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UTICAJ POLITIČKIH ODNOSA NA SPOLJNOTRGOVINSKI PROMET PROIZVODA POSEBNE NAMENE

Emir Smajilović¹, Nikola Radić², Vlado Radić³

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Apstrakt

Međunarodna trgovina je glavna pokretačka snaga ekonomskog razvoja. Pojavljuje se kao sfera međunarodnih ekonomskih odnosa i formira se od trgovine robom i uslugama svih zemalja sveta. Međutim, na međunarodnu trgovinu najveći uticaj imaju politički odnosi u svetu. Model ponašanja na političkoj sceni u poslednjih trideset godina zasnovan je postavljanju neprihvatljivih uslova na političkom, ekonomskom i vojnom segmentu, koji odudaraju od definisanih i opšteprihvaćenih međunarodnih odnosa, zanemarivanju interesa i grubom mešanju u unutrašnja pitanja malih i nerazvijenih zemalja. U kontekstu navedenog, izvoz proizvoda posebne namene (naoružanja i vojne opreme) postao je problematična ekonomska aktivnost. S jedne strane, zemlje Zapada predvođene Sjedinjenim Američkim Državama (SAD), isporučuju naoružanje i vojnu opremu Ukrajini kao "pomoć u obuzdavanju ruske agresije". S druge strane, zemlje kao Srbija su u nezavidnoj situaciji jer imaju šta da izvezu, ali je to nemoguće zbog dešavanja na političkoj sceni. Budući da Rusija i Ukrajina nisu priznale nezavinost Kosova, Srbija ne može da izvozi naoružanje i vojnu opremu tim zemljama, pa je prinuđena da se okrene drugim tržištima i kupcima.

Ključne reči: *politički odnosi, velike sile, sukobi, spoljnotrgovinski promet, vojna industrija*

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Uvod

Spoljnotrgovinski promet proizvoda posebne namene (naoružanja i vojne opreme) zavisi od mnogih faktora, pre svega postojanja viškova određenih sredstava, ugovornog odnosa između prodavca i kupca, analize političkih i bezbednosnih aspekata eventualne realizacije prometa, te izdavanja dozvola nadležnih organa (institucija). Viškovi sredstava naoružanja i vojne opreme su potreban ali ne i dovoljan uslov da bi se izvoz realizovao. Naime, nije dovoljno da na stokovima (zalihama) postoji određena količina sredstava naoružanja i vojne opreme. Ta sredstva treba da zadovolje stroge uslove kvaliteta, kako po funkcionalnosti, tako i po izgledu, zaštiti, čuvanju pod posebnim uslovima, godinama starosti, ceni itd. (Radić, Radić, 2018, Radić, Radić, 2018).

Na izvoz naoružanja i vojne opreme veliki uticaj imaju politički odnosi u svetu, kao i međusobni odnosi pojedinih zemalja. U svetlu krize i sukoba u Ukrajini, politički odnosi su pogoršani, posebno prema Rusiji (Blum, 2019; Thurner, Schmid, Kauermann, 2019; Radić, Radić, Ravić, 2022). Drugo, SAD i NATO saveznici uveli su niz sankcija prema državi, institucijama i pojedincima u Rusiji, sprečavajući na taj način bilo kakvu ekonomsku ili vojnu saradnju. Takav sled stvari već dve godine utiče ne samo na zemlje koje nisu uključene u sukobe i nisu uveli sankcije Rusiji, nego i na one kojima se pretilo bilateralnim sankcijama ukoliko se ne povinuju zahtevu SAD i NATO. Međusobna uslovljenost specijalne operacije Rusije u Ukrajini i dešavanja na ekonomskom planu, prvenstveno u oblasti energenata, žitarica i drugih poljoprivrednih proizvoda, doveli su do enormnog povećanja cena nafte i gasa, onemogućili su snabdevanje preko ranije izgrađenih gasnih koridora, plasman žitarica i povećale izgleda za glad stotina miliona ljudi širom sveta (Hendix, 2023).

S početkom specijalne operacije Rusije u Ukrajini, primarni zahtev koji su SAD nametnule drugim zemljama odnosio se na prekid snabdevanja naftom i gasom iz Rusije i prelazak na alternativne koridore snabdevanja koji su u ingerenciji SAD. Drugi aspekt pogoršanja političkih odnosa vezuje se za vojnu pomoć zemalja članica NATO oružanim snagama Ukrajine. Naime, osim uvođenja sankcija Rusiji, zemlje članice NATO su se obavezale da će pomoći Ukrajini isprukama savremenog naoružanja, koje poslednjih meseci obuhvataju sredstva koja su dugo bila pod zabranom izvoza u druge zemlje. Isporuke naoružanja i vojne opreme dozvoljene su samo zemljama članicama NATO, kao i njihovim partnerima u svetu – Australiji, Japanu, Južnoj Koreji itd.

U kontekstu konflikta između Rusije i Ukrajine, izvoz naoružanja i vojne opreme iz Srbije opterećen je političkim razlozima (Radić, Radić, Ravić, 2022). Rusija i Ukrajina nisu priznale tzv. Kosovo, pa bi izvoz naoružanja i vojne opreme bilo kojoj strani u sukobu bio kontraproduktivan. Stoga su srpska preduzeća i izvoznici u specifičnoj situaciji da ne smeju da se opredeljuju ni za jednu stranu u sukobu,

što onemogućava realizaciju izvoza i ostvarivanje prihoda. Dakle, specifikum ratne situacije definiše i limitira ponašanje učesnika u izvoznim aktivnostima.

Cilj istraživanja i korišćena metodologija

Cilj istraživanja je da ukaže na međuzavisnost političkih i vojnih odnosa u svetu i mogućnost spoljnotrgovinskog prometa proizvoda posebne namene. Budući da se politički odnosi reflektuju na gotovo svaku granu ljudske delatnosti, istraživanjem će se identifikovati čitav niza barijera koje stoje pred izvoznicima navedenih proizvoda. Poseban akcenat je na položaju domaćih kompanija u sferi prometa proizvoda posebne namene.

U skladu sa definisanim ciljem istraživanja, u radu će se primeniti metode analize i sinteze, indukcije i dedukcije, te komparacije. Analizom se predmet istraživanja rastavlja na sastavne delove, odnosno na činioce strukture, funkcija, veza i odnosa u određenom prostoru i vremenu. Sintezom se shvataju složene celine preko njihovih pojedinačnih i posebnih delova. Indukcijom se iz više posebnih, pojedinačnih činilaca nekog predmeta izvodi opšti sud, a dedukcijom se izvode posebna i pojedinačna saznanja o predmetu istraživanja. Svako istraživanje se vezuje za poređenje, tj. komparaciju, kada se poredi nepoznato sa poznatim, novo sa starim, i formira novo saznanje o nepoznatoj pojavi, predmetu, procesu, odnosu i sl.

Izvoz proizvoda posebne namene

Uprkos činjenici da se na razmeđu dva milenijuma vojno-politička situacija u svetu znatno izmenila, politika sile dobila je nove sadržaje i osetno veće dimenzije, a u postojeće strategije unesen je novi, ofanzivni duh, pa je sila i dalje odlučujući faktor za realizaciju političkih ciljeva. Zaoštreni međusobni odnosi između država i naroda nastoje se rešiti silom, radi čega su u velikim i malim državama, u bogatim i siromašnim, stvorene moderno opremljene armije, pa njihovo snabdevanje sredstvima naoružanja i vojne opreme spada u ključna pitanja unutrašnje i spoljne bezbednosti i u direktnoj je vezi sa ekonomskim razvojem. Naoružanje i opremu savremenih armija čine najsloženiji borbeni sistemi i sredstva velika vatrene moći i preciznosti, automatizovani po načinu dejstva, pouzdani i kvalitetni po tehnologiji izrade i, nadasve, skupi. U miru tehnološka superiornost i performanse oružja predstavljaju faktor odvrćanja, a u sukobima doprinose poboljšanju borbene efikasnosti i smanjenju gubitaka (Radić, 2014).

Ne ulazeći u istorijsku retrospektivu, uređenost savremenog sveta jasno ukazuje da se sve zemlje po svojoj strategiji i po stepenu društveno-političkog i privrednog razvoja mogu stvrstati u tri grupe:

- prvu grupu čine zemlje Zapada, Rusija, Japan, Južna Koreja, Kina i Indija,

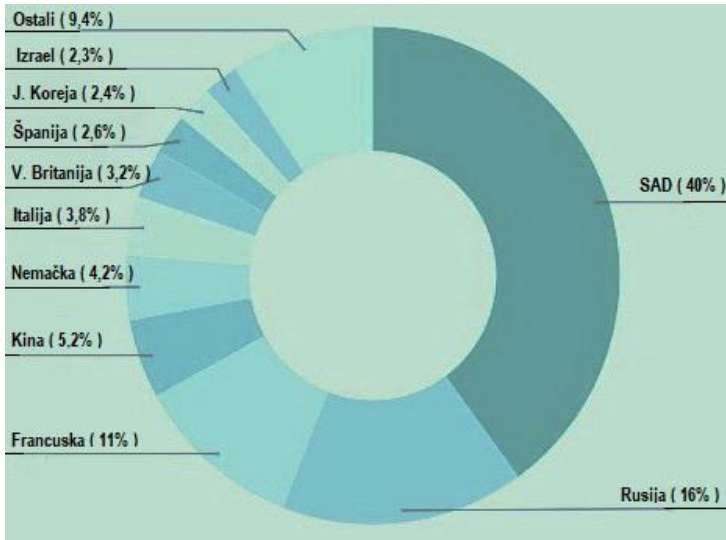
- drugu grupu čine zemlje koje su prinuđene da se u razvojnoj politici oslanjaju na stranu pomoć (neke zemlje Južne Amerike, Azije i severne Afrike, zemlje istočne Evrope koje su pripadale socijalističkom bloku),
- treću grupu čine nerazvijene zemlje i neke zemlje u razvoju (Stamatović, 2001).

Zemlje prve grupe raspolažu snažnim i moderno opremljenim oružanim snagama, prilagođenim vojnoj doktrini koja je kod nekih zemalja ove grupe deklarativno, a kod nekih istinski odbrambena. Kod zemalja druge grupe uočavaju se dve različite vojne politike, dve strategije odbrane. Jednu predstavljaju zemlje koje svojim konceptom odbrane obezbeđuju potpunu političku samostalnost i nezavisnost, uprkos neophodnosti oslanjanja na stranu pomoć u privrednom razvoju. Drugu predstavljaju zemlje koje su svoj koncept odbrane prilagodile ili podredile vojnoj strategiji zemlje na koju se najviše oslanjaju u sopstvenom privrednom razvoju. Zemlje treće grupe, po pravilu, nemaju konzistentnu odbrambenu strategiju, već je prilagođavaju aktuelnim unutrašnjim odnosima i mogućnostima, odnosno uslovima materijalizacije vojne politike (Stamatović, 2001)

Navedena uslovna klasifikacija imala je smisla za uslove bipolarnosti u globalnim svetskim odnosima i u času kada se ljudska civilizacija našla u nekom novom stanju u kome se nastoji nametnuti "novi svetski poredak", u kojem će jedna sila (država) upravljati pravilima igre. Odgovor na pitanje koliko će projekat izgradnje "novog svetskog poretka" uspeti zahteva svestrana razmatranja. Međutim, ono što se može tvrditi sa dovoljnom sigurnošću jeste da u skoroj i daljoj budućnosti ljudska civilizacija neće ostati bez oružja, neće nestati vojne sile i neće biti politički i ekonomski samostalne države bez vlastitih oružanih snaga. Svet i odnosi u njemu su na nesreću još toliko nesavršeni da pacifizam, u osnovi krajnje ljudski i civilizacijski poriv, zadržava metafizičku suštinu.

Izvoz naoružanja i vojne opreme u svetu svake godine beleži nove rekorde u pogledu ostvarenih profita od prodaje. Decenijama su u toj trci prisutne SAD, Rusija, Francuska, Velika Britanija i Nemačka, a poslednjih godina pridružila im se i Kina (Tian et al., 2020; SIPRI, 2022). Međunarodne agencije i institucije koje se bave proučavanjem konflikata, trke u naoružanju ili praćenjem izvoza–uvoza naoružanja i vojne opreme, svake godine objavljuju podatke o ostvarenim nivoima izvoza ili uvoza. Prema podacima međunarodnog instituta za mirovna istraživanja iz Stokholma (SIPRI), u periodu 2018-2022. godine učešće prvih deset zemalja u svetskom izvozu naoružanja i vojne opreme prikazano je na slici 1.

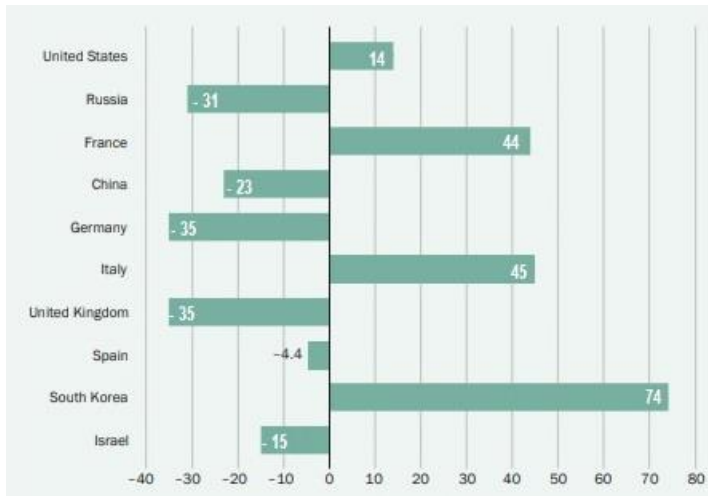
Slika 1. Globalni udeo u izvozu glavnog oružja od strane 10 najvećih izvoznika, 2018–22



Izvor: SIPRI Arms Transfers Database, 2023.

Obim međunarodnog transfera glavnog naoružanja u periodu 2018–2022. godine bio je niži za 5,1% nego u periodu 2013–2017. i 4,8% veći nego u 2008–2012. godine (slika 2).

