vrijednost uvoza iz zemalja Evrospke unije) i 8 (vrijednost izvoza u zemlje Evropske unije).





Grafikon 7. Vrijednost uvoza iz EU **Grafikon 8.** Vrijednost izvoza u EU

Izvor: Izrada autora na osnovu podataka Spoljnotrgovinske komore Bosne i Hercegovine

Kao što se vidi na predstavljenim grafikonima, Bosna i Hercegovina ostvaruje značajan obim robne razmjene sa zemljama Evropske unije, što je rezultat bliske geografske i ekonomske povezanosti. Robna razmjena između BiH i zemalja EU predstavlja ključni segment ukupne spoljnotrgovinske aktivnosti zemlje, čineći većinu njenog spoljnog prometa. Ova intenzivna razmjena uključuje različite sektora, uključujući industriju, poljoprivredu i usluge, te doprinosi diversifikaciji bosanskohercegovačke ekonomije. Povoljni trgovinski sporazumi, poput Sporazuma o stabilizaciji i pridruživanju sa EU, olakšavaju prostup tržištu Evropske unije za bosanskohercegovačke proizvode.

Pored toga, povezanost sa zemljama EU omogućava BiH pristup tehnologiji, investicijama i stručnom kadru koji podržava njen ekonomski razvoj. Ključni trgovinski partneri Bosne i Hercegovine unutar Evropske unije uključuju Njemačku, Italiju i Hrvatsku, što odražava širok spektar roba koje se razmjenjuju između ovih strana. Očekuje se da će dalji razvoj i unapređenje trgovinskih odnosa sa EU dodatno podržati rast BiH ekonomije i otvoriti nove mogućnosti za poslovnu saradnju.

ZAKLJUČAK

Istraživanje je sprovedeno sa ciljem da se sagleda da li vrijednost bruto domaćeg proizvoda Bosne i Hercegovine ima uticaj na spoljnu trgovinu ove države. Prvo je izvršena analiza makroekonomskih trendova koja je ključna za razumijevanje ekonomske situacije u BiH. Praćenje kretanja BDP-a, uvoza i izvoza pruža uvid u ekonomsku aktivnost zemlje. Trendovi u BDP-u reflektuju ekonomski rast ili recesiju, dok analiza uvoza i izvoza pruža informacije o trgovinskim aktivnostima. U periodu od 2009. do kraja 2022. godine, vrijednost BDP-a BiH uglavnom je pokazivala trend rasta, uz izuzetne poput 2012. godine. Stopa rasta BDP-a varirala je tokom analiziranog perioda, s najnižim vrijednostima u godinama globalne finansijske krize i pandemije Covid-19, te najvišim u 2021. godini.

Uvoz i izvoz Bosne i Hercegovine su takođe važni pokazatelji ekonomske aktivnosti. Vrijednost uvoza i izvoza uglavnom je imala trend rasta, iako su zabilježena smanjenja u nekim godinama. Analiza odnosa između uvoza i izvoza ukazuje na trgovinski deficit, što može biti izazov za ekonomsku stabilnost. Zemlja se suočava sa izazovima u postizanju ravnoteže u spoljnotrgovinskom bilansu, s obzirom na veći uvoz u odnosu na izvoz.

Nakon analize makroekonomskih trendova, sprovedena je regresiona analiza kako bi se utvrdio uticaj BDP-a na uvoz i izvoz Bosne i Hercegovine. Rezultati pokazuju statistički značajnu pozitivnu korelaciju između BDP-a i uvoza, odnosno izvoza. Ovo potvrđuje da ekonomski rast (BDP) pozitivno utiče na trgovinske aktivnosti zemlje.

Dodatno, analizirana je robna razmjena Bosne i Hercegovine sa zemljama Evropske unije i ostalim zemljama. Iako nije utvrđena statistički značajna razlika, podaci pokazuju značajan obim trgovine sa zemljama Evropske unije. Povoljni trgovinski sporazumi olakšavaju pristup tržištu EU za bosanskohercegovačke proizvode, dok povezanost sa EU omogućava pristup tehnologiji i investicijama koje podržavaju ekonomski razvoj. Očekuje se da će dalji razvoj trgovinskih odnosa sa EU podržati rast ekonomije ove države i otvoriti nove poslovne mogućnosti.

Razvoj strategija za povećanje izvoza i smanjenje uvoza ključan je za unapređenje ekonomske stabilnosti Bosne i Hercegovine. Prvo, raznolikost izvoznih proizvoda treba postati prioritet kako bi se smanjila zavisnost pojedinih sektora i povećala konkurentnost na globalnom tržištu. Diverzifikacija će zahtijevati ulaganje u istraživanje i razvoj novih proizvoda i usluga koji imaju visoku dodatu vrijednost. paralelno sa tim, podrška izvoznim industrijama, kroz olakšavanje pristupa finansiranju i smanjenje administrativnih prepreka, ključna je za jačanje konkurentnosti bosanskohercegovačkih proizvoda.

Drugi korak odnosi se na aktivno jačanje trgovinskih sporazuma, kako sa zemljama u regionu, tako i sa partnerima širom svijeta. Otvaranje novih tržišta i smanjenje prepreka za izvoz osigurati će stabilan rast izvoznog sektora. Takođe, podrška bosanskohercegovačkim kompanijama koje žele izvoziti svoje proizvode kroz edukaciju i logističku podršku ključna je za uspjeh.

Najzad, vlada bi trebala koristiti instrumente kao što su olakšavanje poslovnog okruženja i poreske olakšice kako bi podstakla domaću proizvodnju i smanjila zavisnost od uvoza. Kroz ove mjere, povećanje izvoza i smanjenje uvoza imat će pozitivan uticaj na stabilnost ekonomije u BiH kroz smanjenje trgovinskog deficita, povećanje prihoda i zaposlenosti, jačanje deviznih rezervi te diverzifikaciju privrede, što će doprinijeti dugoročnoj stabilnosti zemlje.

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THE INFLUENCE OF GDP ON THE FOREIGN TRADE OF BOSNIA AND HERZEGOVINA WITH A FOCUS ON THE EXCHANGE OF GOODS WITH THE COUNTRIES OF THE EUROPEAN UNION

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Summary: *Bosnia and Herzegovina is a country in transition with an economy that imports more than it exports, but the importance of exports is crucial for sustainable economic growth. This paper investigates the impact of the gross domestic product (GDP) on the foreign trade of Bosnia and Herzegovina, focusing on the exchange of goods with the countries of the European Union. The analysis covers the period from 2009 to the end of 2022 to look at long-term trends. The main goal of the research is to determine the existence of a statistically significant influence of GDP on the exports and imports of the country. Using the t-test, the value of exports/imports between the countries of the European Union and other countries is also analyzed. Firstly, an analysis of macroeconomic trends was conducted, which is crucial for understanding the economic situation in BiH. Monitoring the trends of GDP, imports, and exports provides insights into the country's economic activity. GDP trends reflect economic growth or recession, while the analysis of imports and exports provides information on trade activities. From 2009 to the end of 2022, the GDP of BiH mostly showed a rising trend, with exceptions such as in 2012. The GDP growth rate varied during the analyzed period, with the lowest values during the years of the global financial crisis and the Covid-19 pandemic, and the highest in 2021. Imports and exports of Bosnia and Herzegovina are also important indicators of economic activity. The value of imports and exports mostly showed an upward trend, although decreases were recorded in some years. The analysis of the relationship between imports and exports indicates a trade deficit, which can be a challenge for economic stability. The country faces challenges in achieving balance in the foreign trade balance, given the higher imports compared to exports. After analyzing macroeconomic trends, a regression analysis was conducted to determine the impact of GDP on the imports and exports of Bosnia and Herzegovina. The results show a statistically significant positive correlation between GDP and imports, as well as exports. This confirms that economic growth (GDP) positively influences the country's trade activities. Additionally, the trade exchange of Bosnia and Herzegovina with the countries of the European Union and other countries was analyzed. Although no statistically significant difference was found, the data show a significant volume of trade with the European Union countries. Favorable trade agreements facilitate access to the EU market for Bosnian products, while the connection with the EU enables access to technology and investments that support economic development. Further development of trade relations with the EU is expected to support the economic growth of this country and open up new business opportunities. The results of the research provide insight into the trends of the mentioned variables during the analyzed period. Based on the obtained results, concrete recommendations are given for increasing the export of Bosnia and Herzegovina. The paper contributes to the understanding of the economic dynamics of this country in the trade context, emphasizing the importance of strategies for improving exports and strengthening economic stability.*

Key words: *trade, gross domestic product, import, export, stability.*

JEL clasiffication: *E01, F10, F14*

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

METHODOLOGICAL APPROACH TO COLLECTING CLIMATE FINANCE DATA- THE EXAMPLE OF BOSNIA AND HERZEGOVINA

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Abstract: *This study examines climate finance context, policy context in Bosnia and Herzegovina and creating recommendations regarding national Monitoring, Reporting and Verification (MRV) system to track climate finance inflows and public expenditure. This research was prepared to answer the question, what is the best methodological approach for recording climate finance in Bosnia and Herzegovina, considering the best foreign practices as well as the specifics of the political system of Bosnia and Herzegovina. The subject of the research was the financial flows of investments in climate change, mitigation and adaptation, and the recommendation of the best way to establish a system for monitoring, reporting and verifying the relevant financial indicators. During the research, the main hypothesis was tested: H1: The existing monitoring of flows of public finances in Bosnia and Herzegovina give a clear picture of investment in climate change. The findings underscore the necessity for a robust MRV system that not only enhances transparency but also fosters accountability in the allocation of climate finance. It becomes evident that tailored strategies must be deployed to integrate these practices within the existing governance frameworks, ensuring that financial flows align with national climate objectives. Ultimately, this study seeks to contribute valuable insights and actionable recommendations toward advancing climate finance management in Bosnia and Herzegovina, advocating for a sustainable and resilient future in the face of climate change impacts.*

Keywords: *public finance, sustainability, management, financial management and control, fiscal economy*

JEL classification: *D81, G18, G38, H20, H50, H70, H79, J28, K49, P43.*

INTRODUCTION

This paper was prepared using the findings after desk research and comprehensive consultation with key stakeholders to validate key assumptions and recommendations. Desk research reviewed the international best practices designing recommendations for Bosnia and Herzegovina regarding MRV support system on climate finance. Desk research of the available documents has been carried out to understand climate finance context, policy context in Bosnia and Herzegovina and creating recommendations regarding national Monitoring, Reporting and Verification (MRV) system to track climate finance inflows and public expenditure. MRV system basically has the following purpose which can be seen in the following elements:

- Ensuring greater transparency, accuracy and comparability of information about climate change so the system would be able to identify good practice, foster a learning process, and allow an international benchmarking,
- Visibility and recognition of mitigation achievements to raise ambitions of other countries,
- Attribution of quantified impacts to policies,
- Accounting national and international progress,
- Identifying gaps and international support needs,
- Creating access to international and private finance (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) , 2024)

The key task of the MRV system (in accordance with the recommendations from the UNFCCC Handbook on MRV for developing country parties, 2014) is to:

- assist in the reporting process defined by the Framework Convention,
- contribute to building national capacities and ensure sustainability of the reporting process,
- inform key policymakers and legislation, at different levels,
- assist in institutionalizing the activities relating to reporting on climate change. (UNFCCC. Standing Committee on Finance (SCF) 2022)

Apart from that, the MRV system should assist in developing expertise in the field of climate change and appropriate climate actions to provide support to national institutions and the business community in building a low-carbon and adapted economy resilient to climate change, and to assist in creating transparent reports of high quality (NC, BUR, NDC).[1] MRV of support is a part of the National MRV system. We can see on the next figure their mutual connection. (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2024)

[1] All countries should submit National Communications every four years. Developing countries should submit BURs every two years Under ICA a technical analysis of BURs will be conducted by a team of technical experts.

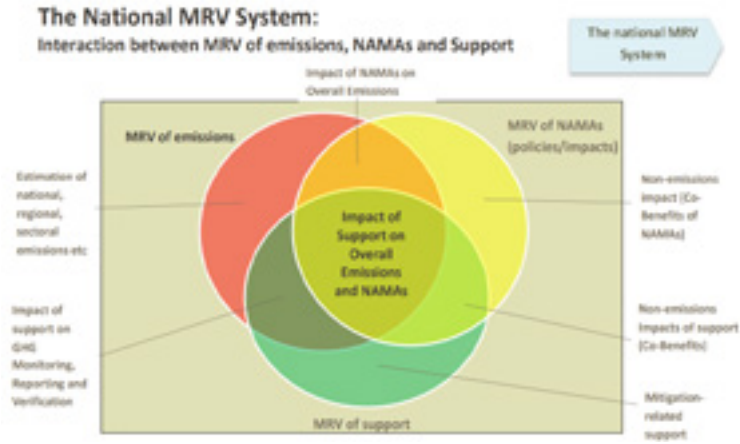

Figure 1: Interaction between MRV of emissions, NAMAs and Support system

Source: Deutsche Gesellscha für Internationale Zusammenarbeit (GIZ): MRV-Tool. How To Set Up National MRV Systems. Version 4.1, 2013. (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2024)

DEFINITIONS OF MEASUREMENT, REPORT AND VERIFICATION SYSTEM

Measurement, report and verification system of support is a program that can measure, report and verify financial flows, technology transfer and data on capacity building and the impact of the provided support. MRV system serves to keep track of intended contributions and their delivery among developed and developing countries. This framework improves transparency and accountability of effectiveness of international cooperation and creates incentives for private investment through providing a clearer overview of financial flows, trends, sources, and purposes of international and domestic climate support. (Vujičić Stefanović, Novakovic, & Milovanovi', 2023) Within MRV we must distinguish what gets measured, what gets reported and what gets verified. We measure the flow of public finance and levels of technology transfer that can be accounted to interventions related to mitigation actions, we report on the forms of finance, its purpose, sectoral and geographic distribution, leverage of private funding and disbursement, and we verify the scale of support between donors and recipients, the effectiveness of support and cost-benefit impacts. Increasing the importance of the public sector (Novakovic, Aleksic, & Milovanovic, 2022) the MRV system for now records public spending in mitigation and adaptation actions.

The Standing Committee on Finance of the United Nation Framework Convention on Climate Change (UNFCCC) provides an internationallz accepted version of definition of climate finance term: (Novaković, 2024), (UNFCCC. Standing Committee on Finance (SCF), 2022):

> „Climate finance refers to local, national or transnational financing that seeks to support mitigation and adaptation actions that will address climate change. Climate finance is needed for mitigation, as large investments are needed to significantly reduce emissions. Climate finance is equally important for adapting to climate change, because significant financial resources are needed to adapt to the negative impacts of climate change and reduce their impacts.“

The aforementioned definition of climate finance includes the flow of funds for activities, programs and projects related to financing the effects of climate change, cocoa mitigation, and adaptation. It is important to point out that this definition only includes finance that flows directly into assets and activities. (Deutz, 2020) It is simpler to monitor the flow of financing in the public sector if we have a process organizational structure (Novakovic, Milovanović, Mujkić, & Kulaš Mirosavljević, 2024)

What is mitigation? Common Principles for Climate Mitigation Finance Tracking consist of a set of definitions and guidelines and a list of eligible activities that allow for consistent accounting and reporting of financial flows for climate change mitigation finance. (EIB, 2023)

An activity can be classified as climate change mitigation where the activity, by avoiding or reducing GHG emissions or increasing GHG sequestration, contributes substantially to the stabilization of GHG concentrations in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system consistent with the long-term temperature goal of the Paris Agreement. Some of the measures of mitigation are

- energy efficiency (energy efficient appliances, traffic, households),
- green energy (solar, geothermal, hydro, wind, biomass and biofuel)
- reduction of waste and unsustainable patterns of production and consumption - recycling (EIB, 2023)

What is adaptation? If we take into consiredation the context of climate change we can define adaptation as a process undertaken to adapt to actual or the expected climate and its effects. Climate Change Adaptation (CCA) refers to how people and systems adjust to the actual or expected effects of climate change. Adaptation is a process of continual adjustment which, if successful, will enable socio-economic or environmental goals to be achieved despite a changing climate context. The sectors where we can track records regarding climate finance are, as follows:

- Energy
- Mining and metal production for climate action
- Manufacturing
- Agriculture, forestry, land use and fishery
- Water supply and wastewater
- Solid waste management
- Transport
- Buildings, public installations and end-use energy efficiency
- Information and communications technology (ICT) and digital technologies
- Research, development and innovation
- Cross-sectoral activities (EIB, 2023)

The most common mitigation activities listed across international, regional and national taxonomies or classifications are: Renewable energy, CCU/S, electrified transport, energy efficiency of buildings, and water management and supply are. (UNFCCC Standing Committee on Finance, 2021). An analysis of 12 classification lists or taxonomies related to climate change mitigation activities, including those of MDBs and of regional and national jurisdictions, revealed that mitigation activities that appear most

commonly (in more than 75 per cent of lists) are:

- renewable energy,
- electrified transport,
- energy efficiency of buildings,
- water management and supply,
- and abatement technologies (e.g. carbon dioxide capture and use or storage).

Different eligibility criteria are in use for common activities relating to:

- agriculture,
- Waste,
- transport infrastructure
- and power generation (the latter includes geothermal power, hydropower, bioenergy and efficiency improvements). (UNFCCC Standing Committee on Finance, 2021)

Less common activities (in 25–75 per cent of lists) include gas-fired power generation, waste-to energy processes, sustainable logging, and information and communication technology infrastructure. Of the uncommon activities (less than 25 per cent on the lists), notable are nuclear power generation, aviation and mining. Of the 12 taxonomies of countries and institutions reviewed, 10 make use of exclusion lists across mitigation sectors. (UNFCCC. Standing Committee on Finance (SCF), 2022)

For adaptation, most taxonomies refer to process-based screening methods rather than an activity list owing to adaptation activities being specific to a given local environment or context. The evaluation baseline for adaptation screening processes is typically based on environmental and climate risk and vulnerability assessments or national, regional or global resilience and biodiversity standards and codes. In addition, 7 of the 12 analyzed taxonomies apply the 'do no significant harm' principle (to other environmental objectives) when assessing the eligibility of activities. (UNFCCC Standing Committee on Finance, 2021)

Potential climate finance (by category and by sector) for the monitoring and evaluation of specific actions may include the following:

Table 1: Potential climate finance by sector

Agriculture	**Potential climate finance**
Adaptation action	Investment costs and taking measures to preserve the soil
Biodiversity and forestry	**Potential climate finance**
Adaptation action	Investments in soil conservation measures Investments in wastewater treatment Investments in the construction of fire protection sections
Human health	**Potential climate finance**
Adaptation action	Investing in an early warning system Investments in measures to reduce air pollution
Tourism	**Potential climate finance**
Adaptation action	Investments in measures to reduce air pollution
Water resources	**Potential climate finance**

Adaptation action	Costs of public awareness campaigns on water efficiency Investments in of new hydroelectric projects that consider future climate risks Costs of water efficiency measures used in energy generation/extraction Cost of riparian tree planting Investment in improved irrigation of agricultural land

Source: authors proposition

MRV SYSTEM IN BOSNIA AND HERZEGOVINA

Bosnia and Herzegovina adopted the Strategy for adaptation to climate change and low-emission development of Bosnia and Herzegovina for the period 2020-2030. The strategy in question was adopted in order to direct the institutions in Bosnia and Herzegovina towards a green economy and environmental protection. in order for international institutions to provide financial support and support for capacity building in a certain country that is looking for this kind of help, it is necessary for them to be convinced of the strategic determination of a certain country. This strategy is the framework for dealing with the challenges of climate change. (Strategija prilagodbe klimatskim promjenama i niskoemisionog razvoja Bosne i Hercegovine za razdoblje 2020–2030, 2020).

Another strategic document that was prepared in 2021 is the Climate Change Adaptation Financing Strategy for Bosnia and Herzegovina, which pointed to the deficiency that exists in the financial system of Bosnia and Herzegovina, because there is no clear indication of the amount of financial resources available to BiH, nor of the amount that is needed.

The strategic documents in question showed that in the future, the institutions in BiH should focus on finding a mechanism for monitoring Finnish flows that are aimed at adaptation and mitigation, and that are reliable and comparable.

Considering the complex structure of Bosnia and Herzegovina, the existing legislative framework in Bosnia and Herzegovina does not provide an adequate basis that would adequately treat the impact of climate change, which creates an additional problem for the process of adaptation to changed climate conditions. (Novaković, 2024)

Full implementation and functioning of the integral MRV system need to be the key tool of the authorities at the Entity and the BiH level in combating the adverse effects of climate change, achieving the objectives of Bosnia and Herzegovina identified in the strategic documents (INDC), and fulfilling the assumed international obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement.

Bosnia and Herzegovina must improve its reporting capacity, upgrading the current system of climate change monitoring, reporting and verification of key indicators (MRV) to a comprehensive model of collection of reliable and quality data of climate finance.

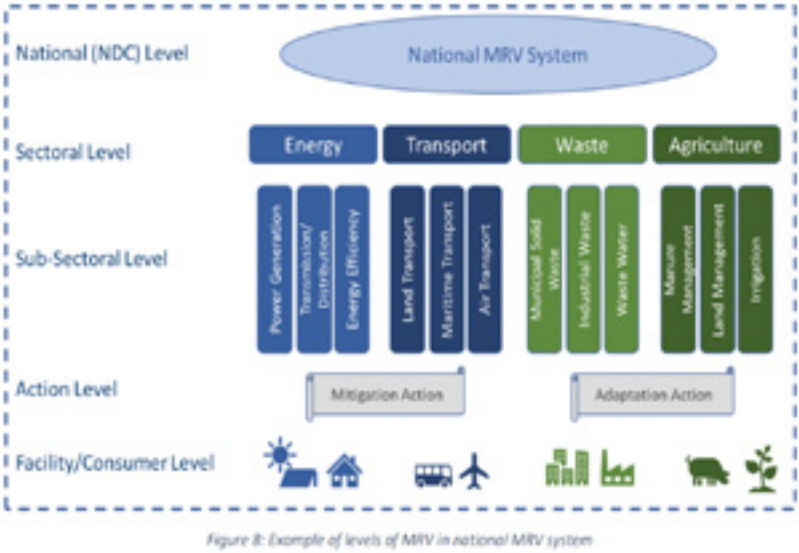

Figure 2: MRV in practice – Connecting Bottom-Up and Top-Down Approaches For Developing National MRV Systems For NDCS

Source: (Transparency, 2024)

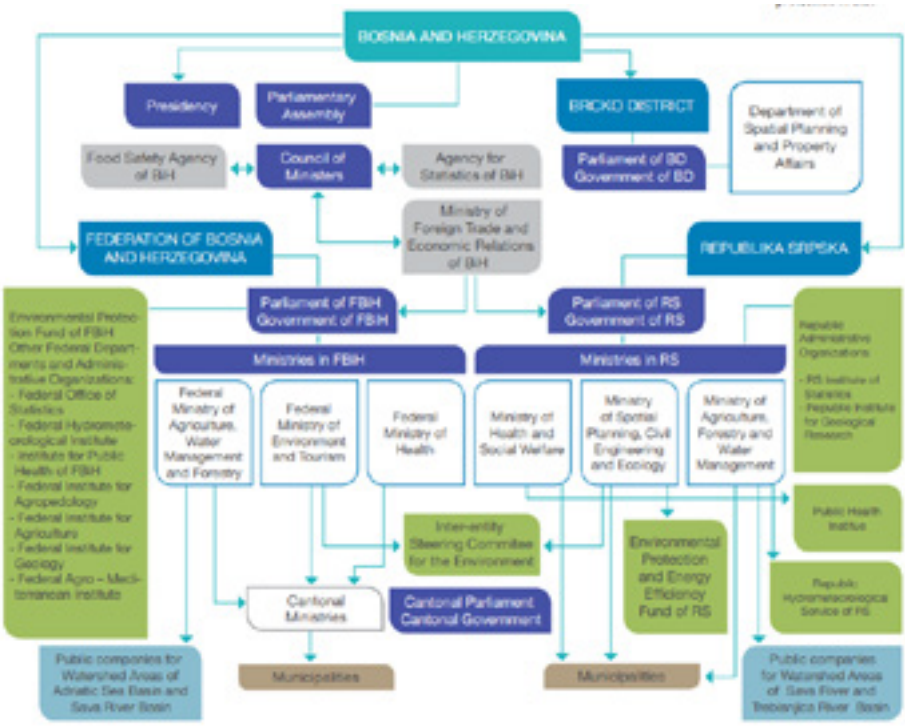

Figure 3: Institutional structure in the field of environmental protection in BiH

Source: (UNDP, 2012)

In Bosnia and Herzegovina: foreign policy, cutom policy, and foreign trade are in the competence of the institutions of Bosnia and Herzegovina, which is in accordance with Annex IV of the Dayton Peace Agreement, which is implemented as the Constitution of Bosnia and Herzegovina. According to Annex IV of the Dayton Peace Agreement entities have all functions and powers that are not expressly assigned to BiH institutions. Therefore, the Republika Srpska, the Federation of Bosnia and Herzegovina (as well as ten cantons in FBiH) and the Brcko District have within their jurisdiction issues of environmental protection through the application of laws, regulations and standards trough their own governments. Environmental governance in Bosnia and Herzegovina has institutions at every of the four administrative levels. Those are: state level, entity level, cantonal level in the FBiH and municipal level.

Whilst climate change and disaster risk reduction are not yet included in budgeting processes on any level of Government, the two domestic financial institutions administering environmental funds – the Republika Srpska Environmental Fund (2002) and the Federation of Bosnia and Herzegovina Environmental Fund (2003) – are starting to increase the country's economic focus on environmental issues. (UNDP, 2013) Therefore, until program budgeting is established and until it takes root in practice, (Novaković, 2024) it is recommended that climate finance data be collected within the adapted management structure in BiH established through the National Adaptation Plan – NAP with proposed measure (UNDP, 2021).

Figure 4: Institutional structure in the field of environmental protection in BiH

Source: (UNDP, 2021).

MRV of support system for climate finance in Bosnia and Herzegovina

Since in the field of adaptation and mitigation there is a lack of clear procedures for collecting and updating data on climate finance, (Novakovic, Milovanović, Mujkić, & Kulaš Mirosavljević, 2024) introducing a MRV of support as a software

solution should eliminate this shortcoming. In addition, it should be ensured that data on climate change, and measures for adaptation and mitigation become integrated and that there is mapping between data flows of individual sectors (environment, waste, industry, agriculture, forestry, energy, transport).

Moreover, the introduction of the new module within climate change information system will enable the involvement and informing the public and the non-governmental sector on the state of climate finance. The platform for monitoring climate finance in the segments of adaptation and mitigation will be an integral part of the Environmental Information System of the Entity Environmental Protection Funds: Environmental Protection and Energy Efficiency Fund of Republika Srpska and the Environmental Fund of FBiH. Both Funds have established an information system.

Environmental Information System – Climate Change (further referred to as EIS-CC) in BiH was developed through technical support from UNDP and Global Environment Facility (GEF) funds. Bosnia and Herzegovina developed its enhanced Nationally Determined Contributions (NDCs), a cornerstone of the Paris Agreement. "As defined in Article 13 of the Paris Agreement, Bosnia and Herzegovina has an obligation to report on its progress towards the NDC and on other aspects of climate change action based on improved transparency frameworks. The project supported the country to:

- Enhance coordination between relevant institutions to improve monitoring and reporting practices,
- Establish a domestic system of climate change monitoring, reporting and verification in accordance with Article 13 of the Paris Agreement,
- Improve GHG emissions inventory and NDC,
- Strengthening and harmonizing legislation in the field of monitoring, reporting and verification,
- Integrate gender mainstreaming into monitoring, reporting and verification,
- Encourage regional cooperation between relevant institutions." (UNDP, 2024)

Under Component 1, the CBIT project introduced simplified monitoring, reporting and verification system (MRV) for the collection, analysis and reporting of climate change-related data. With a special emphasis on the key role of the funds since they have already established successful EIS-CC. The software platform created within CBIT project serves as a valuable tool for coordinating, using, and managing data that ensures the availability of timely high-quality information for short-term, medium-term, and long-term planning in the fight against climate change. It is used in compiling regular reports towards the UNFCCC Secretariat and the EU, but also to support institutions in monitoring the implementation of climate action strategies. Considering the complex government structure of Bosnia and Herzegovina, the MRV of support platform should support the interaction and cooperation of all stakeholders both horizontally and at all vertical levels.

MRV of support system will be one module within EIS-CC that will enable the establishment of permanent mechanisms for data collection, analysis and reporting regarding climate finance in all sectors that are 'sensitive' and vulnerable to climate change, such as: water management, agriculture, forestry, hydropower, spatial

planning, environmental protection and other related fields. Sources of emissions and greenhouse gas sinks are divided into six sectors: energy, industrial processes, use of solvents and other products, agriculture, land use change and forestry and waste. MRV of support platform proposes:

- clear roles and responsibilities of all key institutions/responsible parties regarding climate finance.
- develops rules and procedures which will ensure that individuals in institutions can adequately work on collection, analysis, compilation, compiling, reporting on the necessary information and monitoring progress in accordance with the national climate agenda, the Paris Agreement and EU regulations regarding climate finance.

WHO:

Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina (MOFTER) as the UNFCCC focal point will have possibility to prepare reports on climate finance in Bosnia and Herzegovina (RS, FBiH, BD).

Coordinator, to be appointed, whithin ministries as follows, will have obligation to import data regarding climate finance:

- Ministry of Spatial Planning, Civil Engineering and Ecology of the Republic of Srpska
- Ministry of Energy and Mining of the Republic of Srpska
- Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska
- Ministry of Transport and Communications of the Republic of Srpska
- Ministry of Health and Social Protection of the Republic of Srpska
- Federal Ministry of Environment and Tourism
- Federal Ministry of Energy, Mining and Industry
- Federal Ministry of Agriculture, Water Management and Forestry
- Federal Ministry of Spatial Planning
- Federal Ministry of Transport and Communications
- Federal Ministry of Health
- Department for Agriculture, Forestry and Water Management of the Government of the Brčko District of Bosnia and Herzegovina
- Department for spatial planning and property-legal affairs of the Government of Brčko District of BiH

Departments of the Government of the Brčko District of Bosnia and Herzegovina will import data in EIS – CC in jurisdiction of Environmental Protection and Energy Efficiency Fund of Republika Srpska or Environmental Protection and Energy Efficiency Fund FbiH.

Public enterprises in the departmental jurisdiction of individual ministries will submit data on the provided form to the coordinators in their ministries.

Figure 5: Institutional structure in the field of climate finance in BiH

Source: Authors' propositions

WHEN:

- Public enterprises in the departmental jurisdiction of individual ministries will submit data on the provided form (Annex 1) to the coordinators in their ministries, no later than 31.01.2024.
- Representatives from the ministries mentioned will insert data regarding climate finance into the module MRV of support within EIS-CC no later than 30.03.2024.

Table 2: WHAT - DATA SCOPE:

Institution	Description or example of investment
Ministry of Energy and Mining	Investing in the decarbonization of Fossil Fuel power plants, Investment/subsidies in energy production from renewable sources (Biofuel/Biomass-fired, Geothermal, Solar, Wind, Hydrogen from Renewables). (IPCC, 2022)
Ministry of Spatial Planning, Civil Engineering and Ecology	Investment/subsidies in waste management and infrastructure, Investment/subsidies in energy efficiency (Solar Thermal Water Heaters), Greenfield or brownfield projects that reduce methane or nitrous oxide emissions through wastewater, fecal sludge, or septage management, Efficient Lighting systems (incl. public lighting)

Ministry of Agriculture, Forestry and Water Management	Investment in the construction of embankments to protect crops, Investment in Sustainable Crops, Argo-forestry, Livestock production, Investment for sustainable production, Investment in Afforestation, Reforestation, Forest Conservation, sustainable management of existing forest, including extraction of non-timber products, Sustainable fish production, Investment in early warning systems and levees, Investment in: On-farm water management, water storage, soil moisture conservation and irrigation. Investment in conservation, protection and restoration of natural forests. (IPCC, 2022).
Ministry of Transport and Communications	Battery Electric Vehicles, Electric Vehicle (EV) Chargers, New Bus, Light or Heavy Rail Fleet & Related Infrastructure, With associated modal shifts from a higher-carbon transport mode, Infrastructure for non-motorized transport, investments in energy efficient centers or networks or energy efficient retrofits
Ministry of Health	Investment in Strengthening the climate resiliency of health systems. (INTERNATIONAL COURT OF JUSTICE, 2023)

Source: authors proposition

HOW:

Coordinators, to be appointed, will collect data within its institutions (ministries, departments, public enterprises). The proposed form (Annex 1) will serve to collection data regarding climate finance. Since MRV of support request verification of the data, Field CF18. (Name and signature of the responsible person who gave consent and verified the entered data) confirmation/verification of the specified data is provided. Next step, after singing the form, coordinators will import data in MRV of support module within EIS-CC. Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina (MOFTER) as the UNFCCC focal point will have possibility to prepare reports on climate finance in Bosnia and Herzegovina (RS, FBiH, BD).

Environmental Protection and Energy Efficiency Fund of the Republic of Srpska and Environmental Protection Fund of the Federation of Bosnia and Herzegovina will also have possibility to prepare reports on climate finance in entities of Bosnia and Herzegovina, respectivly (RS, FBiH, BD).

CONCLUSION AND RECOMANDATION FOR FUTURE RESEARCH

Climate finance needs to be documented, and it is mandatory for all countries that are signatories to the Paris Agreement. Since Bosnia and Herzegovina is a signatory to this agreement, the obligation to maintain records also applies to Bosnia and Herzegovina. Given that a unified methodology has not been prescribed through specific regulations and manuals, as well as an analysis of available literature and existing legal provisions, we have proposed the best methodology that can be applied for the recording of climate finance. Since this research was prepared to answer the question, what is the best methodological approach for recording climate finance in Bosnia and Herzegovina, considering the best foreign practices as well as the specifics of the political system of Bosnia and Herzegovina, and that we, during the research, tested the

main hypothesis H1: The existing monitoring of flows of public finances in Bosnia and Herzegovina give a clear picture of investment in climate change, we can conclude that main hypothesis was not confirmed.

We have proposed new methodological approach as the solutions about the research: the financial flows of investments in climate change, mitigation and adaptation, and the recommendation of the best way to establish a system for monitoring, reporting and verifying the relevant financial indicators.

Future research can focus on examining the alignment of legal regulations regarding environmental protection, as well as the measures taken based on the recorded needs and invested climate finance in Bosnia and Herzegovina.

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

MAKING UNCERTAIN BUSINESS DECISIONS IN THE BANKING SECTOR

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Abstract: *The time in which we live today imposes new business rules that must be followed in order to survive in the market. Therefore, the essence of today's management in all sectors, including banking, is flexibility. Clients who use the bank's services have the following key products at their disposal: loans, guarantees and deposits. The subject of analysis in this paper will be the approval of loans to business users. Analyzing business users, banks analyze the entire spectrum of different financial indicators. This information, in the form of quantitative and qualitative data, is the basis for assessing the creditworthiness of the client in order to minimize credit risk. Based on the analysis of financial indicators and overall operations of a legal entity, a detailed report on solvency, liquidity, profitability, activities, repayment capacity of a particular client can be obtained. The main goal of the research is to show the analysis process that happens in the background when approving a loan to a business user. The paper will present banking risks as well as the types of financial indicators on the basis of which business decisions are made. On the basis of the case study method, it will be shown how and in what way banks approach the process of approving loans to business persons, which methods they use to protect themselves and to prevent the emergence of banking risk. The results of the research point to the need to use financial indicators during the loan approval process, because in this way banking risk is prevented, and subjective assessment methods cannot meet such a demanding task.*

Keywords: *decisions, finance, bank, credit.*

JEL classification*: G20, G21.*

INTRODUCTION

Making a decision on issuing a loan to a business user is not an easy process for the bank. The bank, in the process of issuing loans, must use instruments that are available from the field of financial management. These are instruments in the form of financial indicators, such as financial indicators of liquidity, solvency, indebted-

ness, profitability, etc. These indicators are calculated based on the analysis of financial statements, namely based on the vertical and horizontal analysis of the balance sheet and income statement. By comparing the positions found in these reports, you can get relevant information about how a company operates, what its obligations are, etc. The optimal approach involves observing the situation in the company in several previous years, i.e. analysis of the balance sheet and income from several different years, in order to obtain adequate information about the movement of certain coefficients over the years. Such comprehensive analyzes enable the reduction of banking risk, that is, indicate that a certain company may have problems with repaying loans, and be an alarm for the bank not to place its funds in those organizations that are risky for them. On the basis of the above, it can be concluded that it is very important that scientific methods are applied in this context, and that they can provide answers to questions that, by subjective assessment, cannot be answered. In the continuation of the work, through the literature review and the case study method, this will be discussed more.

LITERATURE REVIEW

In the past, how and in what way banks grant loans to business users was discussed. Financial institutions are key to allocating capital to its most productive purposes. Of the many functions of commercial banks, lending has the most direct impact on real economic growth. The banking system acts as an intermediary that directs financial resources from savers to entrepreneurs who organize production processes that contribute to the real result (International Capital Market Association, 2024). But the role of banks is not limited to the production side. Retailers, for example, have less need for bank credit to finance the distribution of final goods. Similarly, consumers need the bank's help in procuring durable goods for repayment. In credit calculations, banks are involved in every stage of the circular flow of goods and services, from their initial production through distribution to final consumption (Akpansung & Babalola, 2012). Research on bank loan growth has attracted the attention of academics and policy makers, especially after the global financial crisis, due to the effects of the credit boom cycle on the economy. Despite credit expansion exposing systemic risks to banks, making them vulnerable to financial crises, bank credit growth remains the main driver of domestic investment, output and consumption, thereby strengthening macroeconomic stability, especially in bank-based developing economies. In addition, the growth of domestic credit reduces the incentive for the private sector to borrow from external sources, which negatively affects the exchange rate and the inflation rate, creating pressure for macroeconomic instability. Therefore, policy makers usually adopt policies to stimulate domestic credit growth, such as public bailouts, deposit insurance or general guarantees, capital injections and nationalization of troubled banks (Albaity, Mallek, Hanifa, & Al –Tamimi, 2022).

When considering this topic, it is necessary to start from the fact that banks have two basic products, namely: credits and deposits (Gospodnetić, 2017). The word credit comes from the Latin word "credo" which means "to believe". From this we find the theory of credit, which essentially represents a debtor-creditor relationship between two subjects - the lender and the recipient of the loan - based on trust. It follows that the basis of the loan is trust, which must exist between the lender and the recipient of the loan. The amount of the approved loan is called the principal. Since the principal is

given in the present moment and is returned in the future, the recipient of the loan pays the lender a certain compensation. This compensation is called interest (Zolak Poljašević & Berber, 2024). It is customary for the interest to be expressed as a percentage of the approved principal. This percentage is called the interest rate (Kodžoman, 2016). A large part of commercial loans consists of four different types of loans: asset-based loans, cash loans, trade finance agreements and leasing. All these loans are senior and secured; however, they differ in the type of collateral that backs them (or, to be precise, the net return on the sale of the collateral) (Ivashina, Laeven, & Moral-Benito, 2020). Bank loans are the most common source of external financing for many SMEs and entrepreneurs who often rely heavily on direct debt to meet their start-up, cash flow and investment needs. However, large companies, corporations, joint - stock companies also use banking lending services (Belanova, 2021).

Deposits represent the bank's liabilities, sources of funds, where the bank has an obligation to their owners, i.e. depositors. The bank must adjust the structure of its placements to the maturity of the financing sources (Radović & Zorić, 2015). Deposits are deposited (invested) funds with a bank or other person to secure or consolidate certain business activities and savings (Pirović, 2016).

How do banks decide which companies to lend to and how does that decision depend on their situation and the characteristics of their borrowers? Healthy, well-capitalized banks may feel more comfortable financing risky deals, due to their ability to absorb potential losses, compared to less healthy banks. The latter may be more sensitive to risk, taking into account their more limited capacity to absorb losses. Divergently, weaker banks may be more inclined to adopt more lenient credit standards, with the aim of increasing their revenues (Faccia, Hünnekes, & Köhler-Ulbrich, 2019).

The bank, as a lender, has a certain risk. Therefore, banking operations include certain banking risks that need to be borne, and this is one of the characteristics of modern operations. The bank, using scientific methods of financial management, tries to have a preventative effect on the occurrence of risks; that is, it wants to reduce them to a minimum.

Credit risk can be defined most simply as the possibility that the borrower or other contracting party will not fulfill their obligations in accordance with the agreed terms. As the Basel Committee points out, the goal of credit risk management is to maximize the yield of the credit portfolio while maintaining exposure to credit risk within acceptable parameters. Banks must manage the credit risk of the overall portfolio, as well as that which lies in individual loans or transactions (Dragosavac, 2012). Credit risk management is part of comprehensive management, but also part of the control system. Credit risk can be considered one of the biggest risks because it is associated with every active trade. Banks have generally pursued a risk management strategy that incorporates the principles of the risk management process including risk identification, monitoring and measurement. The goal of credit risk management is to maintain business efficiency and business continuity (Spuchlakova, Vlaškova, & Adamko, 2015). Credit risk management in financial institutions has become more important not only for the performance of financial transactions, but also for protection against the crisis that the industry is experiencing (Getahun, Anwen, & Bari, 2015). Credit risk is therefore defined as the possibility that the debtor of the bank or the other contractual party will not fulfill their obligations in accordance with the agreed terms.

The objective of credit risk management is to maximize the bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks should manage the credit risk inherent in the entire portfolio, as well as the risk in individual loans or transactions. Banks should also consider the relationships between credit risk and other risks. Effective credit risk management is a crucial component of a comprehensive risk management approach and key to the long-term success of any banking organization.

Liquidity risk is the basic risk determined by the market conditions of a security or any other investment property. Liquidity itself is defined as the marketability of investment assets, that is, the ability to sell investment assets at expected prices. The smaller the possible deviations from the expected prices, the higher the liquidity risk and vice versa, the larger the possible deviations from the expected prices, the lower the liquidity (Puljiz, 2016). Liquidity risk generally does not cause a reduction in capital. The causality is exactly the opposite: the reduction of the company's capital (long-term loss) eventually leads to the insolvency of the company (ie, the loss of its liquidity). In the case of insolvent companies, the loss of their liquidity is the primary, immediate reason for the termination of their activity. Only in extreme cases where companies experience a liquidity crisis does the crisis affect their solvency – the company must sell off its assets at a loss or seek any available credit assistance, usually on less than favorable terms; this reduces its solvency, and subsequently its liquidity (Blahova, 2012). Liquidity crises are not a new phenomenon and banks have suffered from them throughout history. There are several types of liquidity, just as there are several indicators of liquidity, which will be discussed further below (Golubeva, Duljic, & Keminen, 2019).

Market risk is the risk that occurs during unfavorable market price movements. The bank can expect this type of risk as a result of undertaking speculative business or foreign exchange operations. Each component of risk includes general market risk and specific risk that arises due to the specific structure of a bank's portfolio (Tica, 2016).

Operational risk is the risk of loss due to inadequate or failed internal processes, people and systems or external events, including legal risk. Operational risk can be viewed in a narrower and broader sense (Matić, 2008).

Strategic risk is the possibility of negative effects on the bank's financial result or capital due to the absence of appropriate policies and strategies, and their inadequate implementation, as well as due to changes in the environment in which the bank operates or the lack of appropriate response of the bank to these changes (Kovačević, 2016).

Strategic risk is the possibility of negative effects on the bank's financial result or capital due to the absence of appropriate policies and strategies, and their inadequate implementation, as well as due to changes in the environment in which the bank operates or the lack of appropriate response of the bank to those changes (Prga, Vrdoljak, & Šverko, 2009).

In order to avoid and minimize all these aforementioned risks, it is necessary to work on it, through the analysis of financial statements with the help of financial indicators. Financial indicators represent a ratio or mathematical relationship between two quantities. Financial ratios are used to compare different figures from financial statements in order to obtain information about the overall performance of a company.

While calculating a ratio is a simple arithmetic operation, interpreting it is more complex. In this sense, interpretation is what makes financial indicators a useful tool for market participants, not calculation itself. Ratio analysis is defined as the systematic use of ratios to interpret financial statements so that a firm's strengths and weaknesses, as well as its historical performance and current financial position, can be determined. The information needed for ratio analysis is derived from financial statements, and some ratios often link accounts from different financial statements, such as the balance sheet and the income statement. Financial ratios can be interpreted as hints, indicators, or red flags regarding significant relationships between variables used to evaluate a company's performance. Some of the most important questions to answer are whether all resources were used efficiently, whether the profitability of the business met or even exceeded expectations, and whether financing choices were made rationally. Creating shareholder value ultimately requires positive results in all these areas that will lead to favorable cash flow patterns that exceed the company's cost of capital (Kharatyan, Nunes, & Lopez, 2004).

Calculation of financial indicators can lead to favorable behavior of subordinates due to the objectivity and reduced uncertainty of such measures. Financial indicators are considered "lagging" indicators in the sense that they are the result of other earlier actions, mostly quantitative in nature. Kaplan and Norton (Harvard Business Review, 2008). they create balanced scorecards (BSC), where one of the groups of indicators are financial indicators. The BSC method is widely used around the world to assess business performance. Analysis of financial indicators, obtaining additional information and knowledge about the financial status of the organization are used in decision-making, but eliminating deficiencies creates conditions for improving the performance of the organization and its results can be evaluated with financial indicators (Kotane & Kuzmina-Merlino, 2012). Processes that existentially threaten the functioning of individual companies and the economy as a whole relate to the inability to regularly settle obligations (liquidity crisis), the inability to pay debts (solvency crisis), the inability to achieve the necessary level of profit. (crisis of profitability), and the inability to remain competitive on the market (crisis of competitiveness). All these processes are closely related and very important, and liquidity is most often put in the foreground (Jovanović, Todorović, & Grbić, 2017).

The most important financial indicators are indicators of liquidity, solvency, profitability, activity and investment. Liquidity indicators measure the company's ability to meet short-term obligations. The most commonly used liquidity indicators are the current liquidity ratio, the accelerated liquidity ratio, the current liquidity ratio, and the financial stability ratio (Janus, 2010).

Indebtedness indicators can be classified into static indicators and dynamic indebtedness indicators. The balance sheet, as a source of data, imposes a static approach to determining indebtedness, tying it to a certain period of time (Rovčanin, 2004). The approach to financial leverage through the income statement enables a dynamic approach to the consideration of financial leverage. Indebtedness indicators include: indebtedness ratio, self-financing ratio, interest coverage ratio, etc.

Profitability refers to the yield in relation to the total assets employed or to the principal or to the total income (Bolčić, 2016). Types of profitability indicators are: gross profit margin, operating margin, net profit margin, return on total assets and re-

turn on equity ROE. The assessment of profitability is very complex, and is based on several criteria (Lalić, Jovičić, & Lukić, 2021).

Activity indicators are also known as turnover ratios; the general rule says that it is better for the turnover ratio to be as large as possible, i.e. that the bonding time of the total and individual types of property is as short as possible (Janus, 2010). Activity indicators measure the efficiency with which a company uses its own resources and the speed with which assets circulate in the business process. In addition, if the turnover ratio is known, then it is possible to calculate the average days of tying up funds, i.e. average duration of turnover. This group of indicators includes turnover ratio of total assets, receivables ratio, supplier turnover ratio, inventory turnover ratio, etc.

Investment indicators, along with profitability indicators, are mostly used by investment analysts to make a decision on investing in shares. The indicators are calculated on the basis of the balance sheet and the profit report (Janus, 2010).

METHODOLOGY

The limitation of time series is the reason for applying linear regression to estimate the trend. The research will show the financial indicators for three years, 2018, 2019 and 2020, in a well-known company from BiH (joint-stock company), and then it will show what decisions companies and banks can make based on those indicators. It will also be shown, through the calculations that will be presented below, why certain decisions, those based on financial indicators, are of better quality compared to those made based on the subjective assessment of a certain person.

RESULTS OF THE DISCUSSIONS

In this part of the work, the calculations of the indicators used in the financial analysis, will be presented. The same will be shown in the following table.

Table 1. Calculation of Indicators

Indicators	2018.	2019.	2020.
Liquidity Indicators			
Current liquidity coefficient	1,12	2,30	1,18
Coefficient of accelerated liquidity	1,15	2,50	2,58
Current liquidity coefficient	1,71	3,20	3,90
Coefficient of financial stability	0,80	0,80	0,90
Debt Indicators			
Debt coefficient	0,90	0,54	0,21
Coefficient of own financing	0,44	0,74	0,83
Financing ratio - Financial leverage	0,90	0,50	0,30
Interest coverage coefficient	10,7	22,8	14
Profitability Indicators			
Gross profit margin	52,2%	51,2%	50,9%
Operating margin (EBIT)	10,3%	11,6%	15,9%
EBITDA margin	29,2%	18%	17%

Net profit margin	15,3%	10%	10%
Return on Total Assets (ROA)	14,5%	10,3%	9,4%
Return on Equity (ROE)	22,3%	16,3%	10,2%
Activity Indicators			
Asset turnover ratio	0,99	0,98	0,94
Receivables turnover ratio	20,15	10,12	5,3
Claims collection days	13	18	21
Supplier turnover ratio	6,13	3,15	5,54
Accounts payable payment days	51	69	63
Inventory turnover ratio	2,13	3,00	3,02
Inventory turnover days	111	92	93
Investment Indicators			
Earnings per share	1,15	1,10	1,12
Dividend per share	0	0	0
Total return on equity (P/E)	1,13	1,8	1,15

Source: Authors

Observing the period from 2018 to 2020, it is concluded that the liquidity indicators are at a sufficiently good level. As can be seen, the ratio of current liquidity is above 1, so the company has enough money to settle its own short-term obligations. The coefficients of accelerated liquidity throughout the observed period are extremely high. In 2019, the accelerated liquidity ratio had a value of 2.50, which is above the recommended values. As a rule, the current liquidity ratio should be, but not necessarily, greater than 2. The ratio stated here in 2018 and 2019 is greater than 3, which is above the recommended value. Therefore, it can be concluded that the observed company is "too liquid" and that the calculated coefficients significantly exceed the upper limit, especially considering 2018 and 2019. The coefficient of financial stability for the observed company, which is the subject of analysis in 2018, is 0.80. According to the rule, this indicator must be less than or equal to 1, that is, long-term assets should be less than the sum of capital and long-term liabilities. The general conclusion that can be made is that the company is financially stable, that the assets and liabilities are matched by maturity, and that a significant part of the current assets is financed from long-term sources, which is confirmed by the liquidity coefficients. However, overemphasized current liquidity indicates a potential threat to profitability.

The debt coefficient indicates how much debt a particular company has. This indicator should be 0.5 or less. In 2019, the debt ratio of the company under analysis was a low 0.54, and in 2020 it was only 0.21. The coefficient of own financing indicates the ratio of own financing of the company's operations. In 2019, the indicated indicator is 0.74 and in 2020 it is 0.83, which indicates that the greater part of the property is financed from own sources. The ratio of total liabilities and capital should be 1:1, but in the modern business economy financial leverage is used to the maximum, so the acceptable ratio is 70:30 in favor of liabilities. The aforementioned indicator cannot be considered separately during the analysis, it is observed in parallel with the company's

strength in generating income, profitability margins and the ability to generate cash flows for meeting obligations. It is desirable that this indicator be as high as possible. In 2019, the interest coverage ratio is 22.8, which means that the available operating profit increased by depreciation (EBITDA) is 15 times higher than the amount of interest.