Slika 2. Promene u obimu izvoza naoružanja



Izvor: SIPRI Arms Transfer Database, 2023.

Pet najvećih izvoznika u periodu 2018–2022. (SAD, Rusija, Francuska, Kina i Nemačka) zajedno su učestvovali sa 76% u svetskom izvozu naoružanja. Pet

najvećih uvoznika u periodu 2018–2022. (Indija, Saudijska Arabija, Katar, Australija i Kina) zajedno su učestvovali sa 36% u svetskom uvozu naoružanja (Tulyakova, Dengov, Gregova, 2021; SIPRI, 2023; Global Economy 2023; Gould, Pollitt, Wezeman, 2023; Kong, 2023; Hedlund, 2023).

Ratna operacija u Ukrajini je izazvala značajan porast tražnje za oružjem u Evropi, što će najverovatnije dovesti do povećanja uvoza oružja od strane evropskih država (Wezeman, 2023). Ukrajina je do 2022. godine bila zanemarljiv uvoznik oružja, ali je od početka ratne operacije vrlo brzo postala treća po veličini destinacija za oružje u svetu (iza Katara i Indije). Prema podacima SIPRI, samo na Ukrajinu otpada 31% u prometu oružja u Evropi i 8% u svetskim isporukama. Uvoz Ukrajine tokom 2022. godine, uključujući donacije, porastao je više od 60 puta. Isporuke u Ukrajinu bile su uglavnom u oružju sa zaliha. Među njima najznačajnija su artiljerijska oruđa iz SAD, oklopna vozila iz Poljske, protivtenkovski projektili iz Velike Britanije, kao i više protivvazдушnih sistema iz Nemačke, Velike Britanije i Francuske (SIPRI, 2023; Hartung, 2022)

Izvan Evrope uvoz oružja je opao za 40% u Africi, dok je u Americi opao za ukupno 21%, na Bliskom istoku za 8,8% i širom Azije za 7,5%, a u istočnoj Aziji zabeležen je porast zbog geopolitičkih tenzija Tajvana sa Kinom i Južne Koreje sa Severnom Korejom. U tom regionu najveću stopu rasta uvoza, 171%, registrovao je Japan, a zatim Južna Koreja sa 61%. Glavni dobavljač ovih zemalja bile su SAD (van Lieshout, Beeres, 2022).

Na osnovu podataka može se zaključiti da je u mnogim zemljama opremanje oružanih snaga savremenim naoružanjem i vojnom opremom ubrzano s početkom specijalne vojne operacije Rusije u Ukrajini. Posebno je to očigledno u zemljama uključenim u poznata poprišta ratnih i drugih sukoba većeg ili manjem intenziteta (Sirija, Irak, Iran, Jemen, Južna Koreja, Severna Koreja, čak i Japan). Na primer, Rumunija, iako je članica NATO pakta, u poslednje dve godine intenzivno se naoružava. Trenutno su joj Bugarska, Izrael i SAD primarni dobavljači oružja, uključujući municiju, avione i brodove. U 2022. godini Rumunija je izdvojila u budžet za odbranu oko 7,3 milijarde evra, koji je u 2023. godini povećan za 2,5% BDP-a (Ichim, 2022; Bromley, 2022). Slična situacija je i sa drugim zemljama članicama NATO (npr. Hrvatska) koje izdvajaju značajne iznose za modernizaciju oružanih snaga. Čak i Švedska i Finska, koje su odlučile da pristupe NATO-u, počinju modernizaciju i opremanje oružanih snaga novim sistemima. Međutim, opšta konstatacija za sve zemlje u pogledu naoružavanja jeste da se opremaju dostupnim i cenovno prihvatljivim naoružanjem.

Navedeni primeri govore o stanju odnosa između zemalja kupaca i zemalja prodavaca. Zemlje kupci mogu da nabave naoružanje od bilo koga ukoliko imaju finansijska sredstva i ukoliko je zemlja prodavac voljna da im isporuči traženo naoružanje. SAD i zapadni saveznici, uključujući Izrael, nerado isporučuju

najsavremenije sisteme i sredstva naoružanja i vojne opreme, pod izgovorom da bi mogli da ih se domognu ruski i kineski stručnjaci.

Druga još značajnija karakteristika izvoza naoružanja i vojne opreme tiče se vojne supremacije SAD i njene logističke "podrške" kritičnim zemljama i njihovoj infrastrukturi (IISS, 2023). Iako je hiljadama kilometara udaljena od SAD, Ukrajina je u trenutnom konfliktu stavljena u logistički lanac SAD i ostalih zemalja NATO. To znači da će isporuka naoružanja i vojne opreme, ekspertska i druga pomoć Ukrajini trajati koliko traje i specijalna operacija. Dalje, iz informacija u zapadnim medijima, predsednik Bajden obećao je predsedniku Zelenskom pomoć Ukrajini kroz proizvodnju savremenih sistema i sredstava naoružanja (Sharp, 2023). U azijskom regionu, SAD podržavaju Tajvan iako ga Kina smatra sastavnim delom svoje teritorije. SAD uveliko opremaju oružane snage Tajvana, imaju pod patronatom Južnu Koreju i predstavljaju zadnju liniju odbrane od eventualnog napada Severne Koreje.

U sadašnjoj konsletaciji odnosa i snaga, Rusija je privremeno onemogućena da isporučuje svoje naoružanje drugim zemljama, tradicionalnim kupcima. To se prvenstveno odnosi na region Azije, Afrike i Južne Amerike. S druge strane, Kina, koja ni na koji način nije involvirana u sukob u Ukrajini, širi obim svoje saradnje sa potencijalnim kupcima njenog naoružanja – Afrika, Indija, zemlje bivšeg Sovjetskog Saveza, Vijetnam i sl. (China Power Team, 2021). Dakle, izvozna spirala će i ovaj put najviše pogodovati SAD, a manje evropskim članicama NATO. Glavno pitanje je koliko će Evropa još izdržati.

Nakon što je Vašington odlučio da žrtvuje podršku Ukrajini kako bi sprečio blokadu sopstvene vlade, evropski lideri znaju da će se suočiti s pritiskom da, makar privremeno, preuzmu vodeću ulogu u podršci Kijevu. Slabost vojne industrije je ozbiljna prepreka, a diplomatska i politička strana pitanja će, takođe, postati problem. Zelenski obećava da će se Ukrajina i dalje boriti "do pobeđe" i da njegova spremnost da se suprotstavi Rusiji nema rok trajanja.

Ali problemi EU su takve prirode da, što je verbalno više posvećena pomoći Ukrajini, to je manja njena sposobnost da joj stvarno pruži vojnu i ekonomsku podršku. Jedan primer je Slovačka. Slovaci su na izborima poslali jasnu poruku o granicama evropske podrške Ukrajini: glasali su za bivšeg premijera Fica, koji je energično vodio kampanju protiv antiruskih sankcija i obećao da Bratislava neće poslati više nijedan metak Kijevu. Poljska duže vreme nije na istim talasima sa Ukrajinom, što zbog izbeglica, što zbog žita, pa je pitanje da li će se posle parlamentarnih izbora uopšte vratiti na stari kurs prema Ukrajini. I Varšava je pretela da od naoružanja nema više bilo šta da pošalje preko granice, ali je pod pritiskom SAD malo ublažila stav, pa će poslati još nešto starog naoružanja. Mađarski premijer Orban je toliko zategao da je Ukrajina morala da skine mađarsku OTP banku sa liste sponzora rata (jer saraduje s Rusijom) kako bi

Budimpešta ukinula veto s paketa EU vojne pomoći Kijevu u vrednosti od 500 miliona evra (Pollet, 2023).

Birajući između pojedinačnog vlastitog opstanka i žrtvovanja svega zarad Ukrajine, evropske članice su sada na testu kako će se opredeljavati usled ekonomske stagnacije, visoke inflacije i budžetskih ograničenja. EU je obećala da će Ukrajini obezbediti milion granata do proleća iduće godine. Pola godine je već prošlo, a unija je isporučila samo četvrtinu obećanog, i to iz vlastitih rezervi. Što se tiče proizvodnje, stručnjaci kažu da evropska vojna industrija trenutno može da proizvede samo pet do deset odsto artiljerijskih granata potrebnih Ukrajini (Ataman, Sebastian, 2023).

Ne treba zaboraviti da SAD obezbeđuju rezolutnu političku podršku interesima Kijeva i upravo je ta podrška i dogurala EU do plaćanja velikog finansijskog tereta. A sve zbog straha da će Vašington odbaciti svoje obaveze prema NATO-u. Da li je interes EU zaista bio da NATO dođe pred vrata Moskve – pitanje je koje se sada sve češće postavlja u evropskim prestonicama.

Izvoz proizvoda posebne namene iz Srbije

Odluka organizacija i menadžera da se bave spoljnotrgovinskim prometom naoružanjem i vojnom opremom praćena je mnogim problemima, barijerama, zabranama, nametanjem volje jačih u odnosu na slabije, istiskivanjem sa tržišta, čak i pretnjama.

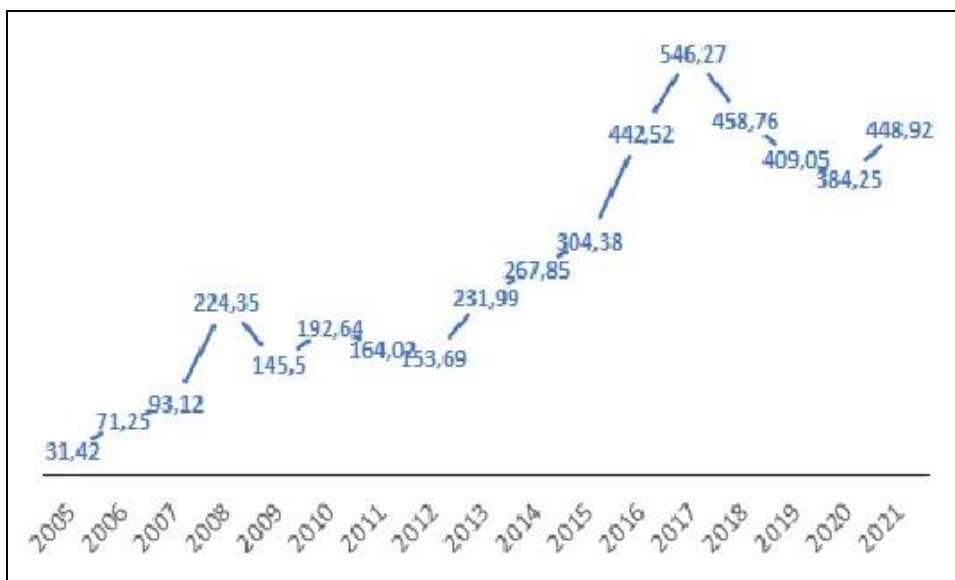
U situaciji kada vojna industrija neke zemlje ima potencijal da izveze naoružanje i vojnu opremu na strano tržište, najčešće se tome suprotstavljaju politički, ekonomski i vojno jače zemlje, jer se na taj način smanjuje tržište za njihove kompanije. Drugi razlog je nabavka proizvoda naoružanja i vojne opreme po nižim cenama, jer se mogu nametnuti restriktivni uslovi nabavke ili kupovine. To stavlja zemlje potencijalne izvoznike pred svršen čin – ili će prihvatiti "pravila igre" ili će odustati. Treći razlog, bar u slučaju sukoba Rusija–Ukrajina, jeste konsenzus oko stava SAD da se sukob mora nastaviti i taj stav je obavezujući za ostale članice NATO i EU.

Srbija nije nametnula sankcije Rusiji niti podržava ratna dejstva u Ukrajini. Dakle, ostala je sama na jednoj strani, jer su na drugoj sve zemlje NATO i EU, uz Japan, Južnu Koreju, Australiju itd. Srbija je u posebno teškoj situaciji jer Rusija, kao ni Ukrajina, nisu priznale nezavisnost Kosova i Metohije. U ovom kontekstu, izvoz naoružanja i vojne opreme iz Srbije bilo kojoj strani u sukobu smatrao bi se kršenjem međusobnih odnosa sa Rusijom i Ukrajinom.

Posle decenija zastoja, nemogućnosti plasmana, sankcija, ratnih dešavanja u bivšoj SFRJ, agresije NATO, preduzeća vojne industrije u Srbiji počela su da se vraćaju na tradicionalna tržišta. To podrazumeva ne samo male zemlje ili zemlje u razvoju, nego plasman proizvoda u SAD, zemlje NATO, zemlje azijskog i

afričkog kontinenta. Obim izvoza povećavan je iz godine u godinu, tako da su po kvalitetu, tradiciji, rokovima isporuke i cenovnom faktoru izvozni artikli bili konkurentni i donosili su visok devizni priliv (slika 3). Stabilizacija poslovanja, preduzete mere tehnološke, organizacione i finansijske konsolidacije doprinele su da se preduzeća vojne industrije ponovo pozicioniraju na stara, ali i nova tržišta (Radić, Radić, 2018; Smajilović, Radić, Radić, 2023).

Slika 3. Izvoz naoružanja i vojne opreme iz Srbije (miliona USD)



Izvor: Ministarstvo unutrašnje i spoljne trgovine, 2023.

Izvoz naoružanja i vojne opreme iz Srbije u druge zemlje regulisan je zakonom koji je gotovo u potpunosti kompatibilan sa evropskim zakonskim okvirima, pa podrazumeva metodologiju i procedure koje su odobrene na državnom nivou i koje ispunjavaju posebne uslove nekih zemalja sa kojima Srbija saraduje (prvenstveno SAD). Zakonski okvir propisuje ko može da se bavi izvozom naoružanja i vojne opreme, koje uslove mora da ispuni organizacija ili lice da bi se upisalo u registar izvoznika, koja je procedura prijavljivanja i slanja zahteva za dobijanje izvozne dozvole, koje bezbednosne procedure se moraju izvršiti i, tek posle svega toga, dobijanje dozvole za izvoz naoružanja iz Srbije.

Zakonski okvir je definisao da su Ministarstvo unutrašnje i spoljne trgovine (ranije Ministarstvo trgovine, turizma i telekomunikacija) i Ministarstvo odbrane ključni za uvođenje u registar, podnošenje zahteva i dobijanje dozvole za izvoz. Pored njih, u proces donošenja odluka i dobijanja (ili odbacivanja zahteva) uključeni su i Ministarstvo unutrašnjih poslova, Ministarstvo spoljnih poslova i Bezbednosno-informativna agencija. Budući da srpska preduzeća imaju iskustva u pogledu sankcija, da su pod neprekidnom paskom stranih obaveštajnih i drugih

agencija, pre bilo kakvog zahteva, preduzeća sprovode neophodne interne provere i analize o mogućim efektima izvoza.

Ono što je najvažnije, sva preduzeća vojne industrije i ostali registrovani izvoznici moraju se pridržavati bezbednosnih, a posle i političkih interesa Srbije. Ukoliko se učini da će izvoz biti sporan za bilo koju stranu, pa i za tradicionalnog i višegodišnjeg kupca, on se svestrano razmatra na svim nivoima i ako se utvrdi da je bezbednosno i politički štetan, zahtev se odbacuje i ne odobrava izvoz. To se dešava u slučajevima izvoza u zemlje koje su pod unilateralnim ili bilateralnim sankcijama određenih zemalja. Na primer, određene zemlje su pod unilateralnim sankcijama SAD i izvoz naoružanja u te zemlje SAD smatraju kršenjem određenih pravila, propisa ili rezolucija. Druge zemlje su pod sankcijama Ujedinjenih Nacija (UN) i ta situacija važi dok god se sankcije ne "skinu", tj. dok se određena zemlja ne izbriše sa spiska zemalja kojima je zabranjen promet naoružanja i vojne opreme (Hamilton, 2020).

Srbija je više puta bila predmet rasprava na međunarodnim forumima kada se tvrdilo da je izvozila naoružanje i vojnu opremu u zemlje koje sponzoriju terorizam, krše ljudska prava i ne pridržavaju se međunarodnih ugovora u vezi prometa naoružanja i vojne opreme. Često su to bile fabrikovane optužbe, jer se, na kraju, dokazalo da nisu tačne. Međutim, ekonomski efekti takvih optužbi bili su onemogućavanje izvoza naših preduzeća i sticanje profita koji je bio garantovan izvozom. Takve pojave koristile su druge države, što potvrđuje činjenica da se posle afere "Krušik" izvoz naoružanja i vojne opreme u Bugarskoj višestruko povećao i da su oni izvezli konkretna sredstva u zemlje u koje su trebala da izvezu srpska preduzeća (Kotseva, Nikolov, 2023). Dakle, nije sve ni u zakonskim ni u političkim, često ni u bezbednosnim faktorima realizacije izvoza. Mnogo više je značajan trenutni položaj i stanje vojne industrije u Srbiji, ostvareni prihod i smišljeni napadi stranih konkurenata da zaustave ili privremeno onemoguće izvozne aranžmane. Uostalom, takvih situacija kroz istoriju bilo je mnogo.

Na osnovu iskustava iz sankcija, političkih uslovljavanja i nametanja pravila koja se primenjuju samo za određene zemlje, preduzeća vojne industrije u Srbiji oporavljaju se u infrastrukturnom i tehnološkom smislu, pa očekuju da dobijene zahteve za izvoz realizuju u najkraćem mogućem roku. Vreme u tim poslovima, pored političkih uslova, predstavlja bitan faktor, jer dugo čekanje na dobijanje izvozne dozvole dovodi u pitanje realizaciju poslova. Dugo čekanje na izvoznju dozvolu direktno je povezano sa mehanizmom odlučivanja i proverama koje su zakonski propisane. S jedne strane, država mora da se obezbedi u političkom i bezbednosnom smislu, a s druge, preduzeća moraju da ostvare neophodan profit za ulaganje u nove mašine, alate, pogone i proizvode.

Ono što se u kontekstu izvoza naoružanja i vojne opreme mora naglasiti jeste činjenica da su trgovci oružjem međusobni konkurenti. Oni se bore za poslove

jedni sa drugima, ali i sa državom, odnosno državnim firmama. Postoje zemlje u svetu koje ne posluju po eksplicitnim pravilima međunarodne trgovine naoružanjem. Kad se kaže "eksplicitna pravila", misli se pre svega na uverenje o krajnjem korisniku (end user certificate). Kada postoji uverenje o krajnjem korisniku, odnosno izvozna dozvola, tačno se zna gde će i kod koga završiti naše oružje – a nije tajna da ono često završava i u rukama terorista. To znači da zemlje u koje mi izvozimo ne poštuju izdato uverenje o krajnjem korisniku i redistribuiraju to oružje nekim grupama koje ga upotrebljavaju za nelegalne vojne aktivnosti.

Sadašnja pozicija Srbije u izvoznim poslovima u vezi sa naoružanjem i vojnom opremom opterećena je prvenstveno političkim razlozima. Najpre, stanje u južnoj pokrajini Kosovu i Metohiji, unutrašnja trvenja i nesuglasice između vlasti i opozicije, učešće međunarodnog faktora u podržavanju tzv. Kosova i kršenju principa povelje UN, te ratna situacija u Ukrajini nikako ne korespondiraju sa mogućnostima i efektivom kojom raspolažu preduzeća vojne industrije u Srbiji. U proizvodnji i na zalihama postoje konkurentna sredstva naoružanja i vojne opreme čiji kvalitet i cenovni faktor obezbeđuju da se mogu isporučiti svakom potencijalnom kupcu. U toku je realizacija ranije sklopljenih ugovora sa drugim zemljama, čak i sa SAD i drugim zemljama NATO. Rokovi isporuke, kvalitet i tradicija su najvažniji faktori u odluci da neka zemlja kupuje naoružanje i vojnu opremu, pa po tom pitanju srpska preduzeća imaju striktan stav i ponašaju se korektno. U trenutnim uslovima i političkim odnosima u svetu, preduzeća vojne industrije i ostali izvoznici iz Srbije opredeljeni su za izvoz na druge destinacije (zemlje). Uostalom, veliki poslovi sklapani su i ranije sa tzv. nesvrstanim zemljama, među kojima su poznati kupci iz Azije, Afrike i bivših sovjetskih republika.

Budući da se situacija na Kosovu i Metohiji usložnjava svakim danom i da preći eskalacijom sukoba i etničkim čišćenjem Srba na tim prostorima, najviše rukovodstvo zemlje donelo je odluku o popuni Vojske Srbije potrebnim sredstvima naoružanja i vojne opreme. Prema toj odluci, najveći deo proizvodnje usmerava se u jedinice Vojske i ona popunjava novim sistemima i sredstvima u cilju jačanja odbrambenih kapaciteta i mogućnosti. Godinama unazad preduzeća vojne industrije u Srbiji nisu proizvodila sredstva naoružanja za potrebe Vojske Srbije. Razlog je veoma jasan – nije bilo finansijskih mogućnosti da se izdvoji veći procenat u budžetu kojim bi se obezbedilo opremanje savremenim sistemima i sredstvima naoružanja. Posle skoro dvadeset godina, odlučeno je da se najveći deo proizvodnje usmeri u jedinice Vojske, a preostali deo ponudi za izvoz. Na taj način preduzeća će ostvariti garantovane poslove i određeni ekonomski boljitak, te obezbediti normalno funkcionisanje.

Imajući u vidu činjenicu da se izvoz naoružanja i vojne opreme iz Srbije u poslednjih deset godina stalno povećavao i dostizao cifre od nekoliko stotina

miliona dolara, ruska specijalna operacija u Ukrajini donekle je omela izvozne poslove i umanjila zaradu u poslednje dve godine. Međutim, preduzeća vojne industrije su opredeljena da proizvode, inoviraju, modernizuju i marketinški unapređuju izvozne aktivnosti i ostvaruju zavidene poslovne rezultate (Radić 2014; Smajilović, Radić, Radić, 2023).

Zaključak

Izvoz naoružanja i vojne opreme je ekonomski isplativa poslovna aktivnost i sve zemlje koje poseduju vojnu industriju opredeljene su za izvoz tih proizvoda. Budući da nema zemlje u svetu koja ne raspolaže oružanim snagama, potreba za određenim sredstvima naoružanja i vojne opreme neće prestati uprkos mnogim pacifističkim stavovima, mišljenjima ili tendencijama. Naoružanje i vojna oprema proizvodi se i proizvodiće se u količinama koje su uslovljene tražnjom na tržištu, a tražnja je promenljiva ekonomska kategorija u svakoj industriji, pa i vojnoj. Ona je, dakle, direktno proporcionalna trenutnoj političkoj i prvenstveno vojnoj situaciji u određenim regionima i zemljama.

Zemlje u sukobima pokušavaju da reše međusobne probleme isključivo primenom sile. Sukobi, po prirodi stvari, mogu biti kratkotrajni ili dugotrajni i u svakom slučaju za posledicu imaju velike ljudske gubitke, uništenje objekata, tehnike i velike materijalne štete. Zemlje koje se nalaze u neuralgičnim područjima sveta intenzivno se naoružavaju, ne pitajući za cenu. Bogate zemlje na Bliskom istoku ili u Aziji imaju sopstvene istraživačko-razvojne kapacitete i uz kooperaciju sa moćnim i tehnološki naprednim zemljama proizvode savremena sredstva naoružanja i vojne opreme za sopstvene potrebe.

Kada je u pitanju izvoz naoružanja i vojne opreme, mora se naglasiti da oduvek postoji konkurencija između proizvođača. Najpre je konkurencija bila takva da se izvozom sopstvenih proizvoda nije moglo parirati interesima i težnjama moćnih sila (SAD, Rusije, Velike Britanije, Nemačke ili Francuske). Naročito je to bilo prisutno u vreme Hladnog rata, kada je naoružavanje SAD i saveznika u NATO paktu bilo usmereno na smanjenje ruske prednosti na kopnu, moru i u vazduhu. Konkurencija između zemalja izvoznica se zaoštravala, ali su tehničke i vojne karakteristike sistema i sredstava bile odlučujuće pri nabavci. Ta konkurencija je često neloyalna i štetna po jednu od strana, jer interesi jednih nadjačavaju interese drugih, ne birajući sredstva.

Mesto Srbije i srpskih proizvođača iz sfere vojne industrije omeđeno je malim dijapazonom proizvoda i relativno malim kapacitetima u odnosu na tzv. velike proizvođače i izvoznike. U vezi s tim, srpska preduzeća nalaze svoje mesto na tržištima visokim kvalitetom i cenovnim rangom. Ispunjavanjem i doslednom realizacijom sklopljenih ugovora, preduzeća srpske vojne industrije obezbeđuju plasman naoružanja i vojne opreme koje proizvedu. Na tom putu imaju mnogo barijera, podmetanja i nefer ponašanja potencijalnih konkurenata. U okruženju,

najveći konkurent je Bugarska. Određeni potencijal za nadmetanje ima i vojna industrija Bosne i Hercegovine, koja raspolaže dosta ujednačenim proizvodnim programom i može donekle da konkuriše preduzećima vojne industrije u Srbiji.

Kao zaključak može se reći da su politički odnosi između zemalja odlučujući u poslovima izvoza naoružanja i vojne opreme. Ukoliko postoji određena politička saglasnost između partnera, preduzeća vojne industrije iz Srbije neće imati problema u plasmanu svojih proizvoda. To govori da održavanje dobrih i fer odnosa sa kupcima iz SAD i zapadnih zemalja obezbeđuje srpskim preduzećima koliko-toliko slobodan prolaz na zahtevno tržište naoružanja i vojne opreme. Eventualna kooperacija sa snažnijih kompanijama i zemljama svakako bi doprinela poboljšanju statusa preduzeća vojne industrije.

Međutim, u poslednje vreme prisutna su različita uslovljavanja i pokušaji nametanja obavezujućih stavova oko, npr. uvođenja sankcija Rusiji, priključenja NATO-u ili prihvatanja spoljne politike Evropske unije u procesu pristupanja naše zemlje. Bez obzira koliko se činilo da to nema određene reperkusije na poslovanje i opstanak preduzeća vojne industrije u Srbiji, sve to zajedno uveliko utiče na njihov tretman na stranim tržištima. Odupiranje Srbije pritiscima tretira se kao neprihvatanje stavova SAD i saveznika u NATO i EU, što pogoršava mogućnost plasmana srpskih proizvoda naoružanja i vojne opreme.

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INFLUENCE OF POLITICAL RELATIONS ON FOREIGN TRADE TRADE OF SPECIAL PURPOSE PRODUCTS

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Abstract

International trade is the main driving force of economic development. It appears as a sphere of international economic relations and is formed from trade in goods and services from all countries of the world. However, international trade is most influenced by political relations in the world. The model of behavior on the political scene in the last thirty years is based on setting unacceptable conditions in the political, economic and military segments, which deviate from defined and generally accepted international relations, neglect of interests and gross interference in the internal affairs of small and underdeveloped countries. In the context of the above, the export of special purpose products (weapons and military equipment) has become a problematic economic activity. On the one hand, Western countries, led by the United States of America (USA), are supplying weapons and military equipment to Ukraine as "help in curbing Russian aggression." On the other hand, countries like Serbia are in an unenviable situation because they have something to export, but it is impossible due to the happenings on the political scene. Since Russia and Ukraine did not recognize the independence of Kosovo, Serbia cannot export weapons and military equipment to those countries, so it is forced to turn to other markets and customers.

Key words: *political relations, great powers, conflicts, foreign trade, military industry*

Introduction

Foreign trade in special-purpose products (weapons and military equipment) depends on many factors, primarily the existence of surpluses of certain assets, the contractual relationship between the seller and the buyer, the analysis of political and security aspects of the possible realization of the trade, and the issuance of

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permits by the competent authorities (institutions). Surpluses of weapons and military equipment are a necessary but not sufficient condition for exports to be realized. Namely, it is not enough for there to be a certain amount of weapons and military equipment in stocks (stocks). These assets must meet strict quality requirements, both in terms of functionality and appearance, protection, storage under special conditions, age, price, etc. (Radić, Radić, 2018, Radić, Radić, 2018).