Net profit margin shows the relationship between net profit and total revenue. In the example that is the subject of the analysis, the net profit is 15.3% in 2018 and is at a satisfactory level. Gross profit margin represents the difference in price, i.e. the difference between the cost price of the product and the selling price. Through the presented period of 3 years, it can be stated that the gross profit margin recorded a decrease. There can be many reasons why this happens and it is up to the manager to recognize the real reasons. Also, it is up to the manager not to make a mistake in estimating the reduced gross profit margin. EBIT in 2019 recorded an increase compared to the previous period. The decrease in operating expenses and the decrease in depreciation expenses influenced the increase in the operating margin. EBITDA margin i.e. operating profit before amortization decreased initially, then increased by only one percent. The profitability of the assets measures the return that the company has achieved on the total assets, i.e. on total engaged funds. The realized return on total assets is 14.5% in the first year of analysis, and then decreases. It can be said that this is satisfactory and that the analyzed company adequately manages the hired funds. The indicator of return on capital in the last year of analysis is 10.2%, which is a satisfactory value. However, it is evident that it has also decreased.

The turnover ratio of total assets shows the relationship between total income and total assets, i.e. how many times in one year assets are converted into income, and it is desirable that it be at least 1. In the specific case, it can be concluded that the indicated indicator is below the required. The receivables turnover ratio is used to calculate the duration of receivables collection, i.e. it partly defines the quality of part of current assets, i.e. claims. The higher the turnover ratio, the shorter the days of tying up funds, i.e. the shorter the period of collection of receivables, i.e. receivables are collected faster. Observing the period of the last three years, it is evident that the receivables collection period has been extended, which indicates that the company credits certain customers for more than 30 days or that there are certain disputed receivables. The stock turnover period in the last three years has been without significant changes, 100 days.

The days of paying payables to suppliers in 2019 are short. A long period of payment of obligations towards suppliers (over 90 days) indicates irregular servicing of certain obligations, i.e. points to the fact that it breaks payment currencies, which can ultimately result in account blocking. Profit per share in 2019 increased compared to the previous reporting period, due to the increase in net profit.

CONCLUSION

Users of banking services have two key products at their disposal, namely a loan and a deposit. A loan is a sum of money that a certain user of banking services wants to take, with the payment of a certain interest for the same, while a deposit is a sum of money that the user, or client, entrusts to the bank for use for a certain fee. Banking business carries with it a certain risk. There are several forms of risk, namely: credit risk, liquidity risk, market risk, operational risk, and strategic risk. All these risks have

an important place in the bank's operations, and the bank wants to minimize and overcome them over time, and to successfully continue its operations. In order to see if a certain legal entity can get a certain loan, it is necessary to check the financial health of a certain institution. In order to achieve this, it is necessary to check the financial indicators, and when we talk about them, we are talking about liquidity ratios (current, current, accelerated liquidity and financial stability), indebtedness (indebtedness ratio, own financing, financial leverage, coverage interest, repayment capacity), profitability (net and gross profit margin, operating profit margin, EBITDA and net margin, and profitability of assets and return on capital), activities (turnover ratios of total assets, turnover ratio of receivables as well as days of tying up funds, days of payment liability to the supplier), and investments (earnings per share, dividend per share and profitability of the share). In the research part, the previously mentioned coefficients were investigated, on the example of a Bosnian company, a joint-stock company, which is listed on the Sarajevo Stock Exchange. As the main conclusion of the research part, it can be stated that in order to make correct financial decisions, it is necessary to follow the position of science, therefore it is necessary to use financial indicators and, especially, their interpretation. Through the work, primacy is given to financial indicators in the process of making uncertain business decisions in banking business, in relation to subjective assessments. Therefore, subjective analysis cannot be relevant or the basis for making decisions about crediting business organizations, but rather it must be financial methods, i.e. calculation and analysis of financial indicators.

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

RENEWABLE ENERGY SOURCES AS A PATH TO SUSTAINABILITY: BIOMASS ENERGY POTENTIAL IN AGRICULTURE

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Abstract: *The main purpose of this paper is to identify and discuss challenges and opportunities of using biomass in agriculture. The importance of biomass supply chain is thus emphasized. The main objective is to identify all the challenges of assessing the potential of biomass as well as the challenges in collection and storage of biomass residuals in agriculture on the example of Croatia. Methodology framework for determining potential locations for collection and logistics centers and establishment of the value chain is proposed and is based on the Herfindahl-Hirschman Index (HHI) and concentration rates by counties. The scientific contribution of the paper is seen in filling the research gap on biomass potential and organization of the biomass supply chain. Research results and policy recommendations can be informative for government decision making as well as for designing and implementing national bioeconomy strategy, but they can also be useful for analyzing the biomass supply chain and designing new business models with the purpose of efficiently using biomass potential.*

Keywords: *sustainable development, biomass potential, Croatia, renewable energy sources, Herfindahl-Hirschman Index*

JEL classification: *F6, F1.*

INTRODUCTION

Renewable energy sources are becoming an integral part of energy sustainability. Global and regional energy requirements put emphasis on decreasing greenhouse emissions and replacing traditional non-renewable sources with renewable ones. Trend of increased use of bioenergy has been recorded in recent years, especially in developing countries with limited access to affordable, accessible, and reliable energy sources

(Ilić et al., 2018). The peculiarities of biomass as an energy source in relation to other forms include the possibility of its use beyond the place of origin, the possibility of storage, allowing a continuous process of energy production, and satisfying sustainability criteria.

The main objective of this paper is to identify potential milestones in biomass use and to discuss all the challenges of assessing the potential of biomass in the Republic of Croatia. Furthermore, organization of the supply chain is analyzed, specifically collection and storage of biomass remaining after the production and processing of agricultural products is considered. The analysis of the biomass potential was based on data from the national Register of Agricultural Holdings. Estimation of potential locations for collection and logistics centers was done using the Herfindahl-Hirschman Index (HHI) by counties. The scientific contribution of the paper is seen in filling the research gap on biomass potential and organization of the biomass supply chain.

The paper consists of five parts. After the introduction follows the literature review in which recent studies on biomass potential, supply chains and plant locations were included. The third part of the paper is the methodology and in the fourth part results and discussion are provided. The fifth part is the conclusion.

LITERATURE REVIEW

The EU's Common Agricultural Policy (CAP) shapes international supply chains through production and consumption effects (Rudolf and Wieck, 2020). Agricultural supply chains affect various sustainability dimensions, mostly those focusing on food security and availability. Complex supply chains with many parties involved have been prevailing so far. In recent years, sustainable development goals have emphasized the need for shorter supply chains that can complement traditional long chains and modify them in a way they become important drivers of sustainable and equal development (Hoang, 2021).

At the European Union (EU), the New Industrial Strategy for Europe was launched in 2020 with the main aim of ensuring climate neutrality and digital leadership. To make the EU more competitive, greener, and more circular, it is necessary to ensure a secure supply of clean and affordable energy and raw materials. Renewable energy sources are therefore the key factor in ensuring the EU's energy independence. All European countries have decided to incorporate into their energy development strategies and plans to significantly increase the use of renewable energy sources and to implement the necessary legislative framework for implementation of those plans. Having in mind different renewable energy projects, the following three main incentive measures can be distinguished in the EU: guaranteed tariffs, mandatory quotas in combination with green certificates and the system of public tenders/contracts, and in addition to the above measures there are various complementary mechanisms such as investment subsidies and fiscal measures (Raguzin, 2011).

Government policies and incentives affect the biomass supply chains in the long-term. However, there are other operational uncertainties that affect supply chains and require immediate adjustments, such as biomass quality and price, biofuel demand or production costs (Saman Pishvaee, 2021). International trade and long-distance transportation also have an important role in many biomass supply chains, supporting countries without sufficiently developed national or regional markets for biomass

(WBA, 2018). According to (Kumar Gosh, 2016), some of the most common obstacles in the biomass supply chain involve transport costs, lack of government support, price determination mechanism and lack of demand side network. The author proposes introducing implantable government policies, subsidies, tax and tariff structure. In many countries there are no clear rules for using biomass resources in a comprehensive manner nor penalties for its misuse. Biomass energy industry is not managed and there are no mechanisms that ensure the implementation of national standards (Raychaudhuri and Kumar Gosh, 2016). Modern agrarian economies are circumventing the manufacturing sector to directly develop their service sector as a consequence of greater participation in agricultural global value chains (Lim and Bellamare, 2021).

Recently, COVID-19 pandemic has disrupted supply chains in almost all sectors, including bioenergy. The pandemic intensified the risk of long-term supply chain functioning and sustaining the bioeconomy (Andiappan, 2021). On the other hand, (Kulišić et al., 2021) investigate how biomass supply chains could help in post-COVID-19 recovery. Authors conclude that investments in supply chains can boost economic development and contribute to cleaner and resilient energy systems. Digitalization and new technologies offer solutions for managing supply chains in the most efficient manner. For example, blockchain technology can provide greater transparency, traceability and sharing of real-time information among stakeholders in the biomass supply chain (Silva, 2018). It can ensure information on the quality and origin of the biomass from suppliers and supply availability, making the functioning of the supply chain more efficient.

Research into the potential of biomass as an energy source has gained much attention in the past few years. Different methods are proposed for determining biomass plant and collection center locations as a significant part of the supply chain.

When designing a plant, the necessary precondition is to understand fundamental bulk characteristics of current and future sources of fuel. The foundation for the design of an efficient plant that has the capability to operate at its intended output over its life cycle is based on a specific fuel form (Ilić et al., 2018).

(Akgul et al., 2022) employed designing optimum biomass to the bioenergy supply chain for agricultural activities using Geographic Information System and Simulated Annealing algorithm to overcome a real-world problem in Turkey. Authors researched the cost of transportation, transmission, and optimum location for a plant. Research results showed that the installation of one power plant is the optimum. (Sutcu et al., 2020) also determined appropriate places for biomass power plant in Turkey by using facility location problem and then Mixed Integer Programming Model which maximizes the potential value of facilities. Their results revealed the best options would be to select 3, 5 or 7 cities in Turkey, and listed them as well as the investment needed.

(Nosratinia et al., 2021) used the fuzzy-analytical hierarchy process method to weigh the locating criteria in the geographical information system. The results indicated certain zones in southern parts of the Tehran province in which the industrial livestock farms become frequently widespread and the suburb areas of smaller cities on the eastern part of the Tehran province are the most proper areas for biomass plant location.

Using a macro screening approach (Van Deal et al., 2021) determined the most interesting locations for the Limburg province in the Netherlands within a minimal

time span. However, the downside of this method is that it cannot select the best location among the alternatives.

By employing a combination of Multi-criteria Analysis (MCA) and Geographical Information Systems (GIS) (Woo et al., 2018) identified optimal locations for prospective biomass power plants. Based on the results of different scenarios it was determined that three biomass plants within a radius of 80 km is the best option for Tasmania's future biomass energy plant.

METHODOLOGY

The purpose of this paper is to give an estimation of biomass potential in Croatia and to define the locations of collection and logistics centers. Accordingly, the following methodological steps were conducted:

1. Collection and analysis of relevant literature on biomass potential, supply chains and plant locations
2. Case study analysis
   a. Analysis of biomass potential in Croatia by presenting data from the National Register of Agricultural Holdings
   b. Estimation of potential locations for collection and logistics centers using the Herfindahl-Hirschman Index (HHI) and concentration rates by counties in Croatia
   c. Determination of current biomass energy use status and challenges of future development in Croatia
3. Identification of policy implications and recommendations in order to use biomass potential and establish efficient supply chains in agriculture.

The first step of the research was the analysis of scientific and professional literature on biomass potential and supply chains which enables understanding of a wider context of biomass usage potential. Secondly, collection, processing, and analysis of data from the Register of Agricultural Holdings was conducted on a county level for the period 2016-2020. The average values for the period 2016-2020 were used and also for 2020 separately, in order to get a better insight into the current situation. The main aim was to determine the potential locations of collection and logistics centers of agricultural biomass. Two criteria were used to determine the collection and logistics centers' location: (1) the criteria of the total area of selected plant species by counties are imposed, (2) the criterion of the concentration of certain plant species by counties. Based on the conducted research, certain limitations and gaps in the functioning are recognized and policy recommendations are provided.

RESULTS AND DISCUSSION

The following part contains the results of the analysis of plant biomass potential in Croatia. Methodology framework for determining potential locations for collection and logistics centers and establishment of the value chain is presented.

Data on the areas of selected plant species by counties for the period 2016-2020 are presented in Table 1. The average annual area of tobacco in the period 2016-2020 amounted to 3,777.34 hectares, and the largest part fell on Virovitica-Podravina County (almost 80%). The average annual area of fodder plants was 88,097.99 hect-

ares, and the most fodder plants fell on Osijek-Baranja County (16.2%) and Zagreb, Brod-Posavina, Sisak-Moslavina and Bjelovar-Bilogora counties (all over 8%). The average annual area of karst pastures was 74,340.47 hectares at the national level, with Lika-Senj County (27.3%), Zadar County (23.4%) and Šibenik-Knin County (16.3%). The Split-Dalmatia and Primorje-Gorski Kotar counties are also significant with a share of over 10% in the area of karst pastures. In the same period, there were on average 100.63 hectares of short patrol culture in Croatia, of which 45% in Međimurje County, 30% in Virovitica-Podravina County and 10% in Osijek-Baranja County. As for meadows, in the period 2016-2020 there were 91,665.73 hectares in Croatia, of which over 13% in Bjelovar-Bilogora and Lika-Senj counties and about 10% in Zagreb and Sisak-Moslavina counties. The average annual area of medicinal plants in the same period was 7,403.74 hectares, of which over 55% is in Virovitica-Podravina County, followed by Osijek-Baranja County with 22% of the total area of medicinal plants. Olive was represented by an area of 14,316 hectares in Croatia, of which 26% in Split-Dalmatia County, 20% in Istria County, 17% in Zadar County and about 15% in Šibenik-Knin and Dubrovnik-Neretva County. Other industrial plants were represented by 1,746.24 hectares in Croatia, of which 32% were in Virovitica-Podravina County and then 26% in Sisak-Moslavina County. In the same period, there were 4,603.48 hectares of pastures per year in Croatia, of which 41% were in Sisak-Moslavina County, 14% in Osijek-Baranja County and 11% in Bjelovar-Bilogora County. Noble vines were represented by 17,095.40 hectares in Croatia, of which the highest was in Istria (15%), Osijek-Baranja County (13%) and Dubrovnik-Neretva County (10%). Vegetables were represented by 19,429.13 hectares in Croatia, and the most in Međimurje County with almost 16%. There were an average of 324.59 hectares of nurseries per year in Croatia, most of them in Osijek-Baranja County (32%) and Međimurje County and the City of Zagreb (13% each). As for soybeans, there was an average of 78,869.73 hectares per year in Croatia, most of them in Vukovar-Srijem County (31%), Osijek-Baranja County (22%) and Virovitica-Podravina County (14%). Regarding sugar beet, out of a total of 14,046.86 hectares, 50% is located in Osijek-Baranja County and 39% in Vukovar-Srijem County. Thus, the share of these two counties in the area of sugar beet is 89%. The situation is similar with oilseeds. Out of the total annual 89,263.59 hectares in Croatia, the most represented are Osijek-Baranja County with 41% and Vukovar-Srijem County with 22%. These two counties account for a total of 63% of the area of oilseeds. Along with them, Virovitica-Podravina County stands out with a share of 10% in the total area of oilseeds. Out of a total of 33,227.05 hectares of fruit species in Croatia per year in the observed period, the highest, about 15% of the area is in Osijek-Baranja County. Finally, with regard to cereals in the observed period, the average annual area was 507,309.24 hectares at the national level. Most of them are in Osijek-Baranja County (23%), Vukovar-Srijem County (14%) and Bjelovar-Bilogora County (10%).

Observing the total area of observed species at the country level, 48.52% falls on cereals, followed by meadows (8.77%), oilseeds (8.54%), fodder plants (8.43%), soybeans (7.54%) and pastures (7.11%). Of the other species, fruit species stand out with over 3% (Figure 1).

Table 1 Area of selected species by counties, ha, average 2016-2020

	Tobacco	Fodder crops	Karst pasture	Culture of short patrols	Meadows	Medicinal herbs	Olive	Other industrial herbs
Zagreb County	0,58	7.206,47	411,55	1,16	9.336,21	78,11	9,82	87,37
Virovitica-Podravina	3.017,57	4.581,85	0,60	30,37	1.785,47	4.099,10	1,34	558,51
Požega-Slavonia	625,60	3.615,99	0,70	0,98	2.372,47	60,77	2,43	17,94
Brod-Posavina	0,99	7.356,74	0,17	0,96	1.719,75	15,33	2,10	18,37
Zadar	0,00	1.452,60	17.361,74	0,00	4.337,89	279,80	2.488,36	4,65
Osijek-Baranja	44,26	14.303,74	39,78	10,27	1.262,26	1.597,94	5,38	172,87
Šibenik-Knin	0,00	561,70	12.150,51	0,00	2.961,58	199,69	2.085,67	0,50
Vukovar-Srijem	15,19	4.140,09	3,71	4,18	279,16	67,99	0,62	119,06
Split-Dalmatia	0,00	609,06	8.619,89	0,00	1.140,24	180,80	3,762,60	3,39
Istria	0,00	5.298,70	2.047,86	0,04	2.516,51	87,90	2.899,71	17,07
Dubrovnik-Neretva	0,20	45,48	980,16	0,00	128,21	34,56	2.132,97	0,00
Krapina-Zagroje	0,00	1.431,82	2,71	0,13	6.329,51	8,21	4,82	8,61
Međimurje	0,00	1.025,38	0,41	45,04	1.353,00	95,15	0,97	26,50
City of Zagreb	3,02	1.650,95	2.053,20	0,95	2.759,26	51,94	197,83	89,18
Sisak-Moslavina	0,00	7.422,82	0,00	3,19	8.958,55	245,52	4,45	450,60
Karlovac	0,00	5.375,99	2.462,76	0,00	7.421,49	19,53	1,32	18,04
Varaždin	0,00	995,04	0,00	1,91	3.159,41	10,38	4,55	25,40
Koprivnica-Križevci	44,05	6.480,35	68,00	0,08	7.254,68	99,46	2,44	36,08
Bjelovar-Bilogora	25,81	7.751,68	0,00	0,61	12.238,09	141,14	0,69	91,92
Primorje-Gorski Kotar	0,08	451,86	7.856,62	0,74	2.355,32	25,53	572,36	0,22
Lika-Senj	0,00	6.339,69	20.280,08	0,00	11.996,67	4,89	135,55	0,00
Total	**3.777,34**	**88.097,99**	**74.340,47**	**100,63**	**91.665,73**	**7.403,74**	**14.316,00**	**1.746,24**

	Pastures[a]	Noble vine	Vegetables	Nursery	Soya	Sugar beet	Oil seed	Fruit sorts	Cereals	Total
Zagreb County	253,36	606,21	999,06	6,81	2.805,83	0,12	1.303,82	1.657,13	29.888,47	54.652,11
Virovitica-Podravina	288,88	399,10	1.444,45	14,69	11.166,48	545,09	9.035,39	2.289,19	41.305,85	80.563,94
Požega-Slavonia	234,21	1.397,37	602,01	1,42	4.023,25	310,96	2.924,51	1.827,80	23.257,91	41.276,34
Brod-Posavina	340,49	198,85	521,69	14,74	6.931,81	452,37	6.099,81	2.475,69	34.231,41	60.381,28
Zadar	0,16	1.142,00	1.270,96	11,38	2,03	0,00	5,89	1.633,29	1.225,56	31.216,30
Osijek-Baranja	638,27	2.201,23	1.230,09	104,32	17.081,48	6.994,25	36.652,52	4.935,32	118.510,41	205.784,38
Šibenik-Knin	1,31	776,24	133,45	0,00	0,38	0,00	1,64	267,37	388,40	19.528,45
Vukovar-Srijem	140,31	1.568,50	1.399,35	16,19	24.261,07	5.420,59	19.313,50	1.988,21	69.685,11	128.422,82
Split-Dalmatia	0,29	1.379,07	471,47	0,76	7,95	0,00	2,88	656,31	1.126,95	17.961,67
Istria	0,02	2.609,73	1.381,48	0,17	22,86	0,03	42,17	461,37	2.776,33	20.161,96
Dubrovnik-Neretva	0,00	1.759,61	375,90	22,84	0,00	0,00	0,00	2.079,17	25,88	7.584,98
Krapina-Zagroje	55,26	617,27	452,52	0,09	47,92	0,00	223,72	1.011,67	7.916,14	18.110,39
Međimurje	19,67	434,14	3.063,43	41,78	936,66	148,35	2.492,11	1.005,66	17.842,51	28.530,75
City of Zagreb	69,87	628,47	429,14	40,56	670,27	39,83	463,81	2.337,74	5.204,66	16.690,69
Sisak-Moslavina	1.872,07	184,69	432,58	17,28	4.445,43	0,00	1.837,56	1.783,49	23.439,06	51.097,30
Karlovac	70,15	85,16	680,97	0,59	76,65	0,00	101,72	1.555,91	7.956,25	25.826,51
Varaždin	37,23	365,36	1.884,80	16,60	466,38	27,69	1.944,74	821,23	18.106,08	27.866,80
Koprivnica-Križevci	70,39	369,34	830,96	2,29	998,57	98,38	4.581,27	1.206,63	47.747,45	69.890,42
Bjelovar-Bilogora	498,79	113,47	1.154,75	12,06	4.832,78	8,85	2.069,63	2.244,79	52.906,58	84.091,64
Primorje-Gorski Kotar	12,76	248,43	106,63	0,00	76,75	0,33	166,13	315,11	777,18	12.966,05
Lika-Senj	0,00	11,15	563,43	0,02	15,18	0,00	0,77	673,96	2.991,06	43.012,43
Total	**4.603,48**	**17.095,40**	**19.429,13**	**324,59**	**78.869,73**	**14.046,86**	**89.263,59**	**33.227,05**	**507.309,24**	**1.045.617,21**

[a]Data for pastures available only for 2016.

Source: Agency for Payments in Agriculture, Fisheries and Rural Development, Register of Agricultural Holdings (2021).

Determining potential locations of collection and logistics centers is possible by applying different criteria. Based on the available data, the criterion of the total area of selected plant species by counties is imposed, as well as the criterion of the concentration of certain plant species by counties. Of course, a combination of different criteria is also possible. Figure 1 shows the possibilities of using the first criterion - the total area of selected plant species by counties.

Figure 1. Area of selected areas by counties, annual average 2016-2020 (ha)

Source: authors' calculation; Agency for Payments in Agriculture, Fisheries and Rural Development; Register of Agricultural Holdings.

In order to calculate the concentration of the observed species by counties, the Herfindahl-Hirschman Index (HHI) was calculated for the above types of plant production. This index is an absolute measure of spatial concentration and one of the most commonly used concentration measures. The lowest value of the index depends on the number of regions (counties), i.e., 1/n (in this case 1/21, i.e. 0.048). The Herfindahl-Hirschman index would take a value of 0.048 if all counties participated with equal shares in the total area of crop production. The opposite would be the case if the total area of crop production was concentrated in only one county. The index would then be 1, which is theoretically the highest possible value of this index. In other words, counties with higher HHI have a higher concentration of certain plant species, while counties with lower HHI have a higher representation of more plant species in the total area.

Table 2 shows the order of counties by size HHI for the average annual crop production period 2016-2020. and 2020. Minor differences are noticeable. Higher HHI indicates a higher concentration on individual plant groups.

Table 2 Herfindahl – Hirschman index by counties, average 2016-2020 and 2020

Average 2016-2020		**2020**	
County	**HHI**	**County**	**HHI**
Koprivnica-Križevci	0,491	Koprivnica-Križevci	0,5063
Varaždin	0,447	Varaždin	0,4452
Bjelovar-Bilogora	0,430	Bjelovar-Bilogora	0,4440
Šibenik-Knin	0,425	Šibenik-Knin	0,4272
Međimurje	0,416	Međimurje	0,4250
Primorje	0,408	Primorje	0,4021
Osijek-Baranja	0,377	Osijek-Baranja	0,3990
Brod-Posavina	0,362	Brod-Posavina	0,3869
Vukovar-Srijem	0,356	Vukovar-Srijem	0,3718
Zagreb County	0,350	Zagreb County	0,3711
Požega-Slavonija	0,347	Požega-Slavonija	0,3502
Zadar	0,345	Zadar	0,3477
Lika-Senj	0,327	Lika-Senj	0,3460
Krapina-Zagorje	0,325	Krapina-Zagorje	0,3354
Virovitica-Podravina	0,304	Virovitica-Podravina	0,3181
Split-Dalmacija	0,291	Split-Dalmacija	0,2890
Sisak-Moslavina	0,274	Sisak-Moslavina	0,2708
Karlovac	0,234	Karlovac	0,2324
Dubrovnik-Neretva	0,228	Dubrovnik-Neretva	0,2250
City of Zagreb	0,174	City of Zagreb	0,1977
Istria	0,157	Istria	0,1556

Source: authors' calculation; Agency for Payments in Agriculture, Fisheries and Rural Development; Register of Agricultural Holdings.