The export of weapons and military equipment is greatly influenced by political relations in the world, as well as by the mutual relations of individual countries. In light of the crisis and conflict in Ukraine, political relations have deteriorated, especially towards Russia (Blum, 2019; Thurner, Schmid, Kauermann, 2019; Radić, Radić, Ravić, 2022). Second, the US and NATO allies have imposed a series of sanctions on the state, institutions and individuals in Russia, thus preventing any economic or military cooperation. For two years, this sequence of events has affected not only countries that are not involved in the conflicts and have not imposed sanctions on Russia, but also those that are threatened with bilateral sanctions if they do not comply with the US and NATO demands. The mutual conditionality of Russia's special operation in Ukraine and developments on the economic front, primarily in the field of energy, grain and other agricultural products, has led to an enormous increase in oil and gas prices, has prevented supplies through previously built gas corridors, the sale of grain and has increased the prospect of hunger for hundreds of millions of people around the world (Hendix, 2023).

With the beginning of Russia's special operation in Ukraine, the primary demand that the US imposed on other countries was the interruption of oil and gas supplies from Russia and the transition to alternative supply corridors under US jurisdiction. Another aspect of the deterioration of political relations is related to the military assistance of NATO member states to the Ukrainian armed forces. Namely, in addition to the introduction of sanctions against Russia, NATO member states have pledged to assist Ukraine with deliveries of modern weapons, which in recent months include assets that have long been banned from export to other countries. Deliveries of weapons and military equipment are allowed only to NATO member states, as well as their partners in the world – Australia, Japan, South Korea, etc.

In the context of the conflict between Russia and Ukraine, the export of weapons and military equipment from Serbia is burdened by political reasons (Radić, Radić, Ravić, 2022). Russia and Ukraine have not recognized the so-called Kosovo, so the export of weapons and military equipment to any party to the conflict would be counterproductive. Therefore, Serbian companies and exporters are in a specific situation where they must not choose either side in the conflict, which prevents the realization of exports and the generation of income. Therefore,

the specifics of the war situation define and limit the behavior of participants in export activities.

Research objective and methodology used

The research objective is to point out the interdependence of political and military relations in the world and the possibility of foreign trade in special-purpose products. Since political relations are reflected in almost every branch of human activity, the research will identify a whole series of barriers facing exporters of the above products. Special emphasis is placed on the position of domestic companies in the sphere of trade in special-purpose products.

In accordance with the defined research objective, the paper will apply the methods of analysis and synthesis, induction and deduction, and comparison. Analysis breaks down the subject of research into its constituent parts, i.e. into factors of structure, function, connections and relationships in a certain space and time. Synthesis understands complex wholes through their individual and specific parts. Induction is used to derive a general judgment from several specific, individual factors of a subject, and deduction is used to derive specific and individual knowledge about the subject of research. Each research is linked to comparison, i.e. comparison, when the unknown is compared with the known, the new with the old, and new knowledge is formed about an unknown phenomenon, object, process, relationship, etc.

Export of special purpose product

Despite the fact that at the turn of the millennium the military-political situation in the world has changed significantly, the policy of force has acquired new content and significantly larger dimensions, and a new, offensive spirit has been introduced into existing strategies, so force is still the decisive factor for the realization of political goals. The strained mutual relations between states and peoples are sought to be resolved by force, which is why modernly equipped armies have been created in large and small states, in rich and poor countries, and their supply with weapons and military equipment is one of the key issues of internal and external security and is directly related to economic development. The armament and equipment of modern armies consist of the most complex combat systems and means of great firepower and precision, automated in their mode of action, reliable and high-quality in terms of manufacturing technology and, above all, expensive. In peacetime, technological superiority and weapon performance are a deterrent factor, and in conflicts they contribute to improving combat efficiency and reducing losses (Radić, 2014).

Without going into a historical retrospective, the organization of the modern world clearly indicates that all countries can be classified into three groups

according to their strategy and the degree of socio-political and economic development:

- the first group consists of Western countries, Russia, Japan, South Korea, China and India,
- the second group consists of countries that are forced to rely on foreign aid in their development policy (some countries in South America, Asia and North Africa, countries in Eastern Europe that belonged to the socialist bloc),
- the third group consists of underdeveloped countries and some developing countries (Stamatović, 2001).

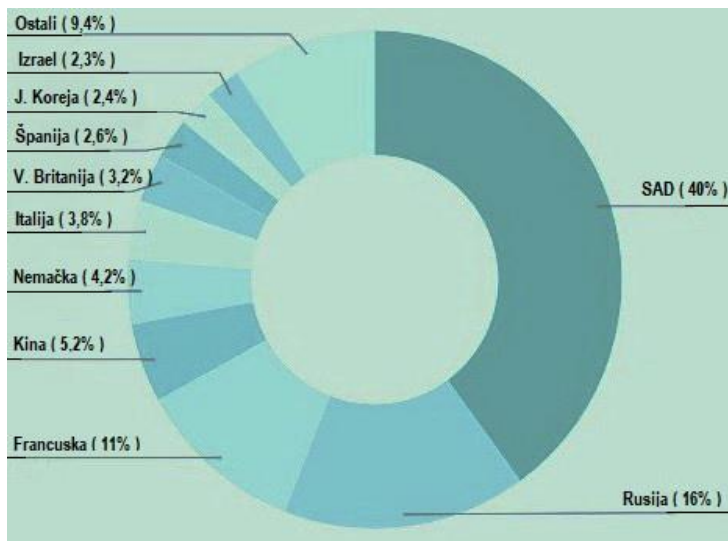
The countries in the first group have strong and modernly equipped armed forces, adapted to the military doctrine that is declarative in some countries of this group, and truly defensive in some. In the countries of the second group, two different military policies, two defense strategies can be observed. One is represented by countries that ensure complete political autonomy and independence with their defense concept, despite the necessity of relying on foreign aid in economic development. The second group is represented by countries that have adapted or subordinated their defense concept to the military strategy of the country on which they rely most in their own economic development. The countries of the third group, as a rule, do not have a consistent defense strategy, but adapt it to current internal relations and possibilities, i.e. the conditions for the materialization of military policy (Stamatović, 2001).

The aforementioned conditional classification made sense for the conditions of bipolarity in global world relations and at a time when human civilization found itself in a new state in which it is trying to impose a "new world order", in which one power (state) will govern the rules of the game. The answer to the question of how successful the project of building a "new world order" will be requires comprehensive considerations. However, what can be asserted with sufficient certainty is that in the near and distant future, human civilization will not be left without weapons, military forces will not disappear and there will be no politically and economically independent states without their own armed forces. Unfortunately, the world and the relationships in it are still so imperfect that pacifism, basically an extremely human and civilizational urge, retains its metaphysical essence.

The export of arms and military equipment in the world sets new records every year in terms of realized profits from sales. For decades, the USA, Russia, France, Great Britain and Germany have been present in this race, and in recent years China has joined them (Tian et al., 2020; SIPRI, 2022). International agencies and institutions that study conflicts, the arms race or monitor the export-import of arms and military equipment, publish data on the achieved levels of exports or imports every year. According to data from the Stockholm International Peace

Research Institute (SIPRI), in the period 2018-2022. the participation of the top ten countries in the world export of arms and military equipment is shown in Figure 1.

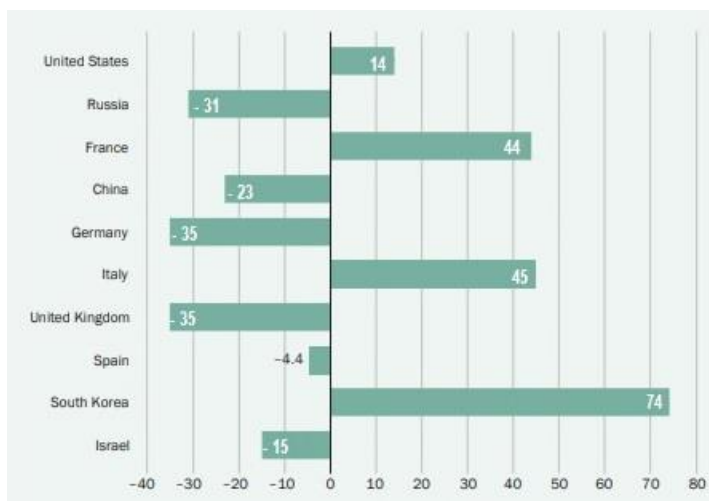
Figure 1. Global share of major arms exports by top 10 exporters, 2018–22



Source: SIPRI Arms Transfers Database, 2023.

The volume of international transfers of major weapons in the period 2018–2022 was 5.1% lower than in the period 2013–2017 and 4.8% higher than in 2008–2012 (Figure 2).

Figure 2. Changes in the volume of arms exports



Source: SIPRI Arms Transfer Database, 2023.

The five largest exporters in the period 2018–2022 (USA, Russia, France, China and Germany) together accounted for 76% of global arms exports. The five largest importers in the period 2018–2022 (India, Saudi Arabia, Qatar, Australia and China) together accounted for 36% of global arms imports (Tulyakova, Dengov, Gregova, 2021; SIPRI, 2023; Global Economy 2023; Gould, Pollitt, Wezeman, 2023; Kong, 2023; Hedlund, 2023).

The military operation in Ukraine has caused a significant increase in demand for weapons in Europe, which will most likely lead to an increase in arms imports by European states (Wezeman, 2023). Ukraine was a negligible arms importer until 2022, but since the start of the war it has quickly become the third largest arms destination in the world (behind Qatar and India). According to SIPRI, Ukraine alone accounts for 31% of arms trade in Europe and 8% of global deliveries. Ukraine's imports in 2022, including donations, increased more than 60-fold. Deliveries to Ukraine were mainly in arms from stockpiles. The most significant of these are artillery pieces from the USA, armored vehicles from Poland, anti-tank missiles from the UK, as well as several anti-aircraft systems from Germany, the UK and France (SIPRI, 2023; Hartung, 2022)

Outside Europe, arms imports fell by 40% in Africa, while in the Americas they fell by a total of 21%, in the Middle East by 8.8% and throughout Asia by 7.5%, and in East Asia there was an increase due to geopolitical tensions between Taiwan and China and South Korea and North Korea. In this region, the highest import growth rate, 171%, was recorded by Japan, followed by South Korea with 61%. The main supplier of these countries was the USA (van Lieshout, Beeres, 2022). Based on the data, it can be concluded that in many countries the equipping of armed forces with modern weapons and military equipment has accelerated with the start of Russia's special military operation in Ukraine. This is especially evident in countries involved in known theaters of war and other conflicts of greater or lesser intensity (Syria, Iraq, Iran, Yemen, South Korea, North Korea, even Japan). For example, Romania, although a member of the NATO pact, has been intensively arming itself in the last two years. Currently, Bulgaria, Israel and the USA are its primary suppliers of weapons, including ammunition, aircraft and ships. In 2022, Romania allocated around 7.3 billion euros to its defence budget, which increased by 2.5% of GDP in 2023 (Ichim, 2022; Bromley, 2022). The situation is similar with other NATO member states (e.g. Croatia) that allocate significant amounts for the modernisation of their armed forces. Even Sweden and Finland, which have decided to join NATO, are starting to modernise and equip their armed forces with new systems. However, a general observation for all countries in terms of armaments is that they equip themselves with available and affordable weapons.

The above examples speak of the state of relations between buyer countries and seller countries. Buyer countries can acquire weapons from anyone if they have

the financial means and if the seller country is willing to supply them with the requested weapons. The US and its Western allies, including Israel, are reluctant to deliver the most modern weapons and military equipment systems and means, under the pretext that Russian and Chinese experts could get their hands on them (Savić et al., 2021).

Another even more significant feature of arms and military equipment exports concerns the US military supremacy and its logistical "support" to critical countries and their infrastructure (IISS, 2023). Although thousands of kilometers away from the US, Ukraine has been placed in the logistics chain of the US and other NATO countries in the current conflict. This means that the delivery of weapons and military equipment, expert and other assistance to Ukraine will last as long as the special operation. Furthermore, according to information in the Western media, President Biden promised President Zelensky assistance to Ukraine through the production of modern weapons and systems (Sharp, 2023). In the Asian region, the US supports Taiwan, although China considers it an integral part of its territory. The US heavily equips Taiwan's armed forces, patronizes South Korea, and represents the last line of defense against a possible attack by North Korea.

In the current constellation of relations and forces, Russia is temporarily unable to deliver its weapons to other countries, traditional buyers. This primarily applies to the region of Asia, Africa and South America. On the other hand, China, which is in no way involved in the conflict in Ukraine, is expanding the scope of its cooperation with potential buyers of its weapons – Africa, India, the countries of the former Soviet Union, Vietnam, etc. (China Power Team, 2021). Therefore, the export spiral will once again benefit the US the most, and less the European members of NATO. The main question is how much longer Europe will hold out.

After Washington decided to sacrifice support for Ukraine in order to prevent the blockade of its own government, European leaders know that they will face pressure to, at least temporarily, take a leading role in supporting Kiev. The weakness of the military industry is a serious obstacle, and the diplomatic and political side of the issue will also become a problem. Zelensky promises that Ukraine will continue to fight "until victory" and that his willingness to confront Russia has no expiration date.

But the EU's problems are such that the more verbally committed it is to helping Ukraine, the less it is able to actually provide it with military and economic support. One example is Slovakia. Slovaks sent a clear message in the elections about the limits of European support for Ukraine: they voted for former Prime Minister Fico, who vigorously campaigned against anti-Russian sanctions and promised that Bratislava would not send another bullet to Kiev. Poland has not been on the same wavelength with Ukraine for a long time, partly because of refugees and partly because of grain, so the question is whether it will return to its

old course towards Ukraine after the parliamentary elections. Warsaw also threatened that it would no longer be able to send any more weapons across the border, but under pressure from the US it softened its stance a little and will send some more old weapons. Hungarian Prime Minister Orbán tightened the screws so much that Ukraine had to remove the Hungarian OTP Bank from the list of war sponsors (because it cooperates with Russia) in order for Budapest to lift its veto on the EU's €500 million military aid package to Kiev (Pollet, 2023).

Choosing between their own individual survival and sacrificing everything for the sake of Ukraine, European members are now being tested on how they will choose due to economic stagnation, high inflation and budget constraints. The EU promised to provide Ukraine with one million shells by spring next year. Half a year has already passed, and the union has delivered only a quarter of what was promised, and that from its own reserves. As for production, experts say that the European military industry can currently produce only five to ten percent of the artillery shells needed by Ukraine (Ataman, Sebastian, 2023).

It should not be forgotten that the US provides resolute political support for Kiev's interests and it is precisely this support that has pushed the EU to pay a large financial burden. And all because of the fear that Washington will reject its obligations to NATO. Was it really in the EU's interest for NATO to come to Moscow's doorstep – is a question that is now being asked more and more frequently in European capitals.

Export of special purpose products from Serbia

The decision of organizations and managers to engage in foreign trade in weapons and military equipment is accompanied by many problems, barriers, prohibitions, imposition of the will of the stronger over the weaker, crowding out of the market, and even threats.

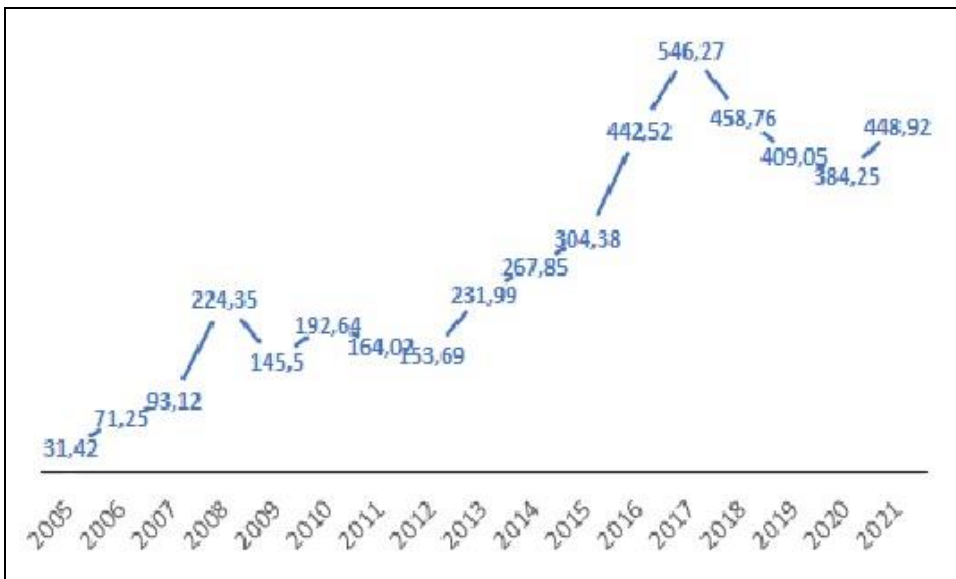
In a situation where the military industry of a country has the potential to export weapons and military equipment to a foreign market, this is most often opposed by politically, economically, and militarily stronger countries, because this reduces the market for their companies. The second reason is the procurement of weapons and military equipment at lower prices, because restrictive procurement or purchase conditions can be imposed. This puts potential exporting countries in front of a *fait accompli* – they will either accept the "rules of the game" or they will give up. The third reason, at least in the case of the Russia-Ukraine conflict, is the consensus on the US position that the conflict must continue, and this position is binding on other NATO and EU members.

Serbia has not imposed sanctions on Russia nor does it support the military operations in Ukraine. So, it was left alone on one side, because on the other side are all NATO and EU countries, along with Japan, South Korea, Australia, etc. Serbia is in a particularly difficult situation because Russia, as well as Ukraine,

have not recognized the independence of Kosovo and Metohija. In this context, the export of weapons and military equipment from Serbia to any party in the conflict would be considered a violation of mutual relations with Russia and Ukraine.

After decades of stagnation, inability to place orders, sanctions, war events in the former SFRY, NATO aggression, military industry companies in Serbia began to return to traditional markets. This includes not only small or developing countries, but also the placement of products in the USA, NATO countries, countries of the Asian and African continents. The volume of exports increased from year to year, so that in terms of quality, tradition, delivery times and price factor, export items were competitive and brought in a high inflow of foreign exchange (Figure 3). The stabilization of business operations, the technological, organizational and financial consolidation measures taken have contributed to the repositioning of military industry companies in old and new markets (Radić, Radić, 2018; Smajilović, Radić, Radić, 2023).

Figure 3. Exports of arms and military equipment from Serbia (millions of USD)



Source: Ministry of Internal and Foreign Trade, 2023.

The export of arms and military equipment from Serbia to other countries is regulated by a law that is almost fully compatible with the European legal framework, and therefore includes a methodology and procedures approved at the state level and that meet the specific requirements of some countries with which Serbia cooperates (primarily the USA). The legal framework prescribes who can export arms and military equipment, what requirements an organization or person must meet in order to be registered in the exporters' register, what is the procedure

for registering and submitting an application for an export license, what security procedures must be carried out and, only after all that, obtaining a license for the export of arms from Serbia.

The legal framework defined that the Ministry of Internal and Foreign Trade (formerly the Ministry of Trade, Tourism and Telecommunications) and the Ministry of Defense are key for entering the register, submitting applications and obtaining an export license. In addition to them, the Ministry of Internal Affairs, the Ministry of Foreign Affairs and the Security and Intelligence Agency are also involved in the decision-making process and obtaining (or rejecting) applications. Since Serbian companies have experience with sanctions, and are under constant surveillance by foreign intelligence and other agencies, before any request, the companies conduct the necessary internal checks and analyses of the possible effects of exports (Savić et al., 2023). Most importantly, all military industry companies and other registered exporters must adhere to the security, and later political interests of Serbia. If it appears that the export will be controversial for any party, even for a traditional and long-standing buyer, it is comprehensively considered at all levels and if it is determined that it is security and politically harmful, the request is rejected and the export is not approved. This happens in cases of exports to countries that are under unilateral or bilateral sanctions by certain countries. For example, certain countries are under unilateral sanctions by the US and the export of weapons to those countries is considered by the US to be a violation of certain rules, regulations or resolutions. Other countries are under sanctions by the United Nations (UN) and this situation applies until the sanctions are "lifted", i.e. until a certain country is removed from the list of countries to which the trade in arms and military equipment is prohibited (Hamilton, 2020).

Serbia has repeatedly been the subject of discussions in international forums when it was claimed that it exported weapons and military equipment to countries that sponsor terrorism, violate human rights and do not adhere to international agreements regarding the trade in weapons and military equipment. These were often fabricated accusations, because in the end they were proven to be untrue. However, the economic effects of such accusations were to prevent the export of our companies and to gain profits that were guaranteed by exports. Such phenomena were used by other countries, as confirmed by the fact that after the "Krušik" affair, the export of weapons and military equipment in Bulgaria increased many times over and that they exported specific assets to countries to which Serbian companies were supposed to export (Kotseva, Nikolov, 2023). Therefore, not everything is in the legal or political, often not even in the security factors of the implementation of exports. Much more important is the current position and condition of the military industry in Serbia, the income generated and deliberate attacks by foreign competitors to stop or temporarily disable export arrangements. After all, there have been many such situations throughout history.

Based on the experience of sanctions, political conditioning and the imposition of rules that apply only to certain countries, military industry companies in Serbia are recovering in terms of infrastructure and technology, and they expect to implement the received export requests as soon as possible. Time in these deals, in addition to political conditions, is an important factor, because a long wait for an export license calls into question the implementation of the deals. A long wait for an export license is directly related to the decision-making mechanism and checks that are prescribed by law. On the one hand, the state must ensure itself in terms of political and security, and on the other hand, companies must make the necessary profit to invest in new machines, tools, plants and products.

What must be emphasized in the context of the export of armaments and military equipment is the fact that arms dealers are competitors. They fight for business with each other, but also with the state, or state-owned companies. There are countries in the world that do not operate according to the explicit rules of the international arms trade. When we say "explicit rules", we primarily mean the end user certificate. When there is an end user certificate, or export license, we know exactly where and with whom our weapons will end up - and it is no secret that they often end up in the hands of terrorists. This means that the countries to which we export do not respect the issued end user certificate and redistribute those weapons to some groups that use them for illegal military activities.

Serbia's current position in export deals related to weapons and military equipment is burdened primarily by political reasons. First of all, the situation in the southern province of Kosovo and Metohija, internal frictions and disagreements between the government and the opposition, the participation of international factors in supporting the so-called Kosovo and the violation of the principles of the UN Charter, and the war situation in Ukraine do not correspond at all to the capabilities and effectiveness at the disposal of military industry companies in Serbia. In production and in stock, there are competitive means of weapons and military equipment whose quality and price factor ensure that they can be delivered to any potential buyer. The implementation of previously concluded contracts with other countries is underway, even with the USA and other NATO countries. Delivery times, quality and tradition are the most important factors in the decision of a country to purchase weapons and military equipment, so Serbian companies have a strict stance on this issue and behave correctly. In the current conditions and political relations in the world, military industry companies and other exporters from Serbia are determined to export to other destinations (countries). After all, large deals have been concluded before with the so-called. non-aligned countries, among which are well-known buyers from Asia, Africa and the former Soviet republics.

Since the situation in Kosovo and Metohija is becoming more complex every day and threatens to escalate the conflict and ethnic cleansing of Serbs in those areas,

the country's top leadership has made a decision to replenish the Serbian Army with the necessary weapons and military equipment. According to this decision, the largest part of production is directed to the Army units and it is replenished with new systems and equipment in order to strengthen defense capacities and capabilities. For years, military industry companies in Serbia have not produced weapons for the needs of the Serbian Army. The reason is very clear - there was no financial possibility to allocate a larger percentage in the budget to ensure equipment with modern systems and weapons. After almost twenty years, it was decided to direct the largest part of production to the Army units, and offer the remaining part for export. In this way, the companies will achieve guaranteed jobs and a certain economic improvement, and ensure normal functioning.

Considering the fact that the export of arms and military equipment from Serbia has been constantly increasing in the last ten years and has reached several hundred million dollars, the Russian special operation in Ukraine has somewhat disrupted export business and reduced profits in the last two years. However, military industry companies are committed to producing, innovating, modernizing and marketing export activities and achieving enviable business results (Radić 2014; Smajilović, Radić, Radić, 2023).

Conclusion

The export of weapons and military equipment is an economically profitable business activity and all countries that have a military industry are committed to exporting these products. Since there is no country in the world that does not have armed forces, the need for certain weapons and military equipment will not cease despite many pacifist attitudes, opinions or tendencies. Weapons and military equipment are produced and will be produced in quantities that are determined by market demand, and demand is a variable economic category in every industry, including military. It is, therefore, directly proportional to the current political and primarily military situation in certain regions and countries.

Countries in conflict try to solve their mutual problems exclusively by using force. Conflicts, by their nature, can be short-term or long-term and in any case result in large human losses, destruction of facilities, equipment and major material damage. Countries located in neuralgic areas of the world are intensively arming themselves, without asking the price. Rich countries in the Middle East or Asia have their own research and development capacities and, in cooperation with powerful and technologically advanced countries, produce modern means of armament and military equipment for their own needs.

When it comes to the export of armaments and military equipment, it must be emphasized that there has always been competition between manufacturers. First of all, the competition was such that by exporting one's own products it was not possible to compete with the interests and aspirations of powerful powers (the

USA, Russia, Great Britain, Germany or France). This was especially present during the Cold War, when the armament of the USA and its allies in the NATO pact was aimed at reducing Russian advantages on land, sea and in the air. Competition between exporting countries intensified, but the technical and military characteristics of the systems and equipment were decisive in the procurement. This competition is often unfair and harmful to one of the parties, because the interests of one side override the interests of the other, without choosing the means.

The place of Serbia and Serbian manufacturers in the sphere of military industry is limited by a small range of products and relatively small capacities in comparison to the so-called large manufacturers and exporters. In this regard, Serbian companies find their place in the markets with high quality and price range. By fulfilling and consistently implementing the concluded contracts, Serbian military industry companies ensure the placement of the weapons and military equipment they produce. On this path, they have many barriers, subterfuge and unfair behavior of potential competitors. In the surrounding area, the biggest competitor is Bulgaria. The military industry of Bosnia and Herzegovina also has a certain potential for competition, as it has a fairly uniform production program and can to some extent compete with military industry companies in Serbia.

As a conclusion, it can be said that political relations between countries are decisive in the export of weapons and military equipment. If there is a certain political agreement between partners, military industry companies from Serbia will not have problems in the placement of their products. This suggests that maintaining good and fair relations with buyers from the USA and Western countries provides Serbian companies with a somewhat free passage to the demanding market of weapons and military equipment. Possible cooperation with stronger companies and countries would certainly contribute to improving the status of military industry companies. However, recently there have been various conditions and attempts to impose binding positions regarding, for example, the introduction of sanctions on Russia, joining NATO or accepting the foreign policy of the European Union in the process of accession of our country. No matter how much it seemed that this had no certain repercussions on the business and survival of military industry companies in Serbia, all this together greatly affects their treatment in foreign markets. Serbia's resistance to pressure is treated as non-acceptance of the positions of the USA and its allies in NATO and the EU, which worsens the possibility of placing Serbian weapons and military equipment products.