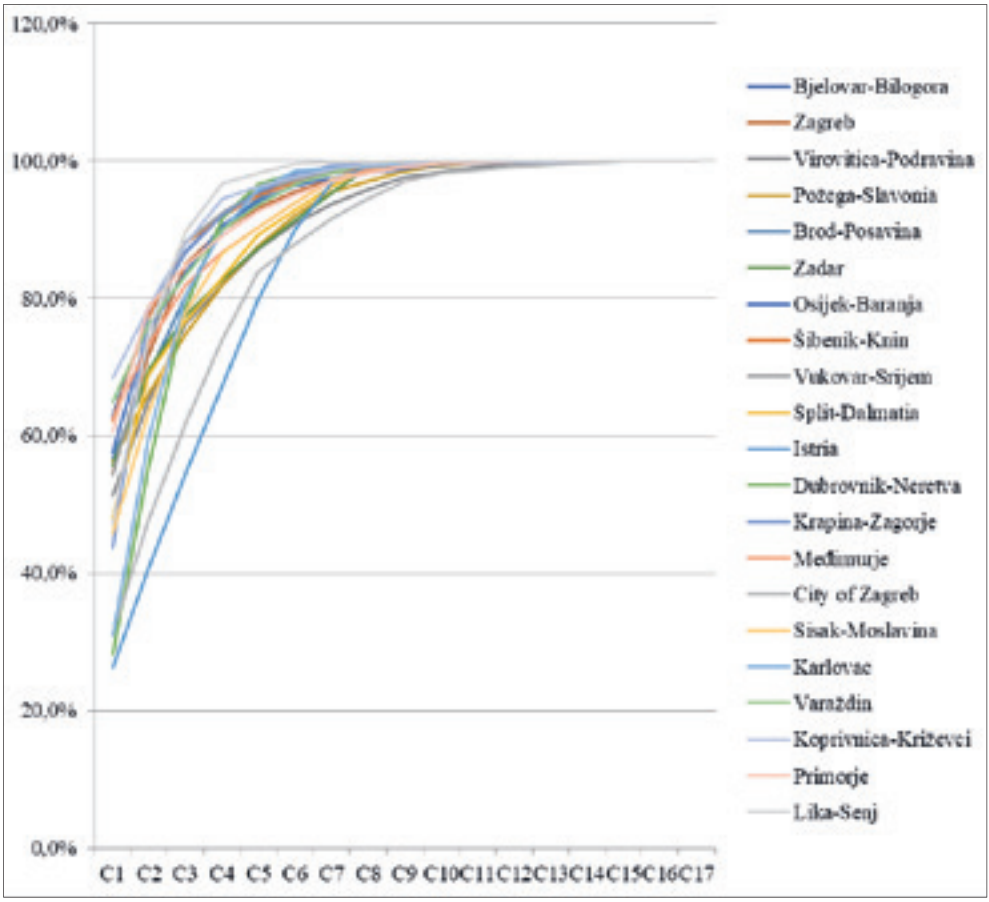
Figure 2. HHI by counties, average 2016-2020

Source: authors' calculation; Agency for Payments in Agriculture, Fisheries and Rural Development; Register of Agricultural Holdings.

Finally, concentration rates were calculated and the summary is shown by Figure 3. Concentration rates show the percentages of areas of individual plant species by county. For example, C1 shows the percentage of the most common types of crop production, C2 the percentage of the two most common types of crop production, C3 the percentage of the three most common types of crop production and so on. These concentration rates allow the application of the principles of efficiency and proportionality to determine the potential locations of collection and logistics centers for the collection of biomass of plant origin.

The energy potential of biomass depends primarily on the amount of biomass available for energy purposes, i.e., surplus biomass from activities such as agriculture (both plant and animal origin), forestry, fisheries and the share of biodegradable industrial and municipal waste (Tomšić et al., 2020). The biggest disadvantage of using

Figure 3. Plant production concentrate rates by counties, 2016-2020



Source: authors

biomass is considered to be its transport (Tomšić et al., 2020). Biomass potential in Croatia was researched by (Ćosić et al., 2011) and they provided potential methodology framework. Authors concluded that Eastern Croatia has the highest energy potential and minimal potential have counties in the South Croatia. (Čikić et al., 2021) advocate for a more rational approach to further increase in energy capacities powered by renewable biomass. By designing different scenarios, they determine available biomass for conversion in secondary energy. Croatia is moving towards low-carbon economy but the use of biomass as an energy source is far from planned (Biljuš and Sertić Basarac, 2021). However, newer data are missing. This is most likely the result of no comprehensive statistical database that includes all agricultural areas, so the current potential cannot be defined. Additionally, Croatia does not have a strategic document that would determine and guide the use of biomass as an alternative energy source.

In order to develop and efficiently use the potential of biomass as a renewable energy source it is necessary to map all the actors involved in the value chain and to design a strategy and action plan with clear responsibilities. Monitoring the implementation of the action plan and evaluating its outcomes is also a necessary requirement.

CONCLUSION

Renewable energy sources are considered to be the imperative for future development and are determined in numerous strategic objectives. Global environment and the war in Ukraine have additionally revealed the relevance not only of renewable energy sources but of self-sufficiency in the supply of renewable energy sources and of energy security as well. From a wide specter of renewable sources, biomass has great potential which has been proven by the latest trends and studies. The analysis conducted in this paper revealed the necessary steps and guidelines for proper use of national biomass in agriculture in the Republic of Croatia. The criteria used in this research can be used for determining the potential locations for logistics centers but there are various other steps needed. Based on the research, the following policy recommendations are put forth. It is necessary to create a statistical database with national data about biomass in agriculture covering all areas. It is also necessary to analyze and map the existing infrastructure to determine its use potential. Value chains need to be identified and analyzed so new business models can be designed that would increase the efficiency of the vale chain. Strategic framework is missing along with the action plan with clearly defined actors and responsibilities, which is a necessary element of efficient use of biomass as a renewable energy source. Thus, national strategy and action plan for biomass use should be designed. Implementation and monitoring is crucial for all of the activities to be carried out as planned. Specific challenge is determining the potential of biomass from livestock and fisheries, so full potential form biomass in agriculture can be determined.

Limitation of the research is the fact that only biomass from plants is considered. In further research it would be necessary to include fishery and livestock to reveal the full potential. The methodology framework used in this research can be used for determining the locations for collection and logistics centers, but it is necessary to consider the already existing infrastructure. The idea is not to build something new but to use the existing resources. In order to do this effectively it is necessary to analyze value chains and gaps in it. Based on the analysis it can be concluded that a change of paradigm is necessary, followed by the change in business models so value chain can function efficiently.

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PREGLEDNI NAUČNI RAD / OVERVIEW SCIENTIFIC PAPER

BENCHMARKING INSTRUCTIONAL DESIGN MODELS - ADDIE WINS

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Abstract: *The rapid development of learning and instructional design technology has resulted in the creation of numerous instructional design models. These models are often used as the basis for instructional design courses, providing students with an introduction to the field. The abundance of models can be overwhelming, especially for beginners in the field. This prompts the question - which model is the best to use? The objective of this paper was to review the comparative advantages of selected models and to assist instructors in choosing the most appropriate one. Desk research was conducted to establish a list of qualitative indicators that can be used to evaluate and benchmark selected models. The models (such as ADDIE, SAMR etc.) were examined, and a benchmarking table was created. The paper provided insight into the most important characteristics of the selected models and presented arguments on their advantages and disadvantages. Based on the results of analysis and benchmarking indicators, the ADDIE model demonstrated slight advantages over other models. This paper compares four important models and recommends the ADDIE model as the most complete, structured, flexible, and easy to implement.*

Keywords: *instructional design, ADDIE, SAMR, teaching, education*

JEL Classification: *I29.*

INTRODUCTION

E-learning today demands substantial financial support, particularly in the initial investments required for setting up the e-learning infrastructure, encompassing both hardware and software. While open solutions are available, the primary costs lie in developing high-quality educational content and teaching materials. It's essential to consider the time and potential expenses for training educational system users, ensuring that resources are optimally utilized by applying appropriate pedagogical and me-

thodical principles in the selection and creation of teaching content and the e-learning system.

In the early stages of integrating the Internet and Web into e-learning, the delivery of teaching materials was restricted to online provision. This led to low-quality materials due to the lack of supportive technologies available today. Despite these limitations, they marked the initial pioneering steps in e-learning. It is now imperative to anticipate and precisely define the teaching conditions, learning objectives, and target student groups for any course or materials to maximize learning outcomes.

In the recent period marked by the global COVID-19 pandemic, teaching and learning methods have heavily relied on modern information and communication applications. These applications facilitated the teaching and learning processes with varying degrees of success. Problems arose for those educators who, in their daily work, relied on traditional teaching methods without using information and communication technology (ICT) tools. Teaching materials prepared for traditional methods showed significant shortcomings during this period. There was a need to transform these materials into formats suitable for remote teaching and learning. Instructional design models, which provided recommendations and guidelines for adapting to the new situation, once again became the focus of teachers' work. This paper aims to highlight the importance and flexibility of the ADDIE model compared to other alternative instructional design models.

THE INSTRUCTIONAL DESIGN MODELS – BRIEF LITERATURE REVIEW

Learning theories are the foundation for choosing instructional strategies and help predict their effectiveness accurately. To achieve successful learning outcomes, the science of instruction and instructional design models guide the development of strategies that encourage proper cognitive processes. This paper examines the major learning theories and provides detailed explanations of selected examples of instructional design models. The primary aim of this article is to present the science of learning and instruction as theoretical evidence for the design and delivery of instructional materials. Furthermore, this article furnishes a practical framework for implementing these theories in the classroom and laboratory settings. (Khalil & Elkhider, 2016)

The instructional design models provide recommendations for the planning of the learning process in e-learning systems, as well as precise steps that should be followed during the process of electronic course creation. It is possible to distinguish three general phases in the process of preparation for an e-course: the creation of the e-course, implementation and evaluation of the created e-course. (Popović & Naumović, 2009)

For instance, constructivism emphasizes the importance of students taking responsibility for their learning. This is because the transfer of knowledge is complex, and active student involvement significantly enhances the construction of knowledge within the student's mind. As a result, students are motivated to generate new ideas when they are actively engaged in the learning process. Additionally, collaborative group work facilitates the exchange of experiences among students, leading to a deeper comprehension of the learning material. The constructivist learning model encompasses students' investigative activities and establishing of social and educational communication channels. Embracing an investigative approach allows students to view

mistakes as integral to the learning process. Throughout this journey, students cultivate their own educational culture, ultimately fostering an increase in their learning autonomy. (Mušanović, 2000; Reighlut & An, 2021)

According to Merrill et al (1996), the instructional design presents the practice of creating "*instructional experiences which make the acquisition of knowledge and skills more efficient, effective, and appealing*." (Merrill et al, 1996)

Some researchers argue that behavioural strategies and recommendations for instructional design are primarily used for studying facts, cognitive strategies are used to study processes and principles, and constructivist strategies are used to support advanced thinking that promotes personal knowledge and contextualized learning. (Milosavljević, 2007)

Wagner in its essay argues some critical points for consideration by the instructional designers when engaging in digital experiences. Instructional designers are responsible for creating engaging digital learning experiences. They have to be proficient in writing, clearly presenting ideas, develop moderate technological proficiency, and have an appreciation for design. For the advancement of our profession, instructional designers need to find common ground that unites and facilitates collaboration, regardless of their professional training or work settings. (Wagner, 2011)

Allen and Sites (2012) claim that the instruction provided by companies and organizations is often overloaded with text and lacks engaging learning experiences. Boring instruction is costly, ineffective, and leads to negative attitudes and disrespect from learners. (Allen & Sites, 2012)

This can result in a lack of attention, aversion to the subject, and hindered learning opportunities. It's perplexing that so much boring instruction exists, given its recognized ineffectiveness. Organizations settle for boring and ineffective learning programs due to ineffective management of project risks, excessive focus on upfront analysis, inadequate exploration of alternative design options, excessive emphasis on content presentation over the learning experience, lack of involvement of sponsors, stakeholders, and learners, reliance on design by committee, and the use of outdated methods.

Based on desk research of available literature, we found that practitioners often use the following four models in practice:

- Merrill's Principles of Instruction (MPI),
- Dick & Carey model,
- SAMR model, and
- ADDIE model.

Naturally, this is not an exhaustive list. Other instruction design models in use, mentioned in literature are, for example, Kirkpatrick's Four Levels of Evaluation, Gagné's Nine Events of Instruction, Bloom's Taxonomy and TECH, etc. In this paper, these models were not taken into consideration. (Reise, Carr-Chellman, & Dempsey, 2024)

The ADDIE model was first created by Florida State University to explain the processes involved in developing an instructional systems development (ISD) program for military inter-service training. The name is an acronym of the phrase - Analyze, Design, Develop, Implement, Evaluate. This model was designed to train individuals

effectively for a specific role and could be used for any intra-service curriculum development activity. The steps of the model were revised over the years, and the model became more dynamic and interactive than its original version. The most popular version of the model emerged in the mid-80s. Considering the educational aspects of learning and their effect on the development of online courses, the ADDIE model is perhaps the most widely used model for developing learning materials.(Abernathy, 2019; Branch, 2009; Reiser & Dempsey, 2012)

The Dick and Carey model is an instructional systems design model that emphasizes a systematic approach to designing instructional materials. It includes components such as instructional goals, instructional analysis, and formative evaluation. This model asserts a systems view of instruction, highlighting the interconnectedness of its various elements, such as context, content, learning, and instruction. According to this model, instructors, learners, materials, instructional activities, delivery systems, and learning all collaborate to achieve the desired outcomes. The components of this model are executed iteratively and in parallel with each other, as demonstrated in the illustration. The Dick and Carey model emphasizes a systems approach, viewing instruction as an interconnected process rather than a linear one. (Dick, Carey & Carey, 2015)

The SAMR model (Substitution, Augmentation, Modification, Redefinition) categorizes levels of technology integration in education. It guides educators in moving from basic enhancements using technology to more transformative and innovative practices. SAMR is a model created to assist educators in integrating technology into teaching and learning. Developed by Dr. Ruben Puentedura, the model enables and supports teachers in developing and integrating digital learning experiences with technology. The aim is to transform learning experiences to achieve higher levels of student success. (Blundell, Mukherjee & Nykvist, 2022)

M. David Merrill, a renowned educational researcher and teacher, developed Merrill's Principles of Instruction (MPI), known as Merrill's First Principles of Instruction. These five core principles revolve around task-based learning, emphasizing that effective learning experiences stem from problem-solving. For online learners to comprehensively grasp and apply information in real-world scenarios, active engagement with eLearning content is essential. This engagement encompasses a multi-phase process, including activation, demonstration, integration, and other vital components. Merrill's instructional design model is a set of guidelines to enhance the effectiveness and efficiency of instructional materials. The model emphasizes real-world problem-solving and is structured around five core principles. Merrill's model is based on five core principles: problem-centred, activation, demonstration, application, and integration. (Merrill, 2002)

COMPARISON OF THE INSTRUCTIONAL DESIGN MODELS

Analysing different sources of literature, we decided to select the following key indicators for comparison, ensuring equal representation of models' capacities:

- **Number of phases or steps in implementation** – to understand and evaluate the complexity of the model and needed realisation efforts,
- **Scope of the model** - to understand the scope of the model's applicability to different topics and subjects of teaching,
- **Goals and objectives of the model** – to understand the proposed purpose of

the model relevant from the aspect of the implementation,

- **Instructional strategies** – to understand how flexible the model is towards different instructional strategies,
- **Learner analysis examination** – to understand how and where the analysis of learners' needs happens,
- **Content analysis examination** – to understand how to adapt the content to the learners' needs,
- **Assessment and evaluation topic** – to understand assessment and evaluation within the model,
- **Implementation and delivery issues** – to understand implementation cycle complexity and delivery of the model,
- **Development process** – to understand the complexity of the model development cycle and constraints,
- **Role of instructor/teacher** – to understand the role of the instructor/teacher in all phases of the model.

Table 1 shows the comparative review of indicators for selected instructional design models.

Table 1. Comparative review of indicators for selected instructional design models

	ADDIE	SAMR	Dick&Carey	Merrill's Principles of Instruction (MPI)
Number of phases/steps	5	4	10	5
Scope	Broadly applicable, often underpinned by behavioural and cognitive theories	Broadly applicable to enhance and transform learning with education technologies.	Based on systems theory and behavioural principles.	A broad, constructivist approach emphasizing problem-solving.
Goals and Objectives	Clearly defined at the outset in the Analysis phase	To transform learning experiences so they result in higher levels of achievement for students.	Specific and measurable, developed in the initial stages.	Focused on real-world tasks and problems.
Instructional strategies	Flexible and adaptable to various strategies	Emphasis on education technologies	Detailed and aligned with objectives.	Emphasizes active learning and real-world application.
Learner analysis	Conducted during the Analysis phase to understand learner needs and characteristics	Analysis in the Substitution phase to understand what benefits will come with new education technology	In-depth analysis of learners' needs, entry behaviours, and characteristics	Analysis and understanding of learners' prior knowledge and experiences.
Content Analysis	Systematic and thorough development during the Design phase	Content organised around tasks to be implemented	A systematic approach to breaking down content into smaller units	Organized around real-world problems and tasks.

	ADDIE	SAMR	Dick&Carey	Merrill's Principles of Instruction (MPI)
Assessment and Evaluation	An integral part of each phase, especially in Evaluation	Assessment is present in all four phases	Emphasizes criterion-referenced testing and formative evaluation	Integrated with instructional activities and tasks.
Implementation and Delivery	Iterative, structured and planned in the Implementation phase.	Linear and structural implementation through enhancement and transformation	Iterative and cyclical, allowing for continuous improvement.	Flexible, with a focus on authentic tasks.
Development Process	Linear in nature, but allows for iterative cycles.	Linear in nature, but allows improvements and iteration	Iterative and cyclical, allowing for continuous improvement.	Iterative, with ongoing adjustments based on learner feedback.
Role of the Instructor	Different roles are defined throughout phases, from design to implementation	Role to transform learning experience with educational technologies	A central role in facilitating and evaluating learning.	Facilitator and guide in the learning process.

Source: Authors

RESULTS AND DISCUSSION

Based on the data collected, it is evident that the models have a similar number of phases. The Dick&Carey model differs in that its processes are not grouped into phases. However, this distinction is not critical as the phases in other models consist of multiple steps or processes. Essentially, all models follow a similar structural approach, with minor differences that do not have a significant impact. The ADDIE model's clear and structured approach provides an easy roadmap and follow-up during the implementation of the entire project, making it the preferred model based on this indicator.

The main goal of instructional models is to be widely accepted and implemented universally. The Dick & Carey model is based on systems theory and behavioural principles that are suitable for educational environments at all levels (primary, secondary, and higher education). The ADDIE model builds on this by incorporating cognitive aspects and theories, making it more widely applicable in various professional development settings. On the other hand, the SAMR model focuses more on technology and its impact, and less on cognitive aspects. The MPI model prioritizes problem-solving and takes a more practical approach, less influenced by behavioural and cognitive theories. In summary, the ADDIE model is more general and comprehensive, allowing for a tailored approach similar to the MPI model, which is specifically focused on problem-solving.

The objectives and goals of the models differ slightly. The SAMR model aims to transform the learning experience using various educational technologies based on modern information and communication technologies, while MPI is focused on problem-solving. On the other hand, the ADDIE and Dick&Carey models are more general.

In the case of ADDIE and Dick&Carey, goals and objectives are defined and developed in the initial phase and aligned with the specifics of the individual project. This means that their objectives are more flexible and can incorporate SAMR and MPI objectives. These characteristics give ADDIE and Dick&Carey an advantage in this regard.

If you want to implement strategies that promote active learning and real-world application, the MPI model is the one to choose. The SAMR model is suitable for situations where there is a stronger reliance on technology and a higher level of knowledge in using it. On the other hand, the ADDIE and Dick & Carey models are more flexible, allowing the application of nearly all instructional strategies. This flexibility enables the development and use of technologies and corresponding strategies, as well as the ability to apply a tailored approach to projects with different outcomes and objectives. The advantage of the ADDIE and Dick & Carey models is that they can implement both cognitive and behavioural principles, thereby improving the overall acceptance of the designed or transformed educational materials.

This is a crucial step in instructional design. The capability of models can be a critical factor here. SAMR focuses on the benefits for learners from modern learning technologies. Dick&Carey take a more psychological approach to analysing learners, considering entry behaviours, personal characteristics, and more. MPI aims to understand learners' previous knowledge and experiences for enhancements. In the Analysis phase, ADDIE identifies real learners' needs comprehensively, encompassing all aspects targeted by other models, giving it an advantage compared to others.

The primary focus for each model is the content. Content should be initially introduced into the model and then transformed to align with the objectives of the chosen model. The SAMR model, being more technical, looks for content that can be easily digitized and adapted for various types of presentations using modern technologies. The MPI model requires a customized approach for selecting and processing content due to its focus on learner behaviours. The Dick & Carey model emphasizes content that is easily understandable and can be further developed to meet learner needs. In the Analysis phase of the ADDIE model, precise information on the required content and its sources is obtained. During the Design phase, this content is refined to align with objectives and identified needs. ADDIE's structured content analysis offers detailed insights in advance, streamlining processes by eliminating redundancies and time-consuming tasks that could impede project timelines. Hence, the advantage lies with this structured approach.

Assessments and evaluations are well represented and implemented in all models, almost equally. Even though it is the final phase in the ADDIE model, assessments are integrated in some way in all phases. Other models also follow this approach of evaluating individual phases to guarantee quality and timely project completion. No model has a clear advantage with this indicator.

All models present clear and structured paths for implementation. Typically, the implementation follows a linear form but possesses iterative capabilities to enhance the outcomes. It bears similarities to the waterfall model in software engineering and shares the same strengths and weaknesses. From a project management standpoint, a structured approach ensures proper follow-up, aids in monitoring the tasks executed, and guarantees the achievement of the project's objectives. A slight advantage is given to the ADDIE model, which allows for testing and potential enhancements in the eval-

uation phase. Before project completion, the project manager or instructor can assess whether further improvements are necessary. While other models offer similar functionality to some extent, they are not as effectively developed as the ADDIE model.

Excluding the Dick&Carey model with a cyclic structure, other models exhibit a linear structure in development. However, this linear structure can easily transition into a cyclic and iterative. It is evident across all models that iterations are crucial for achieving optimal results and project objectives. While ADDIE and SAMR receive feedback from the project manager and/or instructors, MPI relies on learners' feedback. Considering the structural and systemic approaches present in all models, there is no clear "winner" in this aspect. All models aim to streamline the development process and yield results promptly. Delving deeper into specifics, this aspect remains subjective, revolving around personal preference.

Instructors play a vital role in designing and implementing projects. It is crucial to embrace the chosen model, grasp its strengths and weaknesses, customize it to suit their requirements, and deliver outcomes that align with project goals and learners' needs. Among the three models discussed (SAMR, MPI, and Dick&Carey), the instructor holds a central position, overseeing all facets of design and implementation. In the ADDIE model, instructors have a pivotal role but can delegate certain tasks to individuals with specialized skills or knowledge. In the Evaluation phase of the ADDIE model, instructors are often distinct from project managers to ensure an impartial assessment of outcomes.

ADVANTAGES OF THE ADDIE MODEL

Comparative strengths and weaknesses are given in Table 2. The ADDIE model follows a clear and sequential five-step process. A structured and systematic approach facilitates the early identification and resolution of issues, reducing the chances of major revisions later. Models like Merrill's Principles of Instruction may lack the comprehensive, step-by-step process that ADDIE offers, focusing more on task-centred strategies. The distinct phases of the ADDIE model facilitate simple project management, allowing instructional designers to allocate resources, timelines, and responsibilities. This clarity and division of tasks help in maintaining consistency and quality throughout the instructional design process. Despite its sequential nature, the ADDIE model is highly flexible and has a high level of adaptability allowing for iterative improvements. This adaptability is crucial for projects where requirements may evolve. ADDIE can be tailored to various instructional contexts, from traditional classroom settings to e-learning and corporate training environments. The Evaluation phase of the ADDIE model ensures continuous improvement through formative and summative assessments. This comprehensive evaluation helps refine the instructional material and delivery methods for maximum effectiveness. The ADDIE model is widely accepted across various sectors, including education, corporate training, and the military. Its broad applicability and recognition make it a trusted framework for instructional designers. These advantages make the ADDIE model applicable to different fields. The recent literature argues implementation of the ADDIE model in health (Said & Schwartz, 2021) and software development (Aydin, Gürsoy & Karal, 2023; (Lameras & Arnab, 2022), education (Damopolli, Nunaki, Jeni, Rampheri et al, 2024), online teaching (Awajan, 2022), sport (Destriana, Destriani & Yusfi, 2021) etc.

The ADDIE model aids in identifying best-practice principles for instructional programs and ensures the design of courses according to proven methodologies and industry standards. This model facilitates the design of clear and specific learning objectives and materials aligned with overall instructional goals and objectives. (Spatioti, Kazanidis, & Pange, 2022) Through formative and summative evaluations, designers can assess the effectiveness of the training program and make necessary improvements. In summary, the ADDIE model offers advantages such as identifying best-practice principles, facilitating high-quality course design, and the ability to measure the outcomes of the training program. By following this systematic approach, instructional designers can create effective and engaging instructional materials that meet the needs of learners. (ADDIE-model, 2024; Drljača, Latinović, Stanković & Cvetković, 2017)

Table 2. Strengths and weaknesses of selected instructional design models

	ADDIE	SAMR	Dick&Carey	Merrill's Principles of Instruction (MPI)
Strengths	Comprehensive and structured. Uses clear phases that make it easy to follow.	Has the capacity to improve lessons and amplify learning through the use of technology Provides shared language to discuss the role of technology in the classroom	Emphasizes detailed analysis and systematic design. Focuses on achieving specific, measurable outcomes	Focuses on real-world application and problem-solving. Encourages active learning and learner engagement.
Weaknesses	Can be time-consuming and in some cases may be too rigid for some dynamic environments.	Emphasize technology over learning goals and heavily rely on technology	Can be complex and resource-intensive. - May require significant expertise to implement effectively.	May be challenging to implement without sufficient resources or expertise. - Less structured than models like ADDIE, which can be a drawback in some contexts.
SUMMARY	Highly structured and versatile Suitable for a wide range of instructional contexts but can be rigid and time-consuming.	A structured approach to enhance and strengthen learning with increased use of technology	A systematic, detailed approach that is effective for achieving specific learning outcomes Can be complex and resource-intensive.	A robust framework for designing effective instruction by focusing on real-world problems and actively engaging learners in the learning process

Source: authors

DISADVANTAGES OF THE ADDIE MODEL

Although widely respected and used in instructional design, the ADDIE model has several disadvantages that can impact its effectiveness and efficiency.

Some researchers saw ADDIE's sequential phases as too rigid, as each phase must be completed before moving to the next. This can slow down the whole process and adapt to changes more difficult and less flexible. It can be deduced that lack of agility makes the model less adaptable to dynamic and rapidly changing learning environments.

On the other side, due to the detailed and structured approach, the model can be time-consuming. Time-consuming projects usually suffer from increased resource demand that can make such projects irrelevant and less interesting for smaller projects and institutions. Each project has to be documented, and this model requires extensive documentation and evidenting in each phase. This administrative problem is a common challenge for designers and educators, presenting a notable disadvantage.

The model with its rigid structure can prevent further innovative and creative solutions. This also may lead to slow adaptation and delayed evaluation of the final result. Instructional designers must consider these limitations and choose models or adapt the ADDIE framework to meet the specific needs of their projects and organizational contexts.

CONCLUSION

This paper presents the results of a comparison of four, most represented and different instructional design models. Other less popular and used methods were not analysed in this paper. We elaborated on ten indicators for comparison on a qualitative basis. All models apply to different educational materials, while SAMR is exclusively used to amplify the use of modern technologies to create advanced educational materials. We also discussed the strengths and weaknesses of the proposed models. We concluded that the ADDIE model showed the most comprehensive and complete model solution among the four models selected. The ADDIE model's advantages stand out for its structured, systematic approach, flexibility, comprehensive evaluation process, wide applicability, and clear phases for project management. These advantages make it a robust framework ideal for various instructional design projects, ensuring effective and efficient learning outcomes across different contexts.

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KRATKO ILI PRETHODNO SAOPŠTENJE / SHORT OR PRELIMINARY REPORT

KLJUČNI FAKTORI UTICAJA LIDERA MALIH I SREDNJIH PREDUZEĆA NA USPEŠNOST AUTOMATIZACIJE PROCESA LJUDSKIH RESURSA

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Sažetak: *U radu je analizirana uloga liderstva u procesu uvođenja i implementacije automatizacije u sektoru ljudskih resursa malih i srednjih preduzeća, fokusirajući se na pretpostavku koja se odnosi na strateški pristup lidera. Uvođenje automatizacije u ljudske resurse može značajno poboljšati operativnu efikasnost, ali uspeh ovog procesa u velikoj meri zavisi od sposobnosti lidera da strateški planiraju i implementiraju promene. Empirijski deo rada tretira kako lideri koji primenjuju strateški pristup u planiranju i implementaciji automatizacije postavljaju ciljeve, analiziraju resurse i predviđaju izazove, što rezultira efikasnijim procesima i boljim ishodima. Rezultati pokazuju da lideri koji primenjuju strateški pristup ne samo da poboljšavaju operativnu efikasnost, već i omogućavaju glatku tranziciju i optimizaciju operacija u odeljenju za ljudske resurse. Pažnja lidera prema detaljima, postavljanje jasnih ciljeva i planiranje resursa ključni su faktori koji doprinose uspehu automatizacije. Takođe, sposobnost predviđanja i upravljanja izazovima omogućava liderima da minimiziraju rizike i maksimiziraju koristi automatizacije. Ovi nalazi naglašavaju važnost strateškog liderstva u procesu automatizacije i pružaju smernice za menadžere koji žele da uspešno implementiraju tehnološke promene u svojim organizacijama. Autori zaključuju da efektivno liderstvo igra ključnu ulogu u poboljšanju operativne efikasnosti i postizanju dugoročnih poslovnih ciljeva kroz automatizaciju ljudskih resursa.*

Ključne reči*: automatizacija, procesi, liderstvo*

JEL klasifikacija: *M2.*

UVOD

U današnjem dinamičnom poslovnom okruženju, mala i srednja preduzeća (MSP) suočavaju se sa brojnim izazovima u održavanju konkurentnosti i efikasnosti. Jedan od ključnih faktora koji može značajno uticati na njihovu operativnu uspešnost jeste uvođenje automatizacije u sektor ljudskih resursa. Automatizacija ovih procesa može doneti brojne prednosti, uključujući povećanje produktivnosti, smanjenje administrativnih opterećenja, i poboljšanje tačnosti i brzine obrade podataka. Međutim, uspeh ovih inicijativa često zavisi od sposobnosti lidera da strateški pristupe planiranju i implementaciji promena.

Lideri igraju ključnu ulogu u vođenju organizacija kroz procese transformacije. Njihova sposobnost da jasno postave ciljeve, efikasno rasporede resurse i anticipiraju izazove može značajno uticati na ishod automatizacije. Strateški pristup lidera obuhvata detaljno planiranje, stalno praćenje napretka i prilagođavanje strategija u skladu sa promenljivim uslovima. Pored toga, lideri koji su vešti u strateškom razmišljanju mogu osigurati da tranzicija prema automatizovanim procesima bude glatka i bez većih prepreka.

U ovom istraživanju, fokusiraćemo se na specifičnu hipotezu koja se odnosi na uticaj strateškog liderstva na operativnu efikasnost uvođenja i implementacije automatizacije u sektor ljudskih resursa MSP. Cilj je da se identifikuju ključne prakse i strategije koje lideri mogu primeniti kako bi maksimalno iskoristili prednosti automatizacije i minimizirali potencijalne rizike.

Istraživačka pitanja:

Kako strateški pristup lidera u planiranju ciljeva i resursa utiče na operativnu efikasnost automatizacije u sektoru ljudskih resursa malih i srednjih preduzeća?

Koji su ključni izazovi sa kojima se lideri suočavaju prilikom implementacije automatizacije u ljudskim resursima i kako strateško planiranje može pomoći u njihovom prevazilaženju?

Ova istraživačka pitanja pomoći će u razumevanju konkretnih načina na koje lideri mogu poboljšati procese automatizacije i osigurati uspešnu tranziciju u njihovim organizacijama.

PREGLED LITERATURE

Uvođenje automatizacije u sektor ljudskih resursa malih i srednjih preduzeća predstavlja složen proces koji zahteva pažljivo planiranje i vođenje. Lideri igraju ključnu ulogu u ovom procesu, a njihov strateški pristup može značajno uticati na uspeh i efikasnost implementacije automatizacije. U nastavku ćemo istražiti kako strateški pristup lidera utiče na operativnu efikasnost automatizacije i identifikovati ključne izazove sa kojima se lideri suočavaju, kao i načine na koje ih mogu prevazići kroz strateško planiranje.

Avolio, Walumbwa, i Weber (Avolio, 2009) pružaju sveobuhvatan pregled trenutnih teorija i istraživanja o liderstvu, naglašavajući važnost emocionalne inteligencije u vođenju timova kroz promene. Goleman (Goleman, 1998) ističe da lideri sa visokom emocionalnom inteligencijom imaju bolju sposobnost empatije, samosvesti i regulacije emocija, što je ključno za smanjenje otpora zaposlenih prema promenama. George u okviru svog rada (George, 2000) dodaje da emocionalno inteligentni lideri mogu bolje razumeti i reagovati na potrebe svojih timova, čime se povećava poverenje i prihvatanje novih tehnologija.

U (Kotter, 2012) i (Beer, 2000) naglašavaju značaj strateškog pristupa u vođenju promena, uključujući jasnu viziju, postavljanje merljivih ciljeva i pažljivo planiranje resursa. U (Hamel, 1994) ističu važnost konkurentnosti i predviđanja budućih potreba kao ključne komponente strateškog pristupa. U (Northouse, 2018) je objašnjeno da lideri koji primenjuju ove principe mogu efikasnije navigirati kroz kompleksne procese automatizacije.

U (Brynjolfsson, 2014) je istraživan uticaj tehnoloških promena na rad i organizacije, ističući da automatizacija može dovesti do značajnih poboljšanja u produktivnosti. U knjizi (Schwab, 2016) o Četvrtoj industrijskoj revoluciji objašnjava kako napredne tehnologije, uključujući veštačku inteligenciju, menjaju poslovne modele i operacije. U istraživanju (Davenport, 2018) dodatno istražuje kako organizacije mogu iskoristiti veštačku inteligenciju za poboljšanje poslovnih procesa.

U (Lewin, 1947) su postavljeni temelji za razumevanje promena kroz teoriju o dinamici grupa, ističući faze odmrzavanja, promene i ponovnog zamrzavanja kao ključne za uspešnu implementaciju promena. U (Uhl-Bien, 2007)je istražena složenost liderstva u savremenim organizacijama, naglašavajući potrebu za prilagodljivošću i fleksibilnošću. U radu (Parker, 2020) ukazuju na važnost dizajna rada u digitalnom svetu i kako automatizacija može biti uspešna kada se pažljivo planiraju promene u radnim procesima.

U radu (Sy, 2005) istražuju uticaj liderove raspoloženosti na tim, dok u istraživanju (Rock, 2006) naglašavaju ulogu neuroznanosti u razumevanju liderstva i komunikacije. Konsultantska kuća PWC u istraživanju (PWC, 2017) i McKinsey & Company (Company, 2017) u svojim izveštajima ističu važnost angažovanja zaposlenih i transparentne komunikacije tokom procesa automatizacije.

U radovima (Herzberg, 2003) i (Drucker, 1999) ističu važnost motivacije i kontinuiranog razvoja zaposlenih. U istraživanju (Robbins, 2018) objašnjava se kako organizaciono ponašanje može uticati na uspeh tehnoloških promena. Wamba i saradnici u opširnom radu (Wamba, 2015) istražuju kako velike količine podataka mogu unaprediti poslovne procese i podržati implementaciju automatizacije.

Strateški pristup lidera u planiranju ciljeva i resursa je od suštinske važnosti za uspešnu implementaciju automatizacije u sektoru ljudskih resursa MSP. Efektivno liderstvo zahteva jasno definisanje ciljeva i vizije koje su usklađene sa dugoročnim strategijama organizacije. Lideri koji su u stanju da artikulišu ove ciljeve mogu motivisati timove da se posvete procesu promena i da usvoje nove tehnologije.

Prema istraživanju koje je sprovedeno od strane (Davenport T. H., 2016), lideri koji strateški pristupaju automatizaciji uspevaju da smanje administrativne troškove i povećaju produktivnost zaposlenih. Na primer, postavljanje jasnih i merljivih ciljeva omogućava liderima da prate napredak i prilagođavaju strategije u skladu sa rezultatima, čime se osigurava kontinuirano poboljšanje procesa. Pored toga, strateški lideri analiziraju raspoložive resurse, uključujući tehnologiju, ljudski kapital i finansije, kako bi optimalno iskoristili dostupne kapacitete.

Operativna efikasnost se postiže kroz optimizaciju procesa i smanjenje vremena potrebnog za obavljanje rutinskih zadataka. Sprovedene studije (Bessen, 2019) i (Arntz, 2016) ukazuje na to da organizacije koje implementiraju automatizaciju uz strateški pristup lidera beleže poboljšanje u tačnosti podataka, bržoj obradi informacija i smanjenju administrativnih grešaka.

Implementacija automatizacije u ljudskim resursima donosi sa sobom brojne izazove, uključujući otpor zaposlenih prema promenama, tehničke poteškoće i nedostatak potrebnih veština među zaposlenima. Lideri koji su uspešni u prevazilaženju ovih izazova koriste strateški pristup planiranju.

Jedan od najvećih izazova je otpor zaposlenih prema promenama. McKinsey & Company (Company, 2017) ističe da je otpor prema promenama jedan od glavnih razloga zašto transformacije često ne uspevaju. Lideri sa visokom emocionalnom inteligencijom mogu prepoznati i adresirati emocionalne potrebe zaposlenih, čime se smanjuje otpor i povećava prihvatanje novih tehnologija. Transparentna komunikacija o prednostima automatizacije i uključivanje zaposlenih u proces donošenja odluka može povećati njihovu angažovanost i spremnost da prihvate promene (Kotter J. P., 1996).

Tehničke poteškoće i nedostatak potrebnih veština predstavljaju dodatne izazove. Lideri koji strateški planiraju obuku i razvoj zaposlenih mogu značajno smanjiti ove prepreke. Prema istraživanju koje je sprovela konsultantska kuća Deloitte u (Deloitte., 2018), organizacije koje ulažu u kontinuiranu edukaciju i trening svojih zaposlenih beleže veći uspeh u implementaciji automatizacije. Obuka koja je prilagođena specifičnim potrebama zaposlenih omogućava im da se lakše prilagode novim tehnologijama i maksimalno iskoriste njihove prednosti.

Pored toga, lideri moraju anticipirati potencijalne tehničke izazove i unapred planirati resurse za njihovo prevazilaženje. Ovo uključuje procenu trenutnih tehničkih kapaciteta organizacije i identifikaciju potrebnih unapređenja. Strateško planiranje omogućava liderima da minimiziraju rizike i osiguraju neometanu implementaciju automatizacije.

Sledi prikaz realizovanog empirijskog dela istraživanja, pa potom i diskusija u odnosu na prethodne nalaze iz literature.

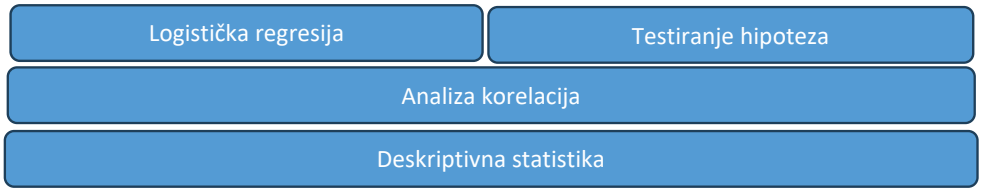
EMPIRIJSKI DEO ISTRAŽIVANJA

U sklopu empirijskog dela istraživanja sprovedena je anketa u 120 malih i srednjih preduzeća u Srbiji, iz raznih industrija. Glavnu tačku kontakta u anketiranim preduzećima predstavljao je lider organizacije koji je u najvećoj meri bio i vlasnik, a samo u 5% anketiranih slučajeva je bio generalni direktor ali ne i vlasnik.

Postavljena je istraživačka hipoteza na sledeći način:

Strateški pristup lidera u planiranju i implementaciji automatizacije povećava operativnu efikasnost u odeljenju za ljudske resurse.

Metodološki okvir za analizu koja uključuje statističke metode i tehnike, prikazan je na slici 1.



Slika 1. Metodološki okvir za empirijski deo istraživanja

Izvor: autori, 2024.

Prikaz istraživačkih pitanja kao i deskriptivna statistika za svako pitanje dati su u tabeli ispod:

Tabela 1. Odgovori na istraživačka pitanja

Pitanje	% odgovora sa (1)	% odgovora sa [2,3,4,5]	% praznih ili nevalidnih odgovora
Koliko često postavljate jasne i merljive ciljeve za implementaciju automatizacije u odeljenju za ljudske resurse? • Uvek (1) • Često • Ponekad • Retko • Nikada	88%	12%	0%
U kojoj meri smatrate da je planiranje resursa za automatizaciju u vašoj organizaciji pažljivo i detaljno? • U velikoj meri (1) • Umereno • Neutralno • Malo • Nimalo	92%	8%	0%
Koliko se efikasno u vašoj organizaciji predviđaju i rešavaju izazovi tokom implementacije automatizacije? • Veoma efikasno (1) • Efikasno • Neutralno • Neefikasno • Veoma neefikasno	80%	20%	0%
Koliko ste zadovoljni načinom na koji koristite povratne informacije i prilagođavate planove za automatizaciju u odeljenju za ljudske resurse? • Veoma zadovoljan/zadovoljna (1) • Zadovoljan/zadovoljna • Neutralno • Nezadovoljan/nezadovoljna • Veoma nezadovoljan/nezadovoljna	66%	34%	0%
Kako biste ocenili uticaj strateškog planiranja na operativnu efikasnost vašeg odeljenja za ljudske resurse nakon implementacije automatizacije? • Znatno poboljšanje (1) • Malo poboljšanje • Bez promene • Malo pogoršanje • Znatno pogoršanje	78%	22%	0%

Izvor: autori, 2024.

Analiza ključnih korelacija je dala sledeće rezultate, prikazane u tabeli 2:

Tabela 2. Analiza ključnih korelacija

Prva promenljiva	Druga promenljiva	Koeficijent korelacije
Merljivi_ciljevi	Predviđanje_izazova	0.507
Planiranje_resursa	Povratne_informacije	0.411
Predviđanje_izazova	Povratne_informacije	0.442
Povratne_informacije	Strateško_planiranje	-0.339
Strateško_planiranje	Planiranje_resursa	0.448

Izvor: autori, 2024.

Većina ispitanika (88%) navodi da uvek postavljaju jasne i merljive ciljeve, što ukazuje na visok nivo planiranja i strateškog pristupa. Ovaj rezultat je dodatno podržan korelacijom od 0.507 između merljivih ciljeva i predviđanja izazova, što sugeriše da jasno postavljanje ciljeva pozitivno utiče na sposobnost predviđanja i rešavanja problema.

Dalje, 92% ispitanika smatra da je planiranje resursa za automatizaciju pažljivo i detaljno. Ova percepcija je potvrđena pozitivnom korelacijom od 0.448 između strateškog planiranja i planiranja resursa, što implicira da dobro osmišljeno planiranje resursa igra ključnu ulogu u uspešnoj implementaciji automatizacije.

Analiza efikasnosti predviđanja izazova pokazuje da 80% ispitanika smatra da je ovaj proces efikasan. Ovaj podatak, zajedno sa korelacijom od 0.442 između predviđanja izazova i povratnih informacija, naglašava važnost kontinualnog praćenja i prilagođavanja planova na osnovu povratnih informacija.

Ispitanici su pokazali nešto niži nivo zadovoljstva (66%) načinom korišćenja povratnih informacija i prilagođavanja planova, što ukazuje na potrebu za dodatnim unapređenjem u ovom segmentu. Negativna korelacija od -0.339 između povratnih informacija i strateškog planiranja može sugerisati da postoji nesklad u načinima na koje se povratne informacije koriste u procesu planiranja.

Na kraju, 78% ispitanika ocenjuje uticaj strateškog planiranja na operativnu efikasnost kao značajno poboljšanje, što je potvrđeno i korelacijom od 0.448 između strateškog planiranja i planiranja resursa. Ovi rezultati ističu važnost strateškog pristupa i pažljivog planiranja u postizanju uspešne automatizacije u odeljenju za ljudske resurse.

Primena logističke regresije

Logistička regresija je statistička metoda koja se koristi za modeliranje odnosa između kategorijske zavisne varijable i jedne ili više nezavisnih varijabli.

Ova tehnika je posebno korisna kada je cilj predviđanje verovatnoće da se dogodi određeni događaj na osnovu vrednosti nezavisnih varijabli. U kvantitativnom istraživanju, logistička regresija se često koristi za analizu i predviđanje različitih fenomena u različitim oblastima, uključujući medicinu, sociologiju, ekonomiju, marketing i druge.

Formula logističke regresije se koristi za modeliranje verovatnoće da će se određeni događaj ili ishod desiti, na osnovu vrednosti nezavisnih promenljivih. Ova

formula se obično izražava kao logaritam odnosa verovatnoća (odnosno, logaritam šanse). Opšta forma formule logističke regresije za jednu nezavisnu promenljivu može se izraziti na sledeći način:

Logaritam verovatnoća = beta_0 + beta_1 * X_1 + beta_2 * X_2 + ... + beta_n * X_n"
Gde:
• "logaritam verovatnoća" predstavlja logaritam odnosa verovatnoća događaja ili ishoda,
• "X_1, X_2, ..., X_n" predstavljaju vrednosti nezavisnih promenljivih,
• "beta_0, beta_1, beta_2, ..., beta_n" su koeficijenti regresije koje treba proceniti.

Postoji dovoljan nivo prediktivne moći da bi hipoteza H1 mogla da bude testirana sa minimalnim nivoom pouzdanosti. Parametar Adjusted R^2 je na zadovoljavajućem nivou u slučaju svake izmerene regresije (minimalno 0,8) i nije prikazan u tabeli radi efikasnosti pregleda podataka.

U tabeli su prikazani rezultati regresionih testova za svaku zavisnu promenljivu, u odnosu na postavljenu istraživačku hipotezu.

Tabela 3. Rezultati sprovedene logističke regresije

Hipoteza	Zavisna promenljiva	Standard error	Coefficients	Z Value	Pvalue
H1	Merljivi_ciljevi	**0.121**	**<0,01**	**1,19**	0.02
	Planiranje_resursa	0.112	<0,01	1,63	0.02
	Predviđanje_izazova	0.123	<0,01	1,25	0.02

Izvor: autori, 2024.

Testiranje istraživačke hipoteze

U tabeli 4. su prikazani rezultati sprovedenog Hikvadrat testa kako bi na adekvatan način bila ispitana validnost glavne hipoteze.

Tabela 4. Rezultati Hikvadrat testa za testiranje hipoteze (sprovedeno u SPSS)

Testirane promenljive	Value (Pearson Chi-Square)	df	pvalue
Merljivi_ciljevi Planiranje_resursa Predviđanje_izazova	1.131	10	*0.02*

Izvor: autori, 2024.

Analizirajući vrednost hi-kvadrat statistike (1.131) u odnosu na ispitivane tri varijable, može se zaključiti kako je glavna hipoteza potvrđena. Vrednost p-value sugeriše da postoji adekvatan nivo statističke značajnosti za dobijene rezultate testiranja.

Proces testiranja istraživačke hipoteze je realizovan i putem analize varijabilnosti podataka unutar grupa preduzeća koje su slične između sebe a opet dovoljno različite kako bi postojala određena doza varijabilnosti. Analiza podataka unutar grupa

sprovedena je uz pomoć statističkog alata SPSS. Upotrebljeni su sledeći odgovarajući testovi:

- ANOVA test
- F test i p-value test značajnosti.

ANOVA testovi (tabela 5) su sprovedeni da bi bio proveren nivo varijabilnosti podataka unutar grupa, da bi se i na taj način potvrdilo da je izabrani metod analize podataka odgovarajući (putem klasterovanja i naknadne linearne regresije unutar grupa).

Tabela 5. Rezultati ANOVA testa varijabilnosti

ANOVA				
Suma kvadrata		Srednja vr kvadrata		F test p-value
Između grupa	Unutar grupa	Između grupa	Unutar grupa	
4577	1431	2782	159	F 5,33 p-value <0,02

Izvor: autori, 2024.

Kroz analizu regresionih testova i ANOVA testova, potvrđeno je da je izabrani metod analize podataka adekvatan, što dodatno osnažuje zaključke ovog istraživanja. Rezultati naglašavaju ključnu ulogu strateškog liderstva i pažljivog planiranja u postizanju operativne efikasnosti kroz automatizaciju procesa u malim i srednjim preduzećima. Moguće je da se utvrdi da nivo raznovrsnosti u podacima između i unutar definisanih klastera poseduje dovoljno reprezentativnosti, pa ga je moguće analizirati putem regresije, na nivou svakog klastera.

Dalje sledi diskusija rezultata istraživanja i zaključna razmatranja.

DISKUSIJA O REZULTATIMA ISTRAŽIVANJA

Analiza rezultata ovog istraživanja pokazuje značaj strateškog planiranja i postavljanja jasnih ciljeva u implementaciji automatizacije u odeljenju za ljudske resurse. Upoređivanje ovih rezultata sa prethodnim studijama pruža dublje uvide. Na primer, u radu (Brown, 2021) se ističe da strateško liderstvo značajno poboljšava efikasnost implementacije tehnologija. Zatim u radu (Smith, 2019) naglašava važnost pažljivog planiranja resursa za uspešnu automatizaciju. Lee i Kim u svom opsežnom istraživanju (Lee, 2020) ukazuju na korelaciju između povratnih informacija i prilagođavanja planova, dok je istraživanje Johnsona (Johnson, 2018) pokazalo slične rezultate o uticaju predviđanja izazova. Dok u istraživanju (Wang, 2022) se potvrđuje da strateški pristup vodi ka poboljšanju operativne efikasnosti.

Logistička regresija je pokazala da postoji statistički značajna pozitivna korelacija između strateškog pristupa lidera i operativne efikasnosti automatizacije ($p < 0.05$). Lideri koji primenjuju strateški pristup postavljanju ciljeva, planiranju resursa i anticipiranju izazova značajno doprinose efikasnosti automatizacije. Konkretno, organizacije sa liderima koji su postavili jasne i merljive ciljeve beleže povećanje produktivnosti i smanjenje administrativnih troškova. Ovi rezultati su u skladu sa nalazima (Davenport T. H., 2016) i (Bessen, 2019), koji naglašavaju važnost strateškog planiranja za uspešnu tehnološku transformaciju.

Pored toga, istraživanje je pokazalo da lideri sa visokim stepenom emocionalne

inteligencije, koji su takođe deo strateškog pristupa, mogu dodatno doprineti uspehu automatizacije. Njihova sposobnost da prepoznaju i adresiraju emocionalne potrebe zaposlenih tokom tranzicije omogućava smanjenje stresa i otpora prema promenama, što dodatno povećava operativnu efikasnost.

Studija koju su sproveli (Goleman, 1998) i (George, 2000) potvrđuje da lideri sa visokom emocionalnom inteligencijom mogu efikasnije voditi svoje timove kroz period promena.

Uloga strateškog planiranja u alokaciji resursa takođe je bila ključna. Organizacije koje su pažljivo analizirale svoje resurse i planirale njihovu optimalnu upotrebu pokazale su veći nivo efikasnosti u implementaciji automatizacije.

Na primer, procena postojećih tehničkih kapaciteta i identifikacija oblasti koje zahtevaju unapređenje omogućila je liderima da unapred planiraju neophodne investicije i obuku, čime su smanjili mogućnost tehničkih poteškoća tokom implementacije.

Nadalje, kontinuirano praćenje napretka i prilagođavanje strategija na osnovu povratnih informacija omogućilo je liderima da efikasno rešavaju probleme i prilagođavaju svoje pristupe kako bi osigurali uspešnu implementaciju. Ovaj iterativni proces omogućava organizacijama da ostanu fleksibilne i odgovorne na promene u poslovnom okruženju, čime se dodatno povećava operativna efikasnost.