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ACCOUNTING ASPECT OF INCOME IN FINANCIAL BUSINESS

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Abstract

Income is the gross inflow of economic benefits during the accounting period, which results from the regular activities of a business entity and which results in an increase in its capital, except for increases related to the contributions of capital owners. There are different names for certain types of income: income from sales, commissions, interest, dividends, royalties. The standard is applied for the accounting inclusion of income arising from the following transactions and events: sale of goods, provision of services and use of assets of the business entity by others, which generate income in the form of interest, royalties and dividends. The framework and almost all IAS and IFRS refer, in part, to revenues, in terms of their: definition, origin and structure: accounting coverage. Therefore, the question can be raised whether IAS 18 is not a repetition of what other accounting standards and the Framework contain about income.

Keywords: *accounting treatment of income, financial operations*

Introduction

Generally speaking, revenues are recognized when: it is probable that future economic benefits will flow to the business entity and when their amount can be reliably determined. Revenues are valued at the gross fair value of the received

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compensation or receivables, less trade discounts and rebates. IAS 18 is consistent with regard to the definition of income and the principle of the occurrence of a business event, as a condition for the recognition of income, and it does not offer any new knowledge in relation to other standards and the Framework. The standard starts from the definition, from the Framework, that income is an increase in economic benefits during the accounting period in the form of an inflow or increase in assets or a decrease in liabilities, which result in an increase in capital, not counting the increase based on the payments of participants in the capital.

This standard deals with income "inside", ie. has in mind that income is generated in various ways, i.e. that business events are different and that their origin is not clear-cut and therefore neither are incomes.

IAS 18 deals not only with whether income can be recognized but also when it can be recognized, i.e. whether the event actually occurred and how its occurrence can be expressed through income. For example, if the installation of the equipment has not been carried out, and it is an integral part of the transaction or business event (according to IAS 18), there are no conditions for recognizing revenue even though the equipment has been delivered (ASB, 2003). This is not a deviation from the principle of the occurrence of a business event, but only its complete identification in the function of the established recognition of income.

The aim of the paper is to explain the changes in other standards for the application of this standard in relation to: what can be recognized as income from certain business events or economic transactions; when income can be recognized and accounted for. The standard for revenue recognition is based on the criteria of the Framework, with the fact that it identifies the circumstances in which those criteria will be met, in order for the revenue to be recognized.

This standard refers to revenues generated from: sales of goods; performance of services; interest, royalties and dividends for funds provided for use by other persons. Goods are understood to mean: products produced by a legal entity for sale; goods purchased for resale; land and other real estate held for resale. The provision of services under one contract may last for several accounting periods (Camfferman & Zeff, 2015). If these services are connected within the construction contract, such as engineering and design services, that income is not processed within this standard, but is calculated in accordance with IAS 11. Income based on assets given for use to another entity are: interest – compensation for the use of cash, or cash equivalents, or for amounts owed to a legal entity; royalties for the use of long-term assets of a legal entity (patents, trademarks, copyrights and computer software); dividends from shares in the capital of legal entities or banks, except for dividends from affiliated legal entities.

Valuation and recognition of income from the sale of goods

The standard uses the concept of gross income, which means the full amount of income without offsetting or reporting in net amounts, but not the parts that refer to third parties, such as value added tax, etc.

Revenue is measured at the fair value of the consideration received or consideration claimed. The amount of income based on a business transaction, such as: the sale of goods and the performed service, is determined by an agreement between the seller and the buyer, that is, the user of the service. This agreed amount is expressed in the nominal amount of the received compensation or claim, without any trade discounts and rebates agreed upon during the purchase and sale, and generally corresponds to the fair value of the received compensation or claim (Christensen & Nikolaev, 2017). This is in accordance with the stated request.

Deviations from fair value are possible if the contracted nominal fee is paid on a delayed basis, without interest or with interest that does not compensate for changes in the value of money over time. In that case, the fair value of the compensation may be lower than the nominally contracted amount that is claimed. For example, if the payment is made after one year in the agreed nominal amount of, for example, 100,000 dinars, then the fair value of the compensation for the delivered goods is less than the agreed price, approximately by the amount of one year's interest included in some placement that after one year provides together with a capital inflow of 100,000 dinars. When contracting a deferred payment based on a business and financial transaction, the fair value is determined at the level of the net present value. It is obtained by discounting all future receipts using an interest rate, which can be determined as the interest rate that is most common for a similar instrument of an issuer with similar creditworthiness, or as an interest rate that discounts the nominal amount of the instrument to the current cash price of selling goods or services (IASB, 2018).

The fair value of the sold goods determined in this way is recognized in the income of the accounting period when the goods are sold. The difference is recognized as interest income in the accounting periods in which the collection of deferred installments is due.

When goods or services are exchanged for other goods or services, then the income is measured according to the fair value of the goods or services received. If the fair value of the goods or services received cannot be reliably determined, the income is determined according to the fair value of the goods or services sold (Zeff, 2018).

If the same or similar goods or services are exchanged in terms of nature and value, this exchange is not considered to generate income. An example of such an exchange is when legal entity "A" from Belgrade and legal entity "B" from Kruševac exchange the same type of goods in order to complete the assortment of goods in the stores of legal entity "A" in Kruševac and the stores of legal entity "B" in Belgrade.

The basic issue is identifying the transaction, i.e. when income can be recognised, which is what this standard insists on, based on the large differences in the realization of income by various legal entities and various ways of carrying out the realization of a job (Amacha & Dastane, 2017).

The income per transaction was realized as a whole when the process of delivering the goods was completed. In certain circumstances, it is necessary to apply recognition criteria to the components of a transaction (Savić & Bonić, 2022). The transaction may include the delivery of goods and assembly or service obligations. The delivery of the goods is then one component of the transaction. Assembly is another. Servicing is the third component of a transaction. The meaning of the requirements of the standard is to identify the part of the income that refers to, in this case, the second and third components and to make that part of the income according to the execution of those components of the transaction.

Example:

The product, i.e. the equipment, was delivered with the obligation of installation and servicing within a warranty period of 12 months from the day of installation. The total value of the transaction is 630,000 dinars. VAT of 18% is calculated on it. The customer has confirmed receipt of the equipment and the invoice.

In accordance with the requirement of IAS 18:

- the invoice value of the machine of 500,000 dinars is paid on the day of delivery;
- the value of the assembly service of 50,000 dinars is earned on the day of the completed assembly;
- the service value of 80,000 dinars is paid according to the contract, for example, quarterly or after the warranty period expires, regardless of whether there was an expected volume of servicing.

Posting:

Ord. Num.	Account		Description	Amount	
	Debit	Credit		Debit	Credit
1	2	3	4	5	6
1	202		Customers in the country	743.400	

		612	Income from the sale of products and services on the domestic market		500.000
		491	Calculated revenues of the future period - for service revenues		80.000
		495	Deferred income and donations received - for assembly income		50.000
		470	Obligations for value added tax on invoices issued at the general rate (except advances received) – for the delivered equipment		113.400
2	491		Calculated revenues of the future period - for service revenues	80.000	
	495		Deferred income and donations received - for assembly income	50.000	
		612	Income from the sale of products and services on the domestic market for equipment assembly and service		130.000

Production can be long-term (for example, building a ship or an industrial facility) and extend over several accounting periods. These differences are differences in the assessment of the occurrence of the event, which is a condition for the recognition of income. Income is created and it does not have to be disputed whether it exists, but it is a matter of determining the moment when it can be determined and recognized.

Sale of goods - Income from the sale of goods should be recognized (paragraph 14) if all the following conditions are met (Dutta et al., 2020):

- when the legal entity has transferred to the buyer significant risks and benefits from the ownership of the goods;
- when the legal entity does not retain direct participation in the management resulting from ownership, nor does it retain control over the goods;
- when the amount of income can be reliably measured;
- when it is likely that the economic benefits from the transaction will flow to the legal entity;
- when the costs that have already been incurred or will be incurred in connection with the transaction can be reliably measured.

Fulfillment of the first condition depends on the transaction. This is realized immediately in the sale of goods, i.e. in retail sales - when the sold goods are charged immediately (Savić et al., 2024). There are also such transactions in which, due to the nature of the object of sale or delivery, risks based on ownership are necessarily retained. That transaction cannot be considered as a basis for revenue recognition.

Examples of such situations are (Hindasah & Nuryakin, 2020):

- when a legal entity has undertaken an obligation for possibly unsatisfactory performance, which is not covered by a guarantee;
- when the collection based on the sale is conditional on the income that the buyer should realize from the sale of his goods;
- when the subject of the contract is the installation of the sold equipment, and this obligation has not yet been fulfilled;
- when the buyer has a contractual right to cancel the purchase of goods, which is why the seller assumes such a possibility.

There are also situations when retaining control of the goods sold is not a limitation for revenue recognition. If it is agreed that the seller retains ownership of the goods in order to ensure their payment, and that all other rights and risks are transferred to the buyer, in that case it is a sale transaction and there are conditions for revenue recognition (paragraph 17). Revenue may also be recognized if, for example, it is probable that part of the goods will be returned, if the seller can reliably estimate future returns and recognize a liability for returns based on past experience and other factors (IAS 37).

Until there is a sufficient probability that economic benefits will flow to the legal entity based on the transaction (which is a key criterion for revenue recognition), revenue recognition is deferred. For example, the collection of exported goods may be uncertain, due to measures prohibiting the transfer of funds from the authorities of a foreign country, while all other conditions for the recognition of income are met. Then there is no probability of an inflow of economic benefit to the legal entity based on that sale. When the uncertainty is removed, income can be recognized (paragraph 18). A distinction should be made between this uncertainty and the uncertainty of collection of already recognized income. In the second case, there was a condition for recognition of income at the moment of delivery of the goods. Income is not canceled, but an expense is recognized in the amount of the probably uncollectible amount (Plumlee et al., 2015).

Income and expenses for the same transaction are recognized simultaneously (matching of income and expenses). Warranty costs and other costs that may follow the delivery of goods can usually be predicted and measured, when other conditions for revenue recognition are met. Income cannot be recognized when expenses cannot be reliably measured. In such circumstances, any compensation received should be treated as an advance liability (paragraph 19).

It can be concluded that the recognition of income requires a careful and individual assessment of each transaction, in terms of whether the conditions from paragraph 14 are met, i.e. whether the process of earning income from the sale of goods or products is completed or mostly completed, so that, with certain

provisions for subsequent foreseeable expenses, the recognition of income and related expenses could be done (Sugiyanto & Sumantri, 2019).

Provision of services - There are services that are performed in a shorter period of time. Income and expenses related to a specific service are recognized at the time of completion of the contracted service. There are services, such as those in the field of investment construction, when the execution of the entire contracted service requires time longer than one accounting period. Respecting the principle of the occurrence of a business event or transaction, it may be necessary to recognize income and associated costs of the period in those cases as well.

When the result of a transaction involving the provision of services can be reliably estimated, revenue should be recognized according to the degree of completion of the transaction at the balance sheet date (paragraph 20). The result of the transaction, in terms of realized income, can be reliably estimated when the following conditions are met (Astami et al., 2017):

- if the amount of income can be reliably measured;
- if it is likely that the economic benefits related to the performance of the service will flow into the legal face;
- if the degree of service completion by the balance sheet date can be reliably measured;
- if the incurred costs, due to the performance of the service up to the date of the balance sheet, can be reliably measured.

The recognition of income according to the degree of completion, which is expressed as a percentage of the total contract price, enables the income to be recognized in the accounting period when it is realized. Revenue recognition, on this basis, is dealt with by IAS 11. The requirements of that standard are in agreement with this standard (paragraph 21).

As in the case of income from the sale of goods, the uncertainty in the collection of all or part of the claim, arising when the service has already been performed and the income recognized, is accounted for as an expense based on the correction of the claim, and not as a reversal of income (paragraph 22).

The legal entity is able to reliably assess the probability of economic benefits from the performance of the service (paragraph 23), if they have been agreed with the other contracting party (Donatella et al., 2019):

- the rights of the contracting parties;
- fees to be exchanged;
- method and conditions of settlement of the obligation. The degree of completion can be determined by:
- by inspecting and comparing the completed work according to the total work;

- according to the hours of work spent in relation to the total planned hours of work for the execution of the contracted work;
- according to realized costs in relation to planned costs (paragraph 24).

If it is not possible to reliably measure the performance of the service (which may be the case in the earlier stage of performance, when additional jobs appear whose contracting or recognition by the service user is yet to follow, so the outcome is uncertain), income should be recognized only up to the amount of incurred recoverable costs (paragraph 26 and 27).

If there is a high degree of uncertainty regarding the collection of the work performed due to, for example, the investor's bankruptcy, the unpaid part of the service is not recognized as income, and the incurred costs are charged to the expenses of the period (Stankov & Roganović, 2022; Savić et al., 2023). When the uncertainty is removed, revenues are recognized (paragraph 28) within the amount receivable.

Valuation and recognition of income from interest, royalties and dividends

Interest, royalties and dividends - Income based on the funds of a legal entity used by another entity, in the form of interest, royalties or dividends, should be recognized (paragraph 30) under the condition (Zalata et al., 2018):

- that it is likely that the economic benefits associated with these transactions will flow to the legal entity;
- that the amount of income can be reliably measured.

These revenues should be recognized (paragraph 30) on the following basis (Svabova et al., 2020):

- interest should be recognized using the effective interest rate method, in accordance with IAS 39;
- royalties for the use of funds should be recognized on the principle of occurrence of the event, in accordance with the contract;
- dividends are recognized when the shareholder's right to receive dividend payment is established, i.e. when the decision of the competent authority paying the dividend is made, and not when the dividend is received.

The effective interest rate is the interest rate that equates the present value of future income, during the lifetime of the asset or debt repayment, with the initially stated amount of the asset (Dašić et al., 2023).

On the example of the sale of goods on credit, the calculation of the amount of interest recognized as interest income at the time of payment will be shown (Milanović, 2023).

Example:

The legal entity sold the equipment at a price of 2,000,000 dinars, with payment in installments without the agreed interest. If the agreed payment upon delivery of the equipment, the buyer would have paid 2,000,000 dinars all at once. This would correspond to the fair value of the equipment (Janković & Golubović, 2024). But, since the buyer pays for the equipment in installments over a period of, for example, five years, it is likely that the fair value of the equipment will be less than the agreed amount due to changes in the value of money over time. In order to calculate this difference, which, in fact, represents the interest that is recognized in income, during the collection of the contracted price of the equipment, it is assumed that the prevailing (most common) interest rate at which the customer could secure a loan for the purchase of the equipment would be 10% per annum .

For five equal annual payments, if the first installment is paid at the end of the first year, the total interest will amount to 483,800 dinars, and the fair value of the equipment fee will be 1,516,200 dinars (2,000,000 – 483,800). Interest per year is calculated as shown in the table:

	The rest of the debt	Should	Principal	Total installment
1	2	3 = (2 x 10%)	4 (2 – 3)	5
Date of sale	1,516.200			
End of first year	1,516.200	151.620	248.380	400.000
End of second year	1,267.820	126.782	273.218	400.000
End of third year	994.602	99.460	300.540	400.000
End of fourth year	694.062	69.406	330.594	400.000
End of fifth year	363.468	36.532	363.468	400.000
In total	–	483.800	1,516.200	2,000.000

According to this standard, the legal entity-seller should record the transaction from this example as follows:

Ord. Num	Account		Description	Amount	
	Debit	Credit		Debit	Credit
1	2	3	4	5	6
1	034		Long-term loans in the country	2,360.000	
		612	Income from the sale of products and services on the domestic market		1,516.200
		491	Calculated income of the future period		483.800

		470	Obligations for value added tax on issued invoices at the general rate (except for advances received) - for equipment sold on credit		360.000
2	241		Current (business) accounts	400.000	
		034	Long-term loans in the country - for payment of the first installment		400.000
3	491		Calculated income of the future period	151.600	
		662	Interest income – for interest income from the first installment		151.600

Fees from royalties charged for leased assets (software, patents, etc.) are realized in accordance with the contract. Revenue recognition is possible: 1) if the contract is concluded, 2) if the asset is transferred, 3) if a fixed fee is determined or the fee is determinable, 4) if collection is probable (paragraph 33).

The right of a shareholder to receive a dividend on the capital of another legal entity arises from the decision of the authority responsible for approving financial statements (the shareholders' meeting) to pay dividends to shareholders. When such a decision is announced, there are conditions for recognizing income based on dividends. If after the end of the period, due to certain circumstances, it becomes known that the payment of the dividend will be absent, the previously recognized income (as in the case of the sale of goods and the provision of services), through the correction of the claim for the dividend, is recognized in the expenses of the period (Milenković et al., 2023).

Conclusion

In order to properly apply the regulations and standards that regulate the recognition and accounting measurement of income, the legal entity should disclose: the adopted accounting policies for the recognition of income, including the adopted method of determining the degree of service completion; the amount of each significant category of recognized income based on: sales of goods, services performed, interest, royalties and dividends (within the report; if necessary, also in the notes); the amount of income generated by the exchange within each category of income.

Any potential gain or loss is disclosed in accordance with IAS 37. These gains or losses can arise most often based on the costs of guarantees, claims, but also other events.

Real estate can be sold with a certain degree of continued involvement of the seller, and the risks and benefits are not transferred. Such examples are contracts on sale and repurchase, according to which the buyer is allowed to enter the possession for a certain period of time or guarantees the return of the deposit

during a certain period. In these cases, it is assessed what kind of transaction it is and how it will be accounted for - whether as a sale, financing, lease or some other arrangement for profit sharing. If revenue is generated, the contractual arrangement may require deferred revenue recognition. Assembly services are recognized in revenue according to the degree of completion of the assembly. If the value of the assembly is insignificant (activating a television receiver, assembly of furniture, etc.), it is recognized as income when the goods are sold. Service costs included in the price of the product. If servicing costs can be identified (after-sales support, product improvement when selling software), that part of the price is earned subsequently during the period in which the services are performed. That amount of deferred revenue should cover servicing costs and reasonable profit.

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KNOWLEDGE AND INFORMATION MANAGEMENT IN THE COMPANY AS A STRATEGIC BUSINESS RESOURCE

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Abstract

The beginning of this century brought profound changes in the approach to strategic management, as companies faced a faster pace of change in the environment, as well as an increased volume of information and knowledge. While managers previously made strategic decisions within the framework of a limited amount of information, today they are expected to effectively manage knowledge, both organizational and competitive. Organizational knowledge management has become a key factor in making the right decisions and achieving competitive advantages. It includes not only collecting and analyzing data, but also the ability to use knowledge in the right way, through innovation, process improvement and rapid adaptation to market changes. Top management must now integrate knowledge management into strategic management in order to ensure the long-term growth and sustainability of the organization. Given that knowledge management requires the engagement of key people within the organization to carry out this process, managers are facing new challenges. Managerial competencies are becoming the focal point of this transformation. Increasing the individual competencies of each manager becomes necessary so that the organization can function as a whole that effectively uses its knowledge. In addition, the development of managerial competencies must be directed towards the management of different types of knowledge – from tacit (informal,

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experiential) to explicit (formal documentation and procedures), and enable synergy between these types. The development of managerial competencies and knowledge management are not separate processes, but take place in parallel. Managers must constantly improve their abilities in order to be able to effectively manage different aspects of knowledge, while the organization must develop the capacity to quickly transfer and apply new knowledge in daily operations and strategic planning.

Keywords: *management, knowledge, information.*

JEL: *D85, D89.*

Introduction

Global competition and the speed of change in organizations emphasize the importance of human capital and the ability to quickly implement knowledge within the organization, which is considered the only sure source of lasting competitive advantage. In today's world, knowledge is becoming the basic capital of an organization, but also the main driver of its development. The previous competitiveness that depended on the possession of specific resources and low costs has now been replaced by competitiveness based on the possession of knowledge and its efficient management. Therefore, modern organizations are increasingly investing resources such as money, time, energy and information in the education and continuous improvement of employees. In the modern economy, where difficult market conditions prevail, knowledge has become a key factor for the survival and development of companies. We live in a time marked by increasingly rapid, dramatic, complex and unpredictable changes. Technological, market-economic, political, social and global factors influence the acceleration of these changes and the shaping of the theory and practice of economics and management. The concept of "Knowledge Management" is becoming one of the key factors in creating competitive advantage in the new economy and management. Knowledge management promotes an integrated approach to identifying, adopting, collecting, sharing and evaluating the intellectual property of each company.

In today's hyper-competitive business environment, knowledge is not only a critical factor in faster changes, but also a driver of rapid transformations of old economic paradigms and management concepts. In the era of knowledge, significant changes also relate to the change in consumer reality, which implies increasingly sophisticated consumer demands. The problem of companies is no longer only how to satisfy current needs, but how to predict future consumer needs and meet them appropriately. The use of advanced technologies in generating products and services requires constant investment in equipment, but also in employee education. The reduction of the product life cycle poses new dual demands to companies: on the one hand, there is pressure to reduce the time

from the initial idea to the working version of the product, while on the other hand, the requirements of current standards and formal groups regarding product quality are increasing.

Previously, the strategic focus of companies was on how to best design the relationship between product and market, i.e. to create the right product for the right market. However, today, companies' attention is focused on resources and capabilities that are unique, that can create value and that are at the same time difficult to imitate and multiply. This approach means that companies are increasingly considering the resources that are needed to create products and services, with knowledge being recognized as one of the key resources. This shift in focus does not mean that products and services are no longer important for the profitability of the company, but that companies that do not have enough knowledge will not be able to create products and services that will be accepted in the market. This trend fits into a broader pattern of change, as there has been a shift from a period when capital, land, labor and raw materials were the most important factors to a period in which knowledge has become the key factor for competitiveness. Traditional production factors, such as capital and labor, now play only the role of a means for maximum utilization and capitalization of accumulated knowledge.

Knowledge as a factor in business success

In the information society, knowledge becomes a key resource for doing business because it allows other resources – labor, capital and natural resources – to become productive. Knowledge is considered a crucial factor in production. Peter Draker believes that traditional resources, such as land (natural resources), labor and capital, have become less important, because they can be easily obtained if one possesses knowledge. In the new society, knowledge becomes a strategic source of power and wealth, and the basic social group is the users of knowledge, that is, people who are able to apply their knowledge in carrying out business activities. Draker calls these people "knowledge workers". This type of society differs from the previous one because instead of "responsibility for people's performance", there comes "responsibility for the application of knowledge and the performance achieved thereby" (Rhodes & Dawson, 2013).

Marketing enables knowledge management and creates opportunities for increasing knowledge productivity in all business functions of the company. It is a key instrument that makes knowledge more productive, and in modern business conditions, marketing is considered central to successful management. The essence of managing any function, and especially marketing, is information. Good information enables the successful implementation of marketing actions. This specifically means that marketing management becomes an information

processing process, where it is important to properly analyze and use data to make business decisions.

All activities within a company should be maximally market-oriented. Of particular importance are those activities that are directly focused on the market and that stimulate the growth and development of the company. In modern business conditions, business functions that have strategic importance due to their market orientation stand out in particular. These functions are key to achieving competitive advantages and long-term success in the market. Three key functions that are crucial for the growth and development of a company are marketing, quality, and research and development (Christian et al., 2016). The success of a company, as well as its growth, depend on the close interdependence and synergistic effect of these functions. In order to achieve business excellence and occupy a market position as an exceptional company, it is necessary to create world-class products and services. However, this is not the task of just one business function or one organizational unit of the company. Achieving these goals requires synchronized action of all functions within the company, with clearly defined business objectives. All sectors of the company must work in harmony in order to create a strategy that supports and improves growth and competitiveness in the market.

The main problems in marketing in our region include the failure to adopt marketing logic, an unconscious understanding of the integral marketing concept, a misunderstanding of the very essence of marketing, and inadequate treatment of marketing investments. There is also a problem with the organizational structure, insufficient speed of adoption of new trends, methods and techniques in marketing. The main task of marketing is to contribute to a realistic assessment of the company's internal capabilities and weaknesses, as well as external opportunities and threats. The marketing function should be properly positioned to help the company strengthen its management and action capabilities, and, as a service to the environment and consumers, achieve its mission more efficiently and effectively compared to the competition. For successful business, marketing must be precisely positioned within the company's internal environment, as a function of key importance, together with the research and development function and the quality management function (Shamim et al., 2019). This will provide marketing with the necessary support and resources to achieve company goals and competitive advantages.

Also, marketing should be seen as a business philosophy that integrates, coordinates and directs all activities of a company, with the aim of identifying, anticipating and satisfying the needs and demands of customers and consumers. The information resulting from marketing efforts forms the foundation of all business activities of a company, as it allows entrepreneurs to better understand the market and form strategies that will help them achieve competitive advantage

(Stefanović et al., 2024). For domestic businessmen, it is important to understand marketing not only as a tactical function, but as a strategic approach that enables the recognition of key factors for building and maintaining competitive advantage over the competition. In a rapidly changing market, marketing becomes a preventive and directing tool, as it helps to anticipate market needs and shape products or services that will meet those needs. Given that competitive advantage is increasingly based on intangible assets – such as brand, reputation, innovation and customer relationships – companies must focus their efforts on developing these values (Beke Trivunac et al., 2024). These intangible values are difficult to imitate or quickly obtain for competitors, which means that they become crucial for long-term survival and success in the market. In this way, marketing becomes the foundation for building a sustainable competitive advantage that depends not only on current market conditions, but also on the ability to create and preserve values that are not easily achieved or replicated.

The assets that a company creates by accumulating within its own resources are the result of a long-term process, which develops over time through the practice of “learning by doing”. This type of asset cannot be acquired through market transactions, because it is specific and unique to each company (Hammer, 2015). The company’s strategy is based on this type of asset, which is limited in its supply. This means that a company gains competitive advantage precisely through the long-term accumulation and use of its internal assets, while competitors must accelerate their learning in order to reduce the difference that exists between them and the companies that already lead in their industry. Peter Draker points out that knowledge is today the only truly significant source of value and power for companies. Traditional company resources, such as land, natural resources and labor, have not lost their importance, but they have become secondary to knowledge. These resources now become available or can be used only if there is appropriate knowledge that can use them in the right way. Knowledge is now seen as a key tool for achieving social and economic results. Draker, therefore, believes that the yield of knowledge is crucial for achieving company success. He emphasizes that management is, fundamentally, the ability to use existing knowledge to achieve results. In his vision, management is the central organ of a knowledge-based society, while the manager is responsible for the application of that knowledge and for the performance achieved through its application. A manager must have the ability to use knowledge effectively so that the company can achieve its goals, improve its processes, and secure a long-term competitive advantage.

Important approaches to knowledge management

Given the widespread recognition of the importance of knowledge as a key resource in modern organizations, there is an intense need for effective management of this resource. In today's business environment, knowledge has

become a central factor determining competitive advantage, innovation and the ability of organizations to adapt to change (Joseph et al., 2017). However, knowledge management is still a relatively new field, which is developing rapidly. This rapid development has led to the formation of different approaches to knowledge management, which depend on the perspective from which the field is studied. Different approaches to knowledge management arise from different theoretical foundations, business needs and industry specificities (Savić et al., 2023). Well-known consulting firms, as well as researchers in this field, often formulate specific knowledge management models, which are focused on different aspects of this complex process. In this context, the work dealing with the analysis of knowledge management attempts to provide a comprehensive overview of current trends in this field. The different approaches used may include technology, strategies to improve collaboration among employees, and the creation and sharing of knowledge within organizations.

It is important to note that there are many works that attempt to bring structure and order to this sometimes confusing topic. One of the pioneers in the classification of knowledge management approaches was Michael Earle, who classified the approaches into seven schools, grouped into three key categories (Duan et al., 2019): technocratic, economic, and behavioral. Each of these schools brings different views and recommendations on how to effectively manage knowledge within an organization. The technocratic approach, for example, focuses on technology and tools that enable the collection, storage, and sharing of knowledge. The economic school emphasizes the importance of the value that knowledge brings to the organization, while the behavioral approach emphasizes the human factor, the culture of the organization, and the way employees communicate and share knowledge. Understanding these approaches allows organizations to choose the method that best suits their specific needs and goals.