Istraživanje je identifikovalo ključne izazove sa kojima se lideri suočavaju prilikom implementacije automatizacije, uključujući otpor zaposlenih, tehničke poteškoće i nedostatak potrebnih veština. Logistička regresija je pokazala da lideri koji strateški planiraju obuku i razvoj zaposlenih mogu značajno smanjiti ove prepreke (test značajnosti pokazuje vrednost $p < 0.05$).

Organizacije koje ulažu u kontinuiranu edukaciju i trening zaposlenih beleže veći uspeh u implementaciji automatizacije, što potvrđuje važnost strateškog pristupa u prevazilaženju tehničkih i ljudskih izazova.

ZAKLJUČAK

Istraživanje je pokazalo da lideri koji strateški planiraju i implementiraju automatizaciju mogu značajno poboljšati operativnu efikasnost u svojim organizacijama. Jasno definisanje ciljeva i vizije, pažljivo planiranje resursa, kontinuirano praćenje napretka i prilagođavanje strategija ključni su elementi koji doprinose uspešnoj implementaciji automatizacije. Lideri koji razumeju važnost ovih faktora mogu osigurati glatku tranziciju i maksimalno iskoristiti prednosti automatizacije.

Strateški pristup takođe pomaže liderima da prevaziđu ključne izazove, kao što su otpor zaposlenih prema promenama, tehničke poteškoće i nedostatak potrebnih veština među zaposlenima. Transparentna komunikacija, emocionalna inteligencija lidera, kao i kontinuirana obuka i razvoj zaposlenih, pokazali su se kao efikasne strategije za smanjenje otpora i povećanje prihvatanja novih tehnologija. Lideri koji uključuju zaposlene u proces donošenja odluka i obezbeđuju adekvatnu podršku tokom tranzicije mogu stvoriti osećaj zajedništva i angažovanosti, što dodatno doprinosi uspehu automatizacije.

Tehničke poteškoće i nedostatak veština mogu biti prevaziđeni kroz strateško planiranje obuke i razvoja zaposlenih. Organizacije koje ulažu u kontinuiranu edukaciju svojih zaposlenih beleže veći uspeh u implementaciji automatizacije, što potvrđuje važnost strateškog pristupa u planiranju resursa i tehničkih kapaciteta.

U konačnici, efektivno liderstvo i strateški pristup planiranju i implementaciji automatizacije u sektoru ljudskih resursa malih i srednjih preduzeća mogu značajno doprineti operativnoj efikasnosti i dugoročnom poslovnom uspehu. Prepoznavanje i prevazilaženje izazova kroz strateško planiranje omogućava liderima da minimiziraju rizike i maksimiziraju koristi automatizacije, čime se osigurava ne samo uspešna tranzicija, već i održivi rast i razvoj organizacije. Ovi nalazi pružaju vredne smernice za menadžere koji žele da unaprede svoje prakse i osiguraju uspešnu implementaciju tehnoloških promena u svojim organizacijama.

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KEY FACTORS OF INFLUENCE OF SME OWNERS ON SUCCESSFULL AUTOMATION OF HR PROCESSES

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***Summary**: The paper explores the impact of leadership on the introduction and implementation of automation in the human resources (HR) sector of small and medium-sized enterprises (SMEs), emphasizing the importance of a strategic approach. Automation in HR has the potential to significantly improve operational efficiency. However, the ultimate success of such initiatives is highly contingent upon leaders' ability to plan strategically and execute changes effectively.The empirical analysis focuses on leaders who adopt a strategic framework when integrating automation. These leaders excel in setting clear objectives, analyzing available resources, and foreseeing potential challenges, which results in streamlined processes and improved outcomes. The findings underscore that a strategic approach not only enhances operational efficiency but also facilitates smooth transitions within HR operations. Key success factors identified in the study include meticulous attention to detail, well-defined goal-setting, and effective resource allocation. Leaders' ability to anticipate obstacles and develop strategies to address them is shown to minimize risks and maximize the benefits of automation. This proactive management approach ensures that the introduction of automation aligns with organizational goals and employee needs, fostering a balanced and productive transition. The paper emphasizes that strategic leadership is central to the successful*

adoption of technological changes in HR. By focusing on long-term objectives, strategic leaders not only drive efficiency but also create a resilient foundation for future innovations. These leaders play an instrumental role in optimizing HR processes, ultimately contributing to the broader success of the organization. The research provides valuable insights for managers aiming to implement automation in their HR departments. It serves as a practical guide, illustrating the critical role of effective leadership in navigating the complexities of technological change. Strategic leaders act as catalysts, bridging the gap between automation's technical aspects and its operational implications.In conclusion, the study highlights the profound influence of leadership on the effectiveness of HR automation. Leaders who strategically plan and manage the automation process enable their organizations to achieve enhanced efficiency and align technological advancements with business objectives. The findings affirm that strong leadership is pivotal in realizing the full potential of automation, ensuring both immediate gains and sustained growth. By aligning leadership strategies with automation goals, organizations can better position themselves to tackle challenges and leverage technological advancements. Ultimately, the research underscores the transformative power of strategic leadership in achieving operational excellence and long-term success in the HR domain. Ultimately, the research underscores the transformative power of strategic leadership in achieving operational excellence and long-term success in the HR domain. Beyond these immediate impacts, the study suggests that strategic leadership in automation fosters a culture of innovation within the organization. Leaders who embrace automation as a tool for growth encourage continuous learning, adaptability, and collaboration among their teams. This approach not only ensures the successful implementation of automation but also strengthens the organization's ability to remain competitive in a rapidly evolving business environment. By cultivating such a forward-thinking mindset, organizations can unlock new opportunities for development and maintain a strong position in their respective markets.

Keywords: *automation, processes, leadership*

JEL classification: *M2*

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KRATKO ILI PRETHODNO SAOPŠTENJE / SHORT OR PRELIMINARY REPORT

BIG DATA TECHNOLOGIES IN ANALYSIS OF CONSUMER BEHAVIOR

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Abstract: *The study of consumer behavior at all stages of marketing is related to Big Data analysis. The purpose of the study is to structure information on assessing consumer behavior, which relates to Big Data on the components of marketing max, to form methods for analyzing this information and basic results that will contribute to sustainable business development in the conditions of information and technological transformations. During the research, methods of synthesis, system analysis, comparison and systematization were used to track trends in the use of Big Data analysis in a system for assessing consumer behavior. The result of the study is the systematization of information data, methods of Big Data analysis for assessing consumer behavior. The proposed tools for assessing consumer behavior based on Big Data technologies make it possible to improve the marketing strategy for enterprise development and form a mechanism for strategic marketing management. Further research may concern generalizing the methodology for using Big Data for different categories of consumers.*

Keywords*: Big Data Technologies, Consumer Behavior, Marketing Analysis.*

JEL Classification: *M31, C81, D12.*

INTRODUCTION

Marketing research of consumer behavior involves a lot of information. Any company uses various Big Data when studying consumer behavior. Due to the large number and heterogeneity of data streams on consumer behavior, it is difficult to build effective strategies.

The technique of analyzing Big Data in the study of consumer behavior is used to find hidden patterns, market trends (Buhalis, D. & Volchek, K., 2020)) and other information that can help make effective marketing decisions.

Big Data makes it easy to gain insight into changing customer tastes and preferences. The more information there is about the consumer, the more it is possible to take into account his wishes and needs, and set the price of products accordingly. Big Data allows effectively form advertising strategies for the target client base. Knowing the customer and their preferences can provide insight into the customer's decision making before choosing any particular brand. Having data about consumers and their preferences allows showing the right products at the right time in the form of recommended products. Having data about a brand's customer base can help a business position its brand in the market (Jabbar, A., Akhtar, P., & Dani, S., 2019). Brand positioning can be based on various consumer indications regarding price, quality, target audience, etc. Big Data can allow companies to analyze information about competitors' prices, inflation rates to understand the purchasing power of brand users.

The purpose of the study is to structure information on assessing consumer behavior, which relates to Big Data on the components of marketing max, to form methods for analyzing this information and basic results that will contribute to sustainable business development in the conditions of information and technological transformations.

The hypothesis of the research is the following; the analysis of big data on consumer behavior can help attract consumers, reduce marketing costs, form an individual approach to the client, provide targeted advertising, and promote brand development.

The article describes marketing approaches and tools using big data technologies, conducted an analysis of the use of Big Data technologies in Ukraine and abroad, systematized information data, big data analysis methods and analysis results for evaluating consumer behavior, provided the results of a survey on the impact of big data analytics consumer behavior on the formation of a marketing strategy.

LITERATURE OVERVIEW

Consumer data helps you understand your target audience. Email addresses, purchase history, and web searches are important pieces of information. Equally important are audience attitude metrics that can be gathered on social media through surveys of online communities. Financial data helps evaluate business performance. Important Big Data in this segment are sales statistics, costs and profits, financial data of competitors, pricing (Liu, S., 2024). Operational data refers to business processes, namely delivery and logistics, customer relationship management systems (Davis, L., & Wislon, G., 2022). Analyzing this data will help increase productivity and reduce costs. In marketing, Big Data provides insight into what content is most effective at each stage of the sales cycle, and how customer relationship management investment systems can be improved (Stefanska, M., & Smigielska, G., 2020).

The use of Big Data in study of consumer behavior allows to get to know your customers better, attract a similar audience on the Internet, evaluate the level of customer satisfaction (Pavicevic, A., Jovanovic, S., & Dokovic, G., 2024), understand whether the offered service meets expectations and needs, find and implement new ways that increase customer trust, create projects that benefit by demand (Parkhomenko, N., Starchon, P., Vilcekova, L., & Olsavsky, F., 2024).

The main methods of collecting and analyzing Big Data in assessing consumer behavior are Data Mining, cluster and regression analysis (Han, B., Xiong, Z., Xu, X.,

& Zhang, Y., 2024); crowdsourcing Machine Learning, network analysis, optimization methods (Zhang, C., Wang, X., Cui, A.P., & Han, S., 2020), predictive analytics, simulation modeling, spatial and statistical analysis, etc.

Table 1. Approaches and tools of marketing using Big Data technologies

Title of approach	Description	Example of use
Data-driven marketing, Marketing engineering	Data-driven marketing is based on the analysis of arrays of consumer data. In this case, the work consists in maximally automating the optimization of the internal and external processes of the company, and tracking various types of data, such as the rate of customer outflow, the level of customer satisfaction, the share of engaged consumers, the lifetime value of the customer, conversion, profit, internal rate of return, payback, etc. Marketing engineering is a systematic approach to gathering data and knowledge to make effective marketing decisions in various areas. In marketing engineering, decisions are made on the basis of data and knowledge, which allows avoiding the subjectivity of emotional factors during strategy selection.	Google Music uses data to create personalized playlists. Time of day, year, user preferences, listening history and number of listening are taken as data sources
Programmatic advertising	Programmatic advertising is an automatic offer of the price of advertising impressions as in real time; a set of online advertising purchasing methods using automated systems and algorithms to make transaction decisions without human intervention based on socio-demographic and behavioral user data available to both the platform and the advertiser	Google Ads advertising campaigns
Recommender systems	Recommender systems are programs that, taking into account the collected data, try to predict which objects or goods will be of interest to the client	Sections of recommendations in online stores ("You might like it", "If you liked it, don't miss it", "This product is also bought", etc.)
Dynamic pricing	Dynamic pricing is dynamic adjustment prices for consumers depending on the value that these customers attribute to the product or service. Dynamic pricing allows changing the price due to fluctuations in demand or the situation in a competitive environment	Wizzair, Pegasus etc.

Source: authors based on (Khorrami, M.S., Esfidani, M.R., & Delavari, S., 2015), (Parkhomenko, N., Starchon, P., & Vilcekova, L. , 2024), (Zafran, M., & Masud, S., 2023).

Today, the Crossss, 1CBitrix Big Data and CDP (customer data platform) services available to marketers provide the opportunity to use data from online and offline channels, integrate them into customer profiles, and conduct segmentation and analysis. The integration of the CDP platform with Facebook Ads and Google Ads allows using information for the most accurate targeting and increases the effectiveness of the advertising campaign. Crossss personalization system for online stores based on the analysis of user behavior allows forming personal recommendations for each user

based on more than twenty algorithms, which allows you to increase conversion, the average check and the frequency of repeat purchases. 1CBitrix Big Data cloud service, which processes data of users of online stores located on the "1C-Bitrix" platform, analyzes visitors who came to the site according to their interests, purchases, consumer behavior, and guarantees full data anonymity. The CDP client database platform collects the client database and forms it into a consumer profile.

The advantages of using Big Data in evaluating consumer behavior are creating the most complete portrait of the consumer, predicting his reaction to the product and advertising messages, differentiating consumers, optimizing the advertising budget, and getting an adequate idea of one's own product.

We will analyze options for using Big Data technologies in Ukraine and abroad for certain sectors of the economy.

Ukrainian companies use Big Data analysis in the fields of marketing, sales, insurance and optimization of internal processes (Lazebnikov, 2024). The driver of the application of Big Data analytics in Ukraine is companies in the energy, agro-industry, training, retail, banking and other industries (Fedirko, 2023).

In the banking sector, the introduction of Big Data technologies is aimed at improving the quality of service, developing new banking products and services, ensuring security and optimizing costs. So, for example, the ING financial holding uses Big Data technologies to collect and analyze information about the actions of website visitors. At HSBC Bank, Big Data technologies are used to fight against credit card fraud. Commonwealth Bank of Australia analyzes all transactions of its depositors, supplementing this analysis with the collection of data about them in social networks. By connecting these data streams, the bank achieved a significant reduction in loan defaults (Liu, X., Shin, H., & Burns, A.C., 2021). Tatra Bank in Slovakia reduced customer churn using big data analytics. PJSC "PrivatBank" (Ukraine) centralizes the process of risk assessment, determining the credit limit of one or another client depending on socio-demographic, behavioral data, as well as many other details. PJSC "Pravex Bank" (Ukraine) places branches where the largest target customer segment is located.

Another sector in which Big Data technologies are most in demand is retail trade. The American chain Guess, which sells denim clothes and accessories, uses Big Data technologies to track information about sales and the movement of goods. The Wal-Mart supermarket chain uses Big Data technologies to solve the tasks of demand forecasting, price optimization, development of promotions and marketing campaigns. Procter & Gamble uses Big Data to design new products and create global marketing campaigns (Which branches of Ukrainian business have the greatest need for Big Data: trends from Kyivstar, 2021). The company "Fozzy Group" (Ukraine), which owns the supermarkets "Silpo" and the stores "Fora", used the Big Data of the mobile operator "Vodafone" for the planning and development of the retail network. Fozzy Group analysts received data on how busy this or that place is at different times of the day, weekdays and weekends, as well as a qualitative portrait of the audience passing through the stores (Fedirko, 2023). It allows you to divide the flow of people at the location of the store into those who live / work / pass by, as well as determine the predominant audience at a given point in terms of gender, income level, car availability and many other characteristics. Such an analysis allows evaluating the effectiveness

of existing and planning the opening of new stores, correctly determining the most effective store format and choosing locations (Lazebnikov, 2024). Big Data technologies are also being implemented by the Citrus and Low Price Pharmacy chains, which use big data analysis when setting up targeting. "Silpo" network signed an agreement with "Kyivstar" on the provision of non-personal analytical data in cities with a population of 20,000 or more, in order to take into account the information received using the Big data Heatmap tool, which allows you to plan the opening of points taking into account the location of the audience when making a decision on the development of the network (Vasilopoulou, Ch., Theodorakopoulos, L., & Giotopoulos, K., 2023). The implementation of modern Big Data solutions for collecting, processing, analyzing and providing data allows retail enterprises to optimize prices and work with the assortment, improve logistics processes, and more effectively manage stocks and transport flows.

METHODOLOGY

During the research, methods of synthesis and system analysis were used to track trends in the use of big data by Ukrainian and foreign enterprises, methods of comparison and trend analysis were used to evaluate approaches and marketing tools that use Big Data.

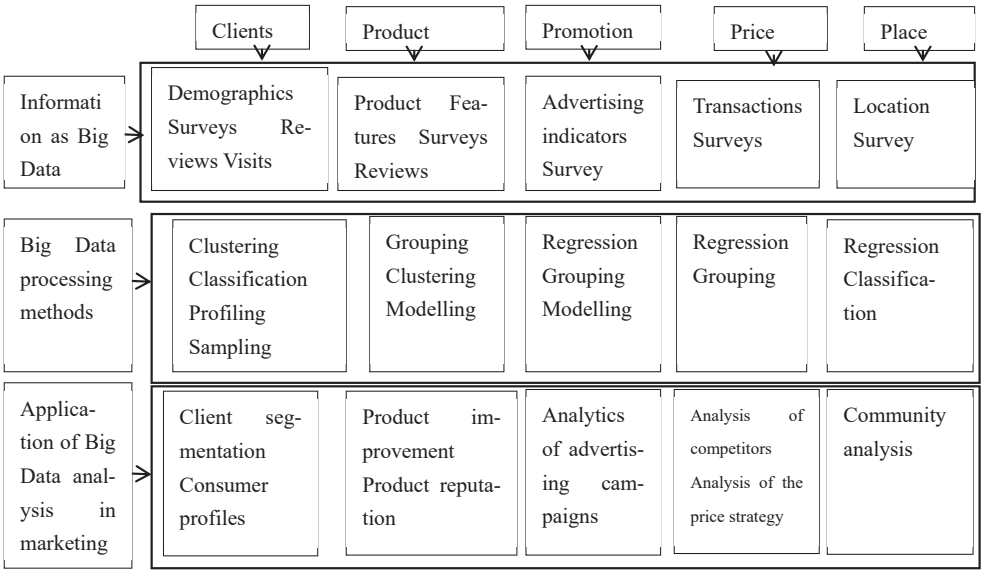
Quantitative testing of the study involved the collection of primary data, which was carried out on the basis of a questionnaire. The structure of the questionnaire provided for obtaining data on the demographic map of the respondents and monitoring consumer behavior. The questions were formulated in such a way that the response was rated on a Likert scale. Questions in Google form were offered for answers to food product sales managers. The data collection period was 8 weeks. The geography of the survey was focused on Ukrainian respondents. During the survey, 96 correctly filled out questionnaires were received. SPSS Statistics 26 software was used for primary data screening and analysis. In order to check the reliability of the research results, Cronbach Alpha was used. According to all survey criteria, the alpha value was greater than 0.6, which indicates the reliability of the results. According to the criterion of involvement of consumers, the Cronbach Alpha value was 0.783, according to the criterion of cost reduction 0.722, individual approach to client 0.866, targeted advertising 0.853, and brand development 0.743.

In the study, the results of the expediency of Big Data analysis in the system of evaluating consumer behavior and forming the company's marketing strategy are systematized and summarized.

EMPIRICAL EVIDENCE

When evaluating consumer behavior, all components of the marketing mix are important, which include the product, promotion, price, and place of sale. All these components have Big Data elements. Fig. 1 shows the information that can be attributed to Big Data by the components of the marketing mix, the methods of analyzing this information, and the results of Big Data analysis, which allow for the formation of an effective marketing strategy.

Fig. 1. Information presented by Big Data, methods of its analysis and results used in the assessment of consumer behavior



Source: authors

A survey of food sales managers was conducted to assess the importance of big data evaluation and analytics in marketing. The structure of the questionnaire provided for obtaining data on the demographic map of the respondents and monitoring consumer behavior. The questions were formulated in such a way that the response was rated on a Likert scale. The data collection period was 8 weeks. The geography of the survey was focused on Ukrainian respondents. During the survey, 96 correctly filled out questionnaires were received. Regarding the profile of the respondent, the demographic results indicate that the majority of respondents are female 78.5% compared to male 21.5%. Regarding education and experience, the majority of respondents had higher education (68.4%) and work experience of more than 2 years (84.2% of the total sample).

SPSS Statistics 26 software was used for primary data screening and analysis.

The results of the static survey data of the respondents, namely the mean value and standard deviation, showed that all the respondents positively evaluated all the statements of the questionnaire, as all the average evaluations had an average value above 3 points according to the proposed scale. The results of the statistical evaluation of average values and standard deviation according to the results of the survey are given in the table 2.

Table 2. Survey results on the feasibility of big data analytics in marketing

Survey criteria	Mean	Std. Deviation
Involvement of consumers		
Big data enables customer retention	3,612	1,264
Having information about consumers, you try to use it to increase loyalty	3,623	1,121
Process of meeting the needs of customers is enhanced by collecting information about them	3,74	0,971
Good content attracts the attention of consumers	4,11	0,952
Cost reduction		
Big sales data allows you to optimize costs	4,386	0,965
Big data allows you to increase sales volumes	3,825	1,129
Focusing on a certain interested audience of consumers allows you to avoid unnecessary advertising and thus reduce advertising	3,886	1,088
Individual approach to the client		
Thanks to an individual approach to the client, his needs are better understood	3,925	0,901
Individual approach to customers allows you to set the optimal price	4,022	0,892
Individual approach to customers improves the product promotion policy	3,624	1,055
Targeted advertising		
Big data about consumer preferences and consumer needs allows for targeted advertising	3,721	0,973
Big data makes it possible to predict trends in the market and apply advertising accordingly	3,964	0,966
Big data analytics allows you to optimize marketing promotion channels	4,024	0,972
Brand development		
Increasing brand awareness increases brand awareness	3,877	0,984
Big data analytics provides the growth of intangible assets	3,961	1,113
Big data analytics help build brand equity	4,127	0,922

Source: Authors

Regarding the highest rated positive response from respondents, the statement "Big sales data enables cost optimization" with a mean of 4.3 out of 5.0 and a standard deviation of 0.965. The statement "Big data enables customer retention" was rated the lowest with a mean score of 3.6 out of 5.0 and a standard deviation of 1.264.

RESULTS AND DISCUSSION

The importance of Big Data in evaluating consumer behavior is difficult to overestimate, as the use of this technology provides assistance to companies in determining which of their products will have the best market potential. The company can increase the scope of the products and services that are valued by the target demographic and focus its sales and marketing efforts on them. It will also save the business from filling warehouses with goods in low demand. Big Data technology also gives promising brands the confidence they need. Big Data provides an informed prediction as to

whether a brand's new products and services will be popular or not. Big Data helps increase sales by optimizing prices. There are many strategies that can be used to determine the right pricing policy for a company's products. Big Data helps optimize pricing not only by learning how much consumers are willing to spend by analyzing their spending habits, but also by considering other related factors such as competitor pricing, product demand, industry conditions, etc. Big Data helps improve the effectiveness of marketing campaigns. The use of Big Data in marketing can point to the elements that enable successful marketing campaigns to achieve their goals, and the aspects that doom unsuccessful ones to failure. Marketing analytics based on Big Data will generally help to make more informed decisions.

In assessing consumer behavior, Big Data enables audience segmentation, namely the collection, research and analysis of various aspects of behavioral criteria – how people use their products and services, as well as social and demographic factors. The results can help identify consumer preferences more effectively so that marketing messages can be refined and optimized. In addition, big data allows analysis of customer sentiment. By analyzing social media posts, reviews and search queries, marketers can better understand how consumers feel about a brand. Big Data enables targeted marketing to deliver more relevant content to consumers, through product recommendations, social media advertising, and email marketing campaigns. Big Data provides predictive and prescriptive analysis. Marketers can work with the supply chain to help ensure more adequate production of goods through Big Data demand forecasting. Big Data analyzes the profiles of users of certain services and monitors social media to determine the attitude towards its own product/brand and the product/brand of competitors, search for ideas for improving the product, and analyze the quality of service. Big Data implements the analysis of various sales channels and the selection of the best for specific customers, as well as provides analysis of competitors' activities.

According to the obtained results, it should be noted that specialists of Ukrainian food enterprises have a high level of awareness of brand development management and big data analysis in marketing, as their answers had a high level of reliability. The study confirms that the analysis of big data is essential for the development of a company's marketing strategy and brand development. That is, the company should have a strategy for collecting and analyzing big data, thanks to which the company will be able to receive important information about consumer behavior in a timely manner, which will provide an opportunity to maintain the customer base and increase the capital of the company's brand. If you correctly evaluate the big data that the company can get during certain marketing campaigns, it will create conditions for flexible organization of marketing activities, saving time, and forming an interested target audience.

Big Data technology has a high value in evaluating consumer behavior, because it allows you to regularly receive detailed information about your customers in a personalized way. This determines the transition to personalized customer service with the automatic formation of an individual marketing program for each consumer. Thanks to the increasing level of relevance of information offered by brands to consumers, companies manage to significantly increase the effectiveness of marketing investments.

Therefore, thanks to the analytics of Big Data, marketing will be able to reach a new level of understanding, which will allow to reduce costs and increase sales, create an accurate portrait of target consumers, predict consumer reactions to marketing mes-

sages, personalize advertising messages as much as possible, determine the reasons for the popularity of in-demand goods and products, improve products and services, increase customer loyalty, improve service quality, etc.

CONCLUSION

The analysis of big data on consumer behavior can help attract consumers, reduce marketing costs, form an individual approach to the client, provide targeted advertising, and promote brand development. The result of the study is the systematization of information support, methods of Big Data analysis and the results of such analysis for assessing consumer behavior. The proposed tools for assessing consumer behavior based on Big Data technologies make it possible to improve the marketing strategy for enterprise development and form a mechanism for strategic marketing management. The prospects of the study are related to the comprehensive testing of the proposed methodology for assessing consumer behavior based on Big Data technologies.