Knowledge acquisition is the process through which an organization acquires knowledge that it can use in its business. Knowledge can manifest in two forms: tacit (implicit) and explicit. Tacit knowledge is that which is difficult to formalize or express, such as the experience that an expert has in a certain field. For example, tacit knowledge is what an expert carries in their mind, and which is not easily transferable. On the other hand, explicit knowledge is formalized, written down, and can be easily transferred, such as knowledge contained in manuals, handbooks, or documents that are written down and accessible. The process of knowledge acquisition involves two key steps (Kar & Dwivedi, 2020): externalization and internalization. Externalization is the process in which tacit knowledge becomes explicit. This can happen when an expert writes a report or guide describing their experiences, insights, or a way to solve a problem. For example, an expert can document their knowledge about how they solve a specific problem, which allows others to use that knowledge. Internalization, on the other hand, is the process by which explicit knowledge becomes tacit, i.e. when a

person internalizes that knowledge and uses it practically. For example, if an employee reads a book and "adopts" its contents, that knowledge becomes part of his abilities and experiences, and becomes available to the organization through his work and decisions.

Knowledge sharing is the process by which knowledge is transferred from one point to another, whether it is an individual, a group or an entire organization. Knowledge sharing can be divided into two basic sub-processes (Kambiz et al., 2018): socialization and exchange. Socialization refers to the transfer of tacit knowledge, where knowledge is transferred directly between individuals through shared activities, conversations or mentoring. For example, if one employee asks another how to solve a certain problem and the latter explains it to him, this is the transfer of tacit knowledge. Also, if two employees work together to solve a new problem, through discussion and collaboration they not only transfer existing knowledge, but also create new knowledge that was not previously documented. On the other hand, exchange refers to the transfer of explicit knowledge. This can be, for example, when one employee lends a book to another or when research reports and other documents are exchanged between employees. Exchange can also be more formal, such as the transfer of knowledge between two organizations, when one organization shares its information with another, often through contracts or strategic partnerships. Explicit knowledge sharing enables a wider distribution of information and knowledge within an organization or between organizations, facilitating faster application and innovation. Through these processes of knowledge acquisition and sharing, organizations can improve their performance, innovate, and develop competitive advantages, as they enable every member of the organization to use and contribute to collective knowledge (Milošević & Stankov, 2023).

Knowledge application involves the use of knowledge that has been collected through the previous three processes: knowledge acquisition, sharing, and accumulation (Savić & Bonić, 2022). It is important to note that the person applying knowledge does not necessarily have to understand all aspects of that knowledge. The knowledge application process itself can be separated into two key aspects: routines and instructions. Instructions are a form of knowledge application in which a person who possesses certain knowledge uses that knowledge to instruct someone else to perform a certain task. In this case, the person giving the instructions may not have full awareness of how and why the knowledge works, but knows how to direct another person in the right way. For example, a person with experience in a certain field can give clear instructions to another person on how to achieve a result, although they do not necessarily understand all the technical aspects or the theory behind those instructions. This is especially useful in organizations where knowledge must be transferred quickly and efficiently, but without the need for everyone to understand the deep theoretical foundations. Routines, on the other hand, refer to common procedures,

rules, and norms that guide users towards a certain behavior or way of solving a task. Routines can be established as a set of standardized procedures that allow employees to know exactly what to do in certain situations, even if they do not fully understand the reason why something is done that way (Milošević et al., 2024). These routines are often based on experience and previous practices, and are usually used to achieve a predictable and efficient outcome. One way in which routines are implemented in practice is through software tools and wizards, which allow users to follow specific steps in completing a task. Software can, for example, provide detailed instructions and step-by-step guidelines that users follow, all without having to understand the deep meaning of each step. Software wizards allow users to perform a certain process without prior knowledge of all the technical details, making the application of knowledge easier and more accessible to a wider number of people within the organization.

Through these knowledge application processes - through instructions and routine procedures - organizations can effectively use accumulated knowledge and put it into practice, enabling faster, more consistent, and more predictable work, even without the need for a deep understanding of every detail.

Development of managerial skills for knowledge management

Managerial competencies represent the key ability of managers to effectively lead an organization towards achieving its goals, both short-term and long-term. According to Sanchez's definition, managerial competencies can be understood as the collective ability of managers to develop and integrate various resources within the organization, such as managerial abilities, knowledge and resources, in a way that contributes to organizational competence (Conboy et al., 2020). This process of developing managerial competencies allows organizations to achieve better performance and growth, as managers use their knowledge and skills to ensure the effective achievement of organizational goals.

In the modern business environment, there is a clear tendency towards the flexibility of organizational structures, which implies a reduction in the number of organizational levels (Dašić et al., 2023). This "shallow" organizational structure allows organizations to be more agile and respond faster to changes in the environment, which has become imperative given the dynamics of the market. Due to these changes, building managerial competencies becomes even more important because organizations must rely on cooperation and coordination of all levels of management, even when the number of these levels is reduced. Effective collaboration and exchange of experiences between managers at different levels of the organization contributes to strengthening managerial skills and capabilities throughout the entire organization. Integration of efforts at all management levels allows the acquired skills to be transferred and used in different parts of the organization. For example, managers at higher levels can share their experiences

and strategies with managers at lower levels, which helps to spread knowledge and improve capabilities at all levels of the organization.

Managerial knowledge can be divided into two basic categories. The first category includes knowledge about human behavior within an organization, which includes understanding how individuals and groups function, how they make decisions, and how they behave in different situations (Trifunović et al., 2023). The second category refers to knowledge about how organizations function, which includes understanding the structures, processes, and systems that make up an organization, as well as how these factors are interconnected. In addition, managers must also have knowledge about the content of organizational work, which means that they must be familiar with the specific tasks, responsibilities, and skills that are necessary to achieve organizational goals. Given these different types of knowledge, it is clear that all managers, regardless of their organizational level, must pay attention to developing and improving their managerial skills and knowledge. This ensures that the organization functions effectively and can respond to the challenges posed by the modern business environment. According to Sanchez, managerial knowledge can be classified into four key domains, which include different aspects of knowledge needed to successfully manage organizations. Each of these domains has specific characteristics and a role in shaping the competencies of managers (Drnevich & Croson, 2013):

- Managerial functional knowledge: This form of knowledge includes understanding the roles that managers need to play in different functions of the organization. This includes skills in the areas of planning, leading, controlling and communicating with employees and other key stakeholders within the organization. Also, managers must have knowledge of the functional areas of the company, such as production, marketing, human resources, research and development and other sectors, in order to be able to effectively coordinate and direct activities in accordance with the organization's strategies.
- Managerial technical knowledge: This domain includes specific knowledge of the methods, processes, procedures and techniques used within certain functional areas of the company. For example, managers in the marketing sector must understand various market research techniques, while managers in production must know the techniques of the production process, quality management and the like. This knowledge allows managers to effectively apply specific tools and techniques to improve the performance of the organization.
- Managerial corporate knowledge: This domain refers to the knowledge that managers have about the organization's reason for existence and its mission. Managers must be aware of the fundamental purpose of the enterprise and know for which stakeholders the organization creates value, whether they are customers, employees, shareholders, or other actors. Understanding the

value that the organization provides to its stakeholders is crucial for making strategic decisions and guiding the organization toward its goals and values.

- Managerial environmental knowledge: This form of managerial knowledge involves understanding the external environment in which the organization operates. This includes knowledge of external resource providers, such as suppliers and partners, as well as understanding consumer preferences, competition, and macroeconomic developments. Managers must monitor industry trends, be aware of market changes, and adjust the organization's strategies and operations in accordance with external factors that affect the business.

Each of these domains of managerial knowledge contributes to a comprehensive understanding and ability of managers to effectively manage organizations and respond to the challenges posed by the market and internal functions. The purpose of forming knowledge domains in management is pragmatic in nature, as it allows for the effective management of different aspects of the organization and the adaptation of managerial skills and knowledge to specific needs at different levels of management. This approach is reminiscent of Katz's model of managerial skills, which divides them into human, conceptual and technical skills, noting that all these skills are needed by all managers, but to different degrees depending on the level they are at (Wamba et al., 2017). For example, operational management (lower management) uses technical skills to the greatest extent, then human skills, while conceptual skills come to the fore to a lesser extent. With higher levels of management (such as middle management), the emphasis shifts towards the conceptual and strategic aspects of business.

Similarly, the domains of managerial knowledge are not used in the same way at all levels of the organization, because different levels of management have different responsibilities and tasks. Operational management, which is responsible for the day-to-day management and implementation of decisions, should focus primarily on functional knowledge (how different functional areas of the company such as production, marketing and human resources function) and technical knowledge (specific techniques and methods in operations) (Savić et al., 2023). At a lower level, managers are mainly concerned with making concrete, tactical decisions that do not require a deep understanding of the broader, external environment and strategy of the organization. For middle management, which manages teams and supports the implementation of strategy, technical knowledge still plays an important role, but it gradually loses importance compared to functional knowledge and knowledge of the environment. Middle managers must be able to recognize changes in the environment (market, competition, economy) and use this knowledge to better manage resources and teams, as well as to direct the organization towards goals (Mihajlović & Todorov, 2024). Also, corporate knowledge (understanding the organization's mission and vision, as well as the value created for stakeholders) is becoming increasingly important, as middle

managers begin to play a key role in linking the organization's strategy to operational execution. Therefore, all managers, regardless of level, must have a solid foundation of knowledge in all domains, but their application and importance depend on the specific tasks and responsibilities carried by their managerial level.

Company knowledge and environmental knowledge are crucial for top management, as they make decisions that have long-term implications for the future of the organization. These decisions shape strategies that will define the direction of the company's development in the long term, so the responsibility of managers at this level for these areas of knowledge becomes significantly more pronounced. Top management must be able to understand and integrate the external context into business strategy, recognizing factors such as competition, market changes, economic conditions and the regulatory framework that can affect the organization's operations. In addition, managers must know the organization's internal capabilities, its values and mission in order to be able to lead the company towards achieving long-term goals.

Knowledge management and the development of managerial competencies are key to improving processes within an organization. Namely, all business activities of an organization can be reduced to three basic processes: effectiveness, efficiency and innovation. Each of these processes is important for the successful operation of a company, and knowledge management plays a key role in achieving them (Larson & Chang, 2016).

- Effectiveness refers to executing the most appropriate processes and making the most feasible decisions. In other words, an organization should be able to recognize which processes and decisions will enable it to achieve its goals in a way that is most favorable for its development. Knowledge management can help an organization become more effective by enabling the selection and implementation of the most appropriate decisions, based on the information collected and analysis.
- Efficiency refers to how an organization uses its resources to achieve its goals with minimal cost and time. Here, knowledge management plays an important role because it allows an organization to optimize its operations and increase productivity, eliminating unnecessary activities and improving process flows.
- Innovation refers to an organization's ability to develop new ideas, products, and processes that can take it forward in a competitive environment. Here, too, knowledge management plays a key role because it allows the organization to constantly gather new information, research best practices, and apply creative approaches that can lead to new solutions.

Knowledge management enables organizational members to gather the information necessary to monitor external events, thereby reducing the possibility

of unplanned surprises for organizational leaders (Zupur & Janjetović, 2023). When information is up-to-date and relevant, managers can make better-informed decisions, reducing the need for changes to plans and last-minute decision corrections. Conversely, poor knowledge management can lead to organizational errors – for example, repeating the same problems or poorly anticipating problems, even when they are obvious. Errors that arise from lack of or improper knowledge management can lead to a loss of competitive advantage and a decrease in organizational efficiency. Knowledge management allows an organization to quickly and effectively adapt its processes to current circumstances, which is especially important in times of frequent and dynamic change. In such conditions, organizations that manage knowledge can quickly respond to new challenges, optimize their processes, and adapt to market changes, competition, and changes in customer needs. Rapid adaptation allows an organization to remain competitive, even in conditions of uncertainty and market volatility.

However, knowledge management can become challenging when there are changes in the workforce, such as employee departures from the organization or the hiring of new employees. In both cases, the organization may find itself in a situation where it loses or has to adapt key elements of its knowledge (Karagoz et al., 2016).

- Employee departure can lead to the loss of valuable knowledge that employees bring with them. This applies not only to the individual knowledge that employees acquire during their work, but also to the knowledge that has been accumulated through organizational learning. Such knowledge can be essential for the organization's competence and competitive advantage. For example, expertise, experience, and “best practices” that have been developed over the years can be lost, which can lead to reduced efficiency, increased errors, or reduced innovation. Erosion of competitive advantage can occur if this loss of knowledge is not compensated for or adequately transferred to other team members.
- Hiring new employees can bring similar challenges. New employees may bring with them different experiences and approaches to work, but this can also create a problem in terms of incompatibility with the knowledge that has already been adopted in the organization. For example, new employees may not be familiar with the organization's routine processes, procedures, and customs, which can create barriers to integration and increase the time it takes for them to adjust. Organizational guidelines, procedures, and culture may be foreign to new employees, which can negatively impact overall organizational effectiveness.

However, at the same time, it should be recognized that new employees can bring beneficial changes to the organization. They can identify gaps in existing knowledge and suggest improvements in all its elements, from routine procedures

to strategic approaches (Milenković et al., 2023). They can also bring a new perspective from previous experiences and jobs, which can lead to innovation and process improvements in the organization. In this sense, new employees can become an important source for improving organizational knowledge and strengthening the organization's ability to cope with future challenges. All this implies that organizations must carefully manage the transfer of knowledge and the integration of new team members in order to minimize potential losses and maximize the benefits that new perspectives can bring.

Conclusion

In the modern world of capital, technology and markets, the most important factor for making a profit is inventiveness and creativity. Rapid changes in society, economy and technology pose new challenges for managers, because the market with its demands is constantly evolving. What is a successful strategy today may not be enough tomorrow. Therefore, the application of knowledge in all aspects of business, from resources and production, through promotion