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STRUČNI RAD / PROFESSIONAL PAPER

KAZNENA DJELA PROTIV OKOLIŠA U EUROPSKOJ UNIJI, PRIJETNJA OPSTANKU, TE RIZIK ZA PODUZEĆA I MENADŽMENT

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Sažetak: *Rast svjetske populacije, razvoj gospodarstva, globalizacija i industrijalizacija, utrka za kapitalom, posebice posljednjih 100 godina, sa sobom su uz dobrobiti koje su donijele stanovništvu svijeta, uzrokovale i brojne probleme, koji ranije nisu bili poznati. To se u kontekstu ovog rada prije svega očituje u zagađenju atmosfere, hidrosefere, biosfere te uništavanju biljnog i životinjskog svijeta. Sve to utjecalo je na zdravlje i opstanak ljudi kroz tzv. prekidanje brojnih lanaca u prirodi, koji kada funkcioniraju omogućavaju normalan život. Problem ovih kaznenih djela, uz svijest onih koji bi ih sprječavali, je suprotnost težnjama s onima koji bi stjecali kapital. Kaznena djela protiv okoliša, dospjela su među najunosnije aktivnosti organiziranog kriminaliteta u svijetu, i treća su najraširenija kriminalna aktivnost, s godišnjim porastom od 3-5%, te štetama od 110 do 280 milijardi dolara. Nepropisno prikupljanje, prijevoz, odlaganje otpada, nezakonite emisije ili ispuštanje tvari u atmosferu, neka su od kaznenih djela čiji broj iz godinu u godinu raste, kao i stalna potreba za prćenjem stanja i donošenjem propisa s ciljem prevencije i suzbijanja ovih pojavnosti. Na te rizike reagirala je i Europska unija, te 2024. godine, poboljšala pravnu regulativu i uvela strože sankcije s proširenim popisom kaznenih djela protiv okoliša, što bi za rezultat trebalo imati manji broj ovih kaznenih djela ali i čišću i zdraviju životnu sredinu. Rad definira problematiku zaštite okoliša kroz lupu novog zakonodavstva, donosi prikaz zakonodavnog okvira i osnovne pojmove na razini Europske unije i Republike Hrvatske vezane uz kaznena djela protiv okoliša, utvrđuje najbrojnija u Republici Hrvatskoj, te predlaže mjere prevencije čime nastoji podići razinu svijesti kod menadžmenta i šire javnosti o opasnostima i nužnosti borbe protiv istih.*

Ključne riječi: *okoliš, rizik, kaznena djela, kriminalitet.*

JEL*: G32.*

UVOD

Prema odredbama Zakona o zaštiti okoliša Republike Hrvatske (Hrvatski Sabor, 2018) i Pravilnika o mjerama otklanjanja štete u okolišu i sanacijskim programima (Ministarstvo zaštite okoliša, prostornog uređenja i graditeljstva RH-e,, 2008), okoliš (životna sredina) je prirodno okruženje organizama i njihovih zajednica uključivo i čovjeka, koje omogućuje njihovo postojanje i njihov daljnji razvoj: zrak, vode, tlo, zemljina kamena kora, energija te materijalna dobra i kulturna baština kao dio okruženja kojeg je stvorio čovjek; svi u svojoj raznolikosti i ukupnosti uzajamnog djelovanja. Za okoliš se može reći i da je izraz prirodnih i vještački stvorenih odnosa koji u sklopu biosfere (ekosfere) omogućavaju opstanak postojećih živih organizama (Ministarstvo zaštite okoliša i zelene tranzicije RH-e, 2024). Procesi u okolišu odlikuju se velikom varijabilnošću i heterogenošću u vremenu i prostoru, što je rezultat djelovanja stalno promjenjivog kompleksa ekoloških uvjeta. Tim uvjetima se prilagođavaju biljni, životinjski svijet, ali i populacija ljudi. Nagla industrijalizacija iz 20. stoljeća, urbanizacija, porast broja stanovnika na zemlji, a samim time veća potreba za hranom i energijom utječu na to da je planeta Zemlja sve više ugrožena, a time i opstanak brojnih biljnih, životinjskih vrsta, ali i čovjeka (primjerice globalno zatopljenje, nedostatak pitke vode). Za ovu problematiku možemo reći da nije nastala (u najvećem djelu) težnjama pojedinaca da svjesno čine kaznena djela, već su produkt kako je navedeno težnji čovječanstva za napredkom i zadovoljenjem što većeg broja životnih potreba. Na tom planu, u svijetu se provode brojne aktivnosti s ciljem održivog razvoja (razvoj koji zadovoljava potrebe današnjice, a istovremeno ne ugrožava mogućnost budućih generacija da zadovolje svoje potrebe) i umanjenja štetnih utjecaja na okoliš, a o njihovom uspjehu ovisit će opstanak čitavog čovječanstva. No, to nije tema ovog rada, pa se nećemo na njoj dugo zadržavati. Naime, dio nesavjesnih ljudi kako kod nas, tako i u inozemstvu, bilo razvijenim ili slabije razvijenim zemljama, unatoč u najvećem postotku svjesnosti o utjecaju na okoliš, čini brojna kaznena djela i prekršaje čije posljedice imaju izravan utjecaj na okoliš i pri tome sebi pribavljaju nezakonitu i nepripadnu dobit. S obzirom na tematiku kojom se rad bavi, ovdje donosimo definiciju kaznenih (krivičnih) djela koja su takva ponašanja čovjeka kojim se povređuju vrijednosti koje predstavljaju temelje društva, bez kojih društvo ne bi moglo opstati ili bi bila ugrožena njegova sigurnost (tzv. naročito vrijedna pravna dobra). I iz samog opisa pojma kaznenog djela, vidljivo je da i kazneno zakonodavstvo, u pojmu kaznenog djela ukazuje na „*opstanak društva ili njegovu sigurnost",* pa se s pravom (uz naravno posljedice koje izazivaju) ponašanja protivna održivom razvoju, definiraju kao kaznena djela protiv okoliša (Europsko vijeće i Vijeće Europke unije, 2024). Kaznena djela protiv okoliša danas predstavljaju jedno od najprofitabilnijih i najbrže rastućih područja međunarodne kriminalne aktivnosti. Kao temeljni pokretači ove vrste kriminala ističu se rastuće globalne potrebe za prirodnim resursima, ekonomska korist koja uključuje mogućnost visokog profita te regulatorne manjkavosti kako u nacionalnom tako i u međunarodnom zakonodavstvu, ali i u njegovu izvršenju. (Pleić, 2016) Ekološka sigurnost (u funkciji zaštite okoliša, odnosno životne sredine) je novi – suvremeni oblik sigurnosti nastao kao potreba sprečavanja i sankcioniranja prekršaja i kaznenih djela protiv okoliša, te podizanja ukupne razine svijesti o potrebi zaštite životne sredine. Ima globalnu dimenziju, o čemu svjedoče brojne internacionalne i nacionalne aktivnosti, od rezolucija, direktiva i uredbi, od kojih je posljednja i najznačajnija u EU (Direktiva 2008/99/EZ Europskog parlamenta i Vijeća od 19. studenoga 2008., o zaštiti okoliša putem kaznenog prava i

izmjene iste iz 2023. godine (Europski Parlament, 2023)) kojima je Europski Parlament usvojio prošireni popis kaznenih djela protiv okoliša i sankcija, koji su sve zemlje članice dužne inkorporirati u svoje zakonodavstvo. U Republici Hrvatskoj, Kaznenim zakonom, kaznena djela protiv okoliša propisana su u glavi XX i ima ih ukupno 20. (Hrvatski sabor, 2024) U desetogodišnjem razdoblju od 2013. do 2023. godine najbrojnije kazneno djelo protiv okoliša u Republici Hrvatskoj bilo je Ubijanje ili mučenje životinja (985), zatim ga slijedi Protuzakoniti lov i ribolov (900), Protupravna ekspaltacija rudnog blaga (289) itd. (Ministarstvo unutarnjih poslova Republike Hrvatske, 2024)

METODOLOGIJA ISTRAŽIVANJA

Predmet istraživanja ovog rada bio je istražiti pravni okvir vezan za kaznena djela protiv okoliša, njegove pojmove i utjecaj na zajednicu.

Cilj rada je ispitati stanje sigurnosti u Republici Hrvatskoj (u daljnjem tekstu RH) kroz analizu pokazatelja o kretanju broja kaznenih djela, utvrditi najbrojnija kaznena djela, moguće oblike prevencije, te menadžerima, stručnoj i ostaloj javnosti ukazati na štetne posljedice činjenja ovih kaznenih djela po pojedince, tvrtke ali i zajednicu u scjelini. Naime, većina kaznenih djela protiv okoliša čini se i s namjerom menadžera ili osoba zaposlenih u tvrtkama, (olako držeći da se nikada neće otkriti) pa je očito (a na što ukazuju i ranija istraživanja) da je nužan znanstveno stručni rad na planu utvrđivanja stanja ove vrste kriminaliteta, uzroka i povoda, te posljedica, i o njima informiranja stručne i šire javnosti. U radu je korištena je opća metoda i to metoda studije slučaja, a kao pomoćna metoda analize sadržaja, kojom je analizirano nekolikog grupa pokazatelja iz kojih se moglo kvalitetno izvesti zaključak istraživanja.

KAZNENA DJELA PROTIV OKOLIŠA U REPUBLICI HRVATSKOJ

Kaznena djela protiv okoliša propisana su u glavi XX Kaznenog zakona Republike Hrvatske i prema zakonskom rješenju koje je na snazi, a trenutno ih je propisano 20 i to:

Tablica 1. Kaznena djela protiv okoliša prema trenutno važećim odredbama Kaznenog zakona RH-e

Onečišćenje okoliša	Ugrožavanje okoliša radioaktivnim tvarima	Protuzakonito unošenje u okoliš divljih svojti ili GMO-a
Ispuštanje onečišćujućih tvari s plovnog objekta	Ugrožavanje bukom, vibracijama ili neionizirajućim zračenjem	Protuzakoniti lov i ribolov
Ugrožavanje okoliša postrojenjem	Uništavanje zaštićenih prirodnih vrijednosti	Ubijanje ili mučenje životinja
Ugrožavanje ozonskog sloja	Uništavanje staništa	Prenošenje zaraznih bolesti životinja i organizama štetnih za bilje
Ugrožavanje okoliša otpadom	Trgovanje zaštićenim prirodnim vrijednostima	Proizvodnja i stavljanje u promet štetnih sredstava za liječenje životinja
Nesavjesno pružanje veterinarske pomoći	Pustošenje šuma	Promjena vodnog režima
Protupravna eksploatacija rudnog blaga	Protupravna gradnja	Teška kaznena djela protiv okoliša

Izrada: Autori, prema Kaznenom zakonu Republike Hrvatske, 2023.

Progon počinitelja za ova kaznena djela poduzima po službenoj dužnosti (zakonska je obveza da je svatko dužan prijaviti kazneno djelo za koje se postupak pokreće po službenoj dužnosti, koje mu je dojavljeno ili za koje je saznao), odnosno ovlašteni tužitelj je državni odvjetnik (javni tužitelj) (Uremović, Matijević, & Jovanović, 2022). Propisane kazne za kaznena djela protiv okoliša su kazne zatvora koje se mogu izreći u trajanju do godine dana, te od godine do osam godina, te za posebno teška kaznena djela do 15 godina zatvora. (Hrvatski sabor, 2024)

Kretanje broja kaznenih djela protiv okoliša

Ministarstvo unutarnjih poslova RH, statistički obrađuje i na svojim web stranicama dostupnim građanima (Ministarstvo unutarnjih poslova Republike Hrvatske, 2024), objavljuje pokazatelje o kretanju kriminaliteta, te kaznenim djelima, uključujući i kaznena djela protiv okoliša. U istima se za 2023. godinu (kao i većinu godina ranije), nalaze pokazatelji za 13 kaznenih djela protiv okoliša, bez posebnih metodoloških pojašnjenja, pa je za pretpostaviti da ostalih nije bilo ili su bila pojedinačna, odnosno broj im je bio zanemariv. Ukupno je u razdoblju od 2013. do 2023. godine na području RH-e, evidentirano 617.868 kaznenih djela koja se progone po službenoj dužnosti, od kojih njih 2 841 kazneno djelo protiv okoliša ili 0,46%.

Ovdje odmah treba napomenuti da se udjel kaznenih djela protiv okoliša u ukupnom broju kaznenih djela čini neznatnim, no uvijek treba uzeti u obzir visinu nastale štete, kako novčanu, ali posebice utjecaj na okoliš koji je u najvećem dijelu nemjerljiv i posljedice ovih kaznenih djela često ne budu vidljive odmah po saznanju za kazneno djelo. Istovremeno, kod ovih kaznenih djela činjenica da nema žrtve (čovjeka) koja bi trpjela posljedice značajno utječe na broj prijavljenih kaznenih djela, odnosno tamnu brojku ovih kaznenih djela, koja je zasigurno velika. U tablici 2., prikazana su najčešća kaznena djela protiv okoliša i njihovo kretanje u razdoblju od 2013. do 2023. godine, uz ukupan broj kroz promatrane godine, a u grafikonu 1., je prikazano kretanje broja kaznenih djela protiv okoliša u razdoblju 2013.-2023. godina.

Tablica 2. Najčešća kaznena djela protiv okoliša i ukupan broja kaznenih djela 2013.-2023.

KAZNENO DJELO/GODINA	13	14	15	16	17	18	19	20	21	22	23	UK.
Onečišćenje okoliša	3	2	3	1	2	1	-	10	10	3	6	41
Ugrožavanje okoliša otpadom	5	6	18	3	-	3	5	15	14	13	9	91
Uništavanje zaštićenih prirodnih vrijednosti	45	10	16	11	11	9	11	9	5	9	4	140
Uništavanje staništa	2	1	1	-	-	-	-	-	-	3	1	8
Trgovanje zaštićenim prirodnim vrijednostima	4	5	34	7	1	2	1	1	8	20	4	87
Protuzakoniti lov i ribolov	174	122	116	76	56	55	58	71	64	63	45	900
Ubijanje ili mučenje životinja	114	75	56	60	59	111	94	100	111	93	112	985
Nesavjesno pružanje veterinarske pomoći	1	-	-	-	-	-	-	-	-	-	1	2
Pustošenje šuma	5	8	5	2	9	6	8	19	31	22	20	135
Promjena vodnog režima	-	-+	-	-	-	-	-	-	-	-	1	1

Protupravna eksploatacija rudnog blaga	10	134	1	3	116	2	7	3	9	-	4	289
Protupravna gradnja	26	6	8	15	11	11	12	12	15	27	25	168
Ugrožavanje okoliša postrojenjem	-	-	-	-	-	-	-	2	-	-	-	2
Ukupno kaznenih djela protiv okoliša	389	369	258	178	265	200	196	142	258	254	232	2841
Ukupno svih kaznenih djela	62 708	56 851	59 233	55 824	51 287	51 287	55 994	52 082	54 250	53 131	59 262	617 868

Izrada: autori, prema MUP-a, RH-e, 2023.

Grafikon 1. Kretanje broja kaznenih djela protiv okoliša u RH 2013-2023

Izrada: autori, prema MUP-a, RH-e, 2023.

Promatrano prema mjestima – prostoru događanja, i to prema Županijama u Republici Hrvatskoj, uočava se da je najveći broj kaznenih djela protiv okoliša u posljednjih desetak godina evidentiran na području Osječko-baranjske, Zagrebačke, Istarske, Splitsko-dalmatinske i Sisačko-moslavačke županije. Promatrajući prostorni smještaj Nacionalnih parkova i Parkova prirode u Republici Hrvatskoj, vidljivo je da se velik broj kaznenih djela događao u županijama gdje su isti smješteni (Kopački rit, Lonjsko polje, Biokovo, Ivančica, Učka), što je moglo imati nesagledive i dugoročne posljedice po okoliš.

Najbrojnija kaznena djela protiv okoliša

Iz tablice 1., vidljivo je da su u razdoblju od 2013. do 2023. godine, najbrojnija kaznena djela protiv okoliša bila: *Ubijanje ili mučenje životinja (985), Protuzakonit lov i ribolov (900), Protupravna eksploatacija rudnog blaga (289) i Protupravna gradnja (168)*. Iz samih je naziva vidljivo da sva ova kaznena djela, a posebice *Protupravnu eksploataciju rudnog blaga i Protupravnu gradnju*, mogu počiniti i za nju biti odgovorne osobe u poduzećima, koje nesavjesnim djelovanjem, nepoznavanjem propisa ili olako držeći da neće biti otkriveno kazneno djelo mogu nanijeti značajnu štetu poduzećima u kojima su zaposleni (uz štićeno dobro u okolišu).

Kazneno djelo Ubijanje ili mučenje životinja čini onaj tko usmrti životinju bez opravdanog razloga ili je teško zlostavlja, nanosi joj nepotrebne boli ili je izlaže nepotrebnim patnjama. (Propisana kazna za počinitelja je kazna zatvora do jedne godine, a

ako je kazneno djelo počinjeno iz koristoljublja, kaznit će se kaznom zatvora do dvije godine.) Također tko iz nehaja uskratom hrane ili vode ili na drugi način izloži životinju tegobnom stanju kroz dulje vrijeme, kaznit će se kaznom zatvora do šest mjeseci. Životinje će biti oduzete. Najveći broj ovih kaznenih djela u promatranom razdoblju ovog rada (2013-2023) evidentiran je 2013. godine i to njih 114, zatim 2018., i 2921. godine po 111, 2020. godine, 100 itd.

Grafikon 2. Županije s najvećim brojem kaznenih djela protiv okoliša u RH 2012-2023

Izrada: autori, prema MUP-a, RH-e, 2023.

Kazneno djelo Protuzakonit lov i ribolov čini onaj tko lovi divljač u vrijeme lovostaja ili na području na kojem lov nije dopušten ili lovi bez položenog lovačkog ispita, za što će biti kažnjen kaznom zatvora do jedne godine. A tko lovi divljač, ribu ili druge slatkovodne ili morske organizme na način ili sredstvima kojima se oni masovno uništavaju ili upotrebom nedopuštenih pomoćnih sredstava, kaznit će se kaznom zatvora do tri godine. Također zabranjeno je i trajno iznošenje iz zemlje vrhunskih trofeja divljači u inozemstvo, za što je propisana kazna zatvora do jedne godine. Svi predmeti namijenjeni ili uporabljeni za počinjenje kaznenog djela i ulov će se oduzeti. Najveći broj ovih kaznenih djela u promatranom razdoblju ovog rada (2013-2023) evidentiran je 2013. godine i to njih 174, zatim 2014. godine, 122, 2015. godine 116 itd. U kontekstu ovog rada i ekonomije kao primarne teme, o ovom kaznenom djelu i kako ga ne činiti trebaju voditi računa menadžeri i odgovorne osobe u hotelsko, turističkim centrima koja imaju u svojim sadržajima lov i ribolov, na koje se također odnosi ovaj i drugi niz propisa o zaštiti divljači, kako sebi i svom poduzeću ne bi nanijeli financijsku i drugu štetu.

Protupravnu eksploataciju rudnog blaga kao kazneno djelo čini onaj tko protivno propisima obavlja eksploataciju rudnog blaga i time prouzroči znatnu štetu, za što je za počinitelje propisana kazna zatvora do tri godine. Također, tko protivno propisima obavlja eksploataciju rudnog blaga u području koje je propisom ili odlukom nadležnog tijela proglašeno zaštićenom prirodnom vrijednosti, kaznit će se kaznom zatvora od šest mjeseci do pet godina. Predmeti namijenjeni ili uporabljeni za počinjenje kaznenog djela ili nastali počinjenjem kaznenog djela će se oduzeti. Kod ovog kaznenog

djela je kažnjiv i pokušaj. Prvim stavkom ističe se zabrana eksploatacije rudnog blaga protivna propisa, odnosno u prvom redu i najčešće se radi o potrebnim dozvolama i koncesijama za iskope, bušenja, kamenolome i dr., te s njima povezanim propisima koji uređuju te djelatnosti. Drugim stavkom zabranjuju se navedene aktivnosti u zaštićenim područjima (nacionalnim parkovima, parkovima prirode itd.). Ove odredbe posebno moraju poznavati menadžment i odgovorne osobe u poduzećima koje se bave ovakvim radovima, koji na našem prostoru nisu rijetki. Jer u protivnom mogu nastati nesagledive posljedice po poduzeće, kako u pogledu ugleda, ali i oduzimanja imovinske koriste stečene nezakonitim radnjama, ali i predmeta koji su uporabljeni za kazneno djelo, što su najčešće skupocjeni specijalizirani strojevi. Najveći broj ovih kaznenih djela u promatranom razdoblju ovog rada (2013-2023) evidentiran je 2015. godine i to njih 134, zatim 2017. godine, 116, 2021. godine 9 itd.

Kazneno djelo Protupravne gradnje u RH-oj, čini onaj tko protivno propisima gradi građevinu u području koje je propisom ili odlukom nadležnog tijela proglašeno zaštićenom prirodnom vrijednosti, kulturnim dobrom ili drugim područjem od posebnog interesa za državu, a propisana kazna za počinitelja je kazna zatvora od šest mjeseci do pet godina. I ovog posebno moraju biti svjesni menadžeri i odgovorne osobe u građevinskim poduzećima kojih je velik broj na našim prostorima, a uz sankciju, u korelaciji s Zakonom o gradnji, najčešća posljedica je i rušenje bespravno sagrađenog objekta, za koji se u pojedinim slučajevima uložilo više milijuna bilo eura, kuna ili maraka, što i veća poduzeća može dovesti do ozbiljnih problema u poslovanju i uzrokovati stečaj. Najveći broj ovih kaznenih djela u promatranom razdoblju ovog rada (2013-2023) evidentiran je 2022. godine i to njih 27, zatim 2013. godine, 26, 2023. godine 25 itd. Problematika bespravne gradnje koju obuhvaća Zakon o gradnji i dio koji ne obuhvaća Kazneni zakon, daleko je složeniji i ima velik utjecaj na okoliš kako u Hrvatskoj, tako i u okolnim zemljama, gdje se nalaze brojni nelegalno izgrađeni objekti, bez adekvatne komunalne i druge infrastrukture. U razdoblju od 2012., godine do danas prema nekim procjenama legalizirano je više od 900 000 nelegalno izgrađenih objekata u Republici Hrvatskoj, a i dalje se procjenjuje da ih je velik broj i da investitori i nadalje posežu za ilegalnom gradnjom.

REZULTATI POLICIJSKIH AKTIVNOSTI I ŠTETE NASTALE KAZNENIM DJELIMA PROTIV OKOLIŠA

Prema podacima Interpola i Programa Ujedinjenih naroda za okoliš, kaznena djela protiv okoliša, treća su najraširenija kriminalna aktivnost na svijetu s godišnjim porastom od 5-7% (što predstavlja 2-3 puta veću stopu rasta od globalnih ekonomija) i svaku godinu uzrokuju štetu od 110 do 281 milijardu dolara. (Europska komisija, 2021)

Rezultati policijskih aktivnosti u EU ukazuju da je 2022. godine:

- 401 osoba uhićena zbog kaznenih djela protiv okoliša,
- da je ukupna vrijednost zapljena u tim kaznenim djelima 15 milijuna eura, da je zaplijenjeno:
    - 334 620 tona otpada – otpad kojim se nezakonito trgovalo uključuje plastiku, metalni e-otpad, tekstil, papir i miješani otpad i 3 plovila
    - 639 980 kg fluoriranih plinova, čija je vrijednost 12 529 302 eura – F-plinovi moćni su staklenički plinovi s potencijalom zagrijavanja čak većim

od ugljikova dioksida

- 1023 ugrožene vrste divlje faune i flore – uključujući: 5 slonovskih kljova, 386 ptica, 15 jaja papiga, 16 rogova nosoroga, 186 peraja morskih pasa, 72 kornjače, 37 gmazova, 113 koraljnih predmeta, 179 leptira, 14 sisavaca.
- 1255 kg juvenilnih jegulja, vrijednih 1,9 milijuna eura – dugačke su 75 – 90 mm, a uglavnom se prodaju u Aziji kao hrana. (Europsko vijeće, 2023)

Tablica 3. Procijenjeni troškovi (prihod i gubitak) po okvirnim kategorijama kaznenih djela protiv okoliša.

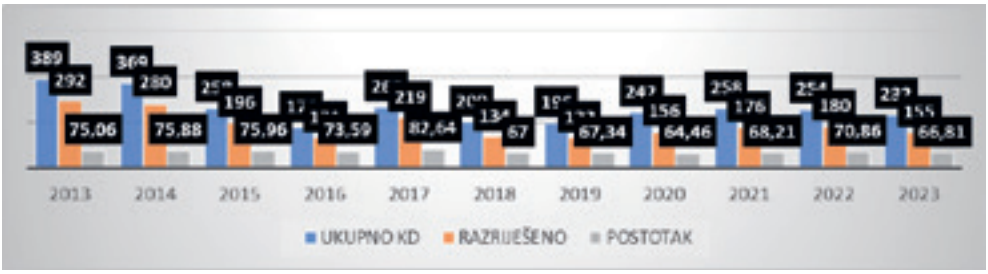
Okvirna kategorija kaznenog djela protiv okoliša	Procijenjeni troškovi (u milijardama USD)
Kaznena djela u kojima su žrtve divljih životinja	7-23
Kaznena djela u šumama (uključujući korporativni kriminal i nezakonitu sječu)	50,7-152
Ilegalni ribolov	11-23,5
Kaznena djela vezana uz otpad	10-12
Ilegalno rudarenje	12-48

Izrada: autori prema: (Bytygi & Moran, 2023)

Uz prethodno opisane, dijelom mjerljive pokazatelje, za istaći je da su tu i posljedice kaznenih djela protiv okoliša koje su teško mjerljive, a u značajnoj mjeri utječu na okoliš, a to su: povećanje razine onečišćenja, uništavanje divlje flore i faune, smanjenje bioraznolikosti, poremećena ekološka ravnoteža i rizici za ljudsko zdravlje.

Kao i kod svih kaznenih djela, tako i kod kaznenih djela protiv okoliša, nisu svi počinitelji istih otkriveni, odnosno kaznena djela razriješena, a postotak razriješenosti u Republici Hrvatskoj u razdoblju od 2013. do 2023. godine kreće se od 64.46% u 2020. godini (najniži), do 82.64% u 2017. godini (najviši). Dakle, u tom razdoblju prosječno 30-35% počinitelja nije otkriveno, što predstavlja jedan od slabijih rezultata otkrivačke djelatnosti. Naime, većina ostalih kaznenih djela u RH-e, ali i EU (i Europsko vijeće ističe da je ova kaznena djela teže otkriti, a počinitelji goniti) imaju znatno veći stupanj razriješenosti.

Grafikon 3. Ukupan broj i razriješenost kaznenih djela protiv okoliša u RH 2012-2023



Izrada: autori, prema MUP-a, RH-e, 2023.

Procijenjena materijalna šteta u kaznenim djelima protiv okoliša u Republici Hrvatskoj u promatranom razdoblju (2013-2023), kretala se od 2 milijuna kuna (najniža) u 2018. godini, do 24,7 milijuna kuna (najviša) u 2014. godini. Ostali pokazatelji prikazani su u sljedećoj tablici.

Tablica 3. Procijenjen šteta nastala kaznenim djelima protiv okoliša u RH 2013-2023.

Godina	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Visina štete (u milijunima kuna)	3,3	11,9	4,0	3,4	17,8	2,0	3,2	9,5	4,0	24,7	5,8

Izrada: autori, prema MUP-a, RH-e, 2023.

EUROPSKA UNIJA I PROBLEMATIKA ZAŠTITE OKOLIŠA PUTEM KAZNENOG ZAKONODAVSTA

Na razini EU, danas je više od 250 zakonodavnih instrumenata, u najvećeme djelu direktiva (koje su čalnice dužne provoditi i implementirati u svoje zakonodavstvo) kojima su utvrđeni standardi i ograničenja vezana uz različita područja zaštite okoliša. Najveći broj aktivnosti na prevenciji kaznenih djela protiv okoliša i zaštite okoliša poduzimao se u posljednjih tridesetak godina. Kako i na razini zemalja članica, tako i na razini EU, brojna su područja zaštite okoliša i životne sredine pokrivena brojnim obvezujućim zakonskim odrednicama. No, kako nam je tema ovog rada kazneno zakondavstvo i okoliš, zadržat ćemo se na tom području. Najvažnija direktiva vezana uz tematiku ovog rada je Direktiva 2008/99/EZ. Nju su kako bi poboljšali zaštitu okoliša, EU Parlament i Vijeće donijeli krajem 2008. godine, a odnosi se na zaštitu okoliša putem kaznenog prava (Europsko vijeće i Vijeće Europke unije, 2024). Direktivom se propisuju kategorije kaznenih djela protiv okoliša, te obvezuju sve članice EU (RH-a ju je u svoje zakonodavstvo implementirana 2013. godine), da u svoja kaznena zakonodavstva implementiraju i kriminaliziraju ponašanja koja štete okolišu, te propišu odvračajuće sankcije za pravne i fizičke osobe koje ista čine. Navedenom direktivom države članice trebale su osigurati da sljedeće sljedeće radnje predstavljaju kazneno djelo ako se počine protuzakonito i namjerno ili barem iz krajnje nepažnje:

a. ispuštanje, emisija ili uvođenje količine tvari ili ionizirajućeg zračenja u zrak, tlo ili vodu, što uzrokuje ili bi moglo uzrokovati smrt ili ozbiljnu povredu osobe ili značajnu štetu za kakvoću zraka, kakvoću tla ili kakvoću vode, ili za životinje i biljke;
b. sakupljanje, prijevoz, oporaba ili zbrinjavanje otpada, uključujući nadzor nad takvim postupcima te kontrolu lokacija zbrinjavanja, i uključujući radnje koje poduzimaju posrednik ili trgovac (gospodarenje otpadom), koje uzrokuje ili bi moglo uzrokovati smrt ili ozbiljnu povredu osobe ili značajnu štetu za kakvoću zraka, kakvoću tla ili kakvoću vode, ili za životinje i biljke;
c. otpremanje otpada, ako ta aktivnost pripada u područje primjene članka 2. stavka 35. Uredbe (EZ) br. 1013/2006 Europskog parlamenta i Vijeća od 14. lipnja 2006. o pošiljkama otpada_i u količini većoj od neznatne, bilo da se radi o pojedinačnoj pošiljki ili o više pošiljaka za koje se čini da su povezane;
d. rad postrojenja u kojem se odvija opasna djelatnost ili u kojem su pohranjene ili se koriste opasne tvari ili pripravci, i koji izvan postrojenja uzrokuje ili bi mogao uzrokovati smrt ili ozbiljnu povredu osobe ili značajnu štetu za ka-

kvoću zraka, kakvoću tla ili kakvoću vode, ili za životinje i biljke;

e. proizvodnja, prerada, rukovanje, korištenje, držanje, skladištenje, prijevoz, uvoz, izvoz ili odlaganje nuklearnih materijala ili drugih opasnih radioaktivnih tvari koje uzrokuju ili bi mogle uzrokovati smrt ili ozbiljnu povredu osobe ili značajnu štetu za kakvoću zraka, kakvoću tla ili kakvoću vode, ili za životinje i biljke;
f. ubijanje, uništavanje, posjedovanje ili uzimanje jedinki zaštićenih vrsta divlje faune ili flore, osim u slučajevima kada se radi o neznatnim količinama takvih jedinki i radnja ima neznatni utjecaj na stanje očuvanja vrste;
g. trgovanje jedinkama zaštićenih vrsta divlje faune ili flore ili njihovim dijelovima ili prerađevinama, osim u slučajevima kada se radi o neznatnim količinama takvih jedinki i radnja ima neznatni utjecaj na stanje očuvanja vrste;
h. svako ponašanje koje uzrokuje značajno narušavanje staništa unutar zaštićenog područja;
i. proizvodnja, uvoz, izvoz, stavljanje na tržište ili korištenje tvari koje oštećuju ozonski sloj.

Imajući na umu da je od donošenja Direktive 2008/99/EZ, prošlo više od 10 godina, u kojem razdoblju su brojne tehnologije uznapredovale, a s njima i pojedini oblici štetnih ponašanja po okoliš koja nisu bila propisana kao kažnjivi, EU je tijekom 2019. i 2020. godine, provela postupak provjere učinkovitosti Direktive o zaštiti okoliša putem kaznenog zakonodavstva i tom prilikom je zaključeno da je potrebno poboljšati pravni okvir za borbu protiv kaznenih djela protiv okoliša. Naime, učinak prve Direktive je bio ograničen kako navodi EU, jer je bio nizak stupanj uspješno istraženih, i s osuđujućom presudom dokazanih kaznenih djela protiv okoliša, njihov progon je složen, a dokazivanje teško. Nadalje, utvrđeno je da su izrečene kazne bile preniske te nisu imale utjecaj na ponavljače ili druge da ne čine ova kaznena djela, odnosno nisu imali utjecaj generalne prevencije.

Izmijenjenom se Direktivom iz 2024. godine, uvode nova kaznena djela (neka od novih kaznenih djela su nezakonita trgovina drvom, koja je jedan od glavnih uzroka deforestacije u nekim dijelovima svijeta, nezakonito recikliranje onečišćujućih dijelova brodova i ozbiljne povrede zakonodavstva o kemikalijama itd.), te je tako s postojećih devet, broj kaznenih djela povećan na osamnaest, ali i preciznije se definiraju kaznena djela protiv okoliša. Na taj način jasnije se definiraju i pojašanjavaju štetna i sada nezakonita ponašanja na štetu okoliša. Uočen problem niskih zapriječenih kazni kao odvračajućeg elementa pokušat će se riješiti na sljedeći nači, da se utvrđuju sljedeće kazne za fizičke osobe koje počine jedno od kaznenih djela obuhvaćenih direktivom:

- za namjerno počinjena kaznena djela koja prouzroče smrt bilo koje osobe – maksimalna kazna zatvora od najmanje deset godina;
- za kvalificirano kazneno djelo s katastrofalnim posljedicama, maksimalna kazna zatvora od najmanje osam godina;
- za kaznena djela počinjena barem iz krajnje nepažnje koja prouzroče smrt bilo koje osobe – maksimalna kazna zatvora od najmanje pet godina;
- za druga namjerno počinjena kaznena djela obuhvaćena zakonodavnim aktom – maksimalna kazna zatvora od najmanje pet godina ili najmanje tri godine.

- Direktivom se utvrđuju i sljedeće kazne za pravne osobe:
- za najteža kaznena djela – maksimalna novčana kazna u visini od barem 5 % ukupnog svjetskog prometa te pravne osobe ili, umjesto toga, od 40 milijuna eura;
- za sva druga kaznena djela – maksimalna novčana kazna u visini od barem 3 % ukupnog svjetskog prometa te pravne osobe ili, umjesto toga, od 24 milijuna eura.

Nova Direktiva propisuje i da je moguće počiniteljima naložiti i dodatne mjere, koje uključuju obvezivanje počinitelja da uspostavi prvobitno stanje okoliša ili nadoknadi štetu, isključenje počinitelja iz pristupa javnom financiranju ili povlačenje njegovih dozvola ili ovlaštenja. Analizom učinka i rada na prevenciji kaznenih djela uočen je i problem nedovoljne osposobljenosti tijela i službenika koji se bave ovim istragama, pa je propisano da će države članice EU morati osigurati osposobljavanja za one koji se bave otkrivanjem, dokazivanjem i presuđivanjem ovih kaznenih djela, što uključuje inspektore, policijske službenike, državne odvjetnike i sudce. Isto tako, nužno je da članice osiguraju dostatna sredstva i resurse za uspješnu provedbu Direktive. Zemlje članice EU imaju dvije godine da u svoje zakonodavstvo implementiraju novu Direktivu koja je dodatno kriminalizirala brojne radnje na štetu okoliša i životne sredine. Na taj način želi se zaustaviti negativan trend koji prati ova kaznena djela, odnosno njihov porast, nezakonito ponašanje pojedinaca i pravnih osoba s ciljem stjecanja nepripadne koristi uz ogromne štete po okoliš i zajednicu te održivost životne sredine. Brojne tvrtke iz raznih područja i njihovi menadžeri trebaju se dobro upoznati kako s novom direktivom, tako i s izmjenama nacionalnog zakonodavstva na planu prevencije kaznenih djela na štetu okoliša, kako sebe i svoje poduzeće ne bi doveli pod udar visokih sankcija propisanih Direktivom. (Europsko vijeće i Parlament, 2008)

PREVENCIJA KAZNENIH DJELA PROTIV OKOLIŠA

Prema definiciji EU prevencija kriminaliteta obuhvaća sve mjere kojima se smanjuje ili na drugi način pridonosi kvantitativnom i kvalitativnom smanjenju kriminaliteta i osjećaja nesigurnosti kod građana, bilo kroz izravno odvraćanje od kriminalnih aktivnosti ili kroz politiku i intervencije osmišljene u cilju smanjenja potencijala za kriminal i uzroke kriminaliteta. To uključuje rad Vlade, nadležnih vlasti, agencija za kazneno pravo, lokalnih vlasti, udruga stručnjaka, privatnoga, dragovoljačkog i civilnog sektora, znanstvenika i javnosti, potpomognutih medijima" (Ministarstvo unutarnjih poslova RH-e, 2005).

Prevencija ovih kaznenih djela, sve je važnija zbog održivog razvoja i opstanka zajednice koji je brojnim ugrožavanjima nesavjesnih pojedinaca značajno ugrožen. Najčešći direktni subjekti prevencije na ovom planu su Ministarstvo zaštite okoliša i prostornog uređenja, Ministarstvo unutarnjih poslova i Ministarstvo pravosuđa i uprave.

Da bi se ova kaznena djela sa uspjehom sprječavala, otkrivala i dokazivala neophodno je poduzimati sljedeće *mjere prevencije*:

- od najmanje dobi djecu treba educirati o odgovornom ponašanju i zaštiti okoliša, uključivati u radionice i akcije na planu zaštite okoliša, jer pravilno stečene navike u najmlađoj dobi često su ispravan temelj za odgovorne buduće generacije;

- educirati svekoliku javnost o pojavnim oblicima ovih kaznenih djela, izmjenama i važećeg zakonodavstva, te mogućnostima prijave i nadležnosti za pojedina kaznena djela ili prekršaje;
- inspektore, policijske službenike, državne odvjetnike i sudce, educirati i osposobljavati s ciljem uočavanja pojavnih oblika ekološkog kriminaliteta te materijama koje ugrožavaju životnu sredinu, te načinima provođenja izvida kaznenih djela, prijavljivanja i dokazivanja istih;
- u odnosu na prethodnu točku, nužno je poticati znanstveno istraživački rad službenika iz ovih agencija koji će polučiti kvalitetne stručno-znanstvene radove koji će dati odgovore kako se metodološki nositi s ovim problemom, poput primjera; (Matijević & Peulić., 2018)
- policijske službenike poticati na prikupljanje obavijesti koja ukazuju na ugrožavanje životne sredine (divlje deponije, iskopi, trgovanje životinjama i sl.), a na tom planu policija treba uspostaviti suradnju s nadležnim Inspektorima, ali i blisku suradnju sa Sigurnosnim službama;
- policajci na terenu, uz stalni nadzor koji provode trebaju vršiti i nadzor nad zaštitom životne sredine kroz vršenje ostalih poslova iz područja sigurnosti putem pozorničko-ophodne i drugih oblika djelatnosti;
- potrebno je provoditi ciljanje promidžbeno edukativne i informativne kampanje s ciljem edukacije šire javnosti o opasnostima ovih kaznenih djela i porukama kako ista ne činiti, odnosno uočena prijaviti nadležnima.
- državni odvjetnici i sudci u svom radu trebaju ustrajno i dosljedno poduzimati sve zakonske mogućnosti kako bi se dokazala ova kaznena djela, te izrekle odgovarajuće kazne počiniteljima koje će na iste utjecati da ponovno ne čine kaznena djela, a na ostale kao generalna prevencija. (Gaćeša, 2009)

ZAKLJUČAK

Iako neki autori navode da problem zaštite okoliša postoji odvajkada, izrazito je istaknut s početka 20. stoljeća do danas, kada posljedice neodgovornog i nezakonitog ponašanja u okolišu, uglavnom s ciljem stjecanja dobiti osjećaju ljudi širom svijeta. Uz pojedince i tvrtke, kaznena djela protiv okoliša sve češće čine i dobro organizirane i umrežene te dijelom po svijetu od vlada podržavane organizirane skupine, koje kršenjem propisa o okolišu i činjenjem kaznenih djela protiv okoliša, stječu enormnu dobit na štetu okoliša, a posljedično onda i na svo pučanstvo zemlje. Nedovoljna svijest o ovom problemu, često podcijenjen utjecaj na okoliš, ne educiranost istražnih tijela i neadekvatna zakonska rješenja u brojnim su zemljama svijeta prepreka (uz težnju onih kojih ih čine da steknu dobit) kvalitetnijoj borbi protiv kaznenih djela protiv okoliša. Sve to za rezultat ima da su ova kaznena djela dospjela na treće mjesto po brojnosti u svijetu. Republika Hrvatska u ukupnom broju kaznenih djela ne bilježi visoku stopu kaznenih djela protiv okoliša, ali se uočava i nedostatna razriješenost koja se po godinama kreće oko 70%, što je značajno ispod postotka razriješenosti za ostale vrste kaznenih djela. Kada tome pribrojimo i kaznena djela iz tzv. tamne brojke može se zaključiti da je stvaran broj ovih kaznenih djela kud i kamo veći, pa je potreban rad na produbljivanju svijesti kod građana o njihovom prijavljivanju, te rad s nadležnim tijelima na edukaciji kako ista procesuirati, što je i smjernica nove Uredbe EU. EU

zakonodavstvo, kada je u pitanju kazneni progon za zaštitu okoliša predstavlja netom (početkom 2024) donijeta Direktiva koja postrožava kazne za počinitelje, te uvodi, odnosno proširuje popis kaznenih djela protiv okoliša. Zemlje članice dužne su istu u svoje zakonodavstvo implementirati u roku od vije godine, što će učiniti i RH-a. Direktiva predstavlja izvrstan temelj prema mišljenju brojnih stručnjaka, tako i autora ovog članka za uspješnu borbu protiv kaznenih djela protiv okoliša, ali prevencija je neizostavna. Samo dobrim odgojem, odgovornim i zajedničkim djelovanjem u zajednici, te reakcijom na počinjeno kazneno djela protiv okoliša stanje sigurnosti na ovom planu bit će popravljeno. Značaj ovog rada je u tome što se na jedinstven način pokušao prikazom kretanja stanja sigurnosti i aktualnih odredbi kaznenog zakonodavstva približiti ovoj tematici te menadžerima u tvrtkama, ali i svim djelatnicima ukazati, (ali i studentima ekonomije) da je granica od stjecanja profita do teških kaznenih djela vrlo meka i lako se prelazi. Ono što je možda do prije bilo nekažnjivo ili Inspekcije nije zanimalo, a radi se o šteti po okoliš (poput zahvata u okolišu kamenolomima, šljunčarama, otpadom) svakim danom sve će biti više od interesa Inspekcija i tijela progona. Visoke zapriječene kazne novom Direktivom mogu dovesti brojna poduzeća do stečaja, a oduzimanje predmeta kaznenog djela (poput radnih strojeva) dodatno onemogućiti poduzeća da se u budućnosti bave bilo kakvim gospodarskim aktivnostima. Sve to ne samo da je potrebno ukazivati menadžmentu i odgovornim osobama u poduzećima, već ovu materiju treba kao i brojne izučavati u rizik menadžmentu na studiju ekonomije. Za napomenuti je i internacionalizacija, naime sve uvezanijom i globalnom mrežom borbe protiv kriminala, i građani drugih zemalja poput primjerice BIH u EU mogu doći pod udar velikih sankcija za kaznena djela protiv okoliša.

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CRIMINAL OFFENSES AGAINST THE ENVIRONMENT IN THE EUROPEAN UNION, THREAT TO SURVIVAL, AND RISK FOR THE COMPANY AND MANAGEMENT

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Summary: *World population growth, economic development, globalization, and industrialization, the race for capital, especially in the last 100 years, have caused numerous benefits to the world's population. But they have also caused many problems which were previously unknown. In the context of this paper, the primary focus is on the pollution of the atmosphere, hydrosphere, and biosphere and the destruction of plant and animal life. The latter affected the health and the survival of people by breaking numerous food chains in nature. The goal of those who are trying to prevent the negative effects is different from the goal of those who wish to acquire capital. Crimi-*

nal offenses against the environment are among the most profitable organized crimes in the world. The latter presents the third most widespread criminal activity, with an annual increase of 3-5%. It has alarmingly reached 110 to 280 billion dollars in damage. Improper waste collection, waste transport, and disposal, illegal emissions, or release of substances into the atmosphere are some of the crimes that are annually increasing, along with the constant need to monitor the situation and pass regulations to prevent and suppress these occurrences. The European Union reacted to these risks, and in 2024, improved the legal regulations, and introduced stricter sanctions with an expanded list of criminal offenses against the environment, which aim to result in a lower number of these criminal offenses, but also a cleaner and healthier environment. The paper defines the issue of environmental protection through the lens of new legislation, provides an overview of the legislative framework and the basic terms at the level of the European Union and the Republic of Croatia related to criminal offenses against the environment, identifies the most numerous ones in the Republic of Croatia, and proposes prevention measures which aim to raise the level of awareness among management, the public and highlight the need to fight against them.

Keywords: *environment, risk, criminal acts, criminality.*

JEL: *G32.*

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INSTRUCTIONS TO AUTHORS

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Authors must respect the scientific methodology when writing their papers. All papers received are forwarded to the members of the Editorial Board for their evaluation, as well as to the experts outside the Editorial Board in case of a specific content of the text. Following their evaluation, the editor in chief proposes to the Editorial Board decisions for further actions as follows:

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II. Which papers to return to the authors with suggestions, recommendations and remarks on how to improve their text prior to sending it for peer review,
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Following the review, should reviewers request so, the paper is sent back to authors to be amended. The reviews are only submitted to the author after both have been received. Besides taking on board the comments and suggestions of reviewers, the authors must also submit a supporting letter in which they list the changes made to their paper, linked with the corresponding page where these have been done. The corrected paper and the supporting letter are sent to the Editorial Board through the OJS platform.

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Upon the proposal by reviewers and in line with the decision by the Editorial Board, the papers are classified into four categories:

I. original scientific paper, which contains the results of an original scientific research unpublished to date;
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Upon the positive decision on publishing, and following proofreading and editing, the paper shall be submitted to the authors for their opinion and check prior to publication.

The author may, upon request, be issued with an appropriate confirmation of the status of his paper. The table "Structure and Form of Paper" provides detailed instructions to authors in relation to the technical layout of the paper, as well as to its recommended structure.

STRUCTURE AND FORM OF PAPER

COVER PAPER

Must include the title of paper, name of author, his/her academic title, name and address of institution where the author works, position and contact details in both Bosnian/Croatian/Serbian and English (if the paper is written in languages of the people of Bosnia and Herzegovina).

FIRST PAGE

Must include the title of paper, abstract, key words and JEL classification.

Abstract

a. If the paper is written in the languages of the people of BiH, the abstract will contain between 150 and 300 words. At the end of the paper, an extended summary (English version) is written behind the list of references, which should be 400-500 words long. The abstract is written in the third person, in one paragraph and must contain: (1) the aim of the research, (2) research methods, (3) the basic result of the research, and (4) the conclusion of the research.
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Key words are written in both languages of the people of BiH and English (if the paper is written in the languages of the people of BiH) and must contain the gist of the paper. Up to 5 key words should be provided.

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JEL classification is provided under the key words in both languages of the people of BiH and English (if the paper is written in languages of the people of BiH) in accordance with the Journal of Economic Literature classification (available at https://www.aeaweb.org/econlit/jelCodes.php?view=jel).

RECOMMENDED STRUCTURE OF PAPER[1]

1. Introduction

It should define the problem, subject matter and aim of research, as well as the motive for undertaking such research. The Introduction should also offer one or several hypotheses of the paper, which should be developed in the final chapter of the paper – the Conclusion. The Introduction ends with the description of the paper's structure.

[1] Depending on the specifics of the topic, and in agreement with the Editorial Board, the paper may be conceptualized differently.

2. Literature overview

Literature Overview involves the overview of relevant literature in the area of the paper, with key knowledge available to date or relevant results of research conducted to date. Exceptionally, the author may include Literature Overview in the Introduction.

3. Methodology

Methodology must be described clearly and precisely, the methodological contribution of authors (if available) must be established and it must all be done in a fashion that it allows for its testing by other authors.

4. Empirical evidence

Empirical evidence represents the documentation background to the research conducted.

5. Results and discussion

Results and discussion represent part of the paper in which results of the research conducted are explained and compared to similar research, the limits of the interpreted results are analysed, as are their significance and potential implications.

6. Conclusion

Conclusion is the final chapter of the paper. It should not be confused with the paper's abstract. It should contain the elaboration of the original hypothesis, the evaluation of the results of research, its contri- bution, the overview of limitations and problems relative to research implementation, the guidelines for future research, the recommendations stemming from the results of research etc. As is the case with abstract, the Conclusion should be contained in one paragraph.

LITERATURE

The list of literature should be provided at the end of paper, and it should only contain those titles which are referred to by the author throughout the text. It should be provided in the alphabetical order of the last name of authors of the mentioned works with no classification per types, and data on the work must be complete, in accordance with the standards of bibliography. If several works of the same author have been published in the same year, the year should be accompanied by designations "a,b,c".

The used literature should have at least 15 sources for review scientific papers, while for all other papers there should be at least 10 sources. The bibliography should be of a recent date.

It is recommended that the authors refer to sources of papers previously published in the EMC Review (http://www.emc-review.com), as well as those referenced by the Institute of Science Information.

Use **APA** style (http://www.apastyle.org) to write references for text and literature references.

Examples of citations:

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Christensen, C. M. (2012). The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. Boston, M. A.: Harvard Business School Press.

Mieg, H. A., Töpfer, K. (ur.) (2013). Institutional and Social Innovation for Sustainable Urban Development. Oxon i New York: Routledge.

Chapters in books/papers in the collections of papers: last name, initials of the first name. (year) Title of chapter/section'. In: Title of book, last name, initials of the first name of author/editor. Place of publication: publisher: pages. (if there are two or three authors, their last names and initials should be listed in order, separated by a comma).

Braun, G. O., Scott, J. W. (2013). Smart Growth: sustainability innovations. In: Institutional and Social Innovation for Sustainable Urban Development, Mieg, H. A., Töpfer, K. (ur.). Oxon i New York: Routledge: 44-57.

Peter, C. (2013). Privatization, urban fragmentation, and sustainable development. In: Institutional and Social Innovation for Sustainable Urban Development, Mieg, H. A., Töpfer, K. (ur.). Oxon i New York: Routledge: 130-146.

Doctoral dissertations: last name, initials of the author. (year) Title of work, type of work and the institution where the dissertation was defended.

Hall, R. P. (2006). Understanding and Applying the Concept of Sustainable Development to Transportation Planning and Decisi- on-Making in the U.S., doktorska disertacija Massachusetts Institute of Technology,

Articles in journals: last name, initials. (year) Article title. Name of journal, volume (number): pages. (if there are two or three authors, their last names and initials should be listed in order, separated by a comma)

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McMaster, I., Bachtler, J. (2005). Implementing Structural Funds in the New Member States: Ten Policy Challenges. European Policies Research Centre. Dostupno na: http://www.eprc.strath.ac.uk/eprc/Documents/pdf_files/12A07_McMaster-Bachtler_paper. pdf [24.11.2014.].

TECHNICAL INSTRUCTIONS

- The paper should be written in Microsoft Office Word programme (MS Office Word 95 and later versions).
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- The text should be justified and a single line spacing must separate paragraphs.
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The paper uses tables, charts and figures in an appropriate and clear manner		
The length of paper is in accordance with the Instructions to Authors		
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Explanation (only if the answer is "NO"):	
Final evaluation Mark:	(Excellent ----------Poor) 5 4 3 2 1
Explanation of the final evaluation (if reviewer sees it necessary):	

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**paper which contains the results of an original scientific research unpublished to date;

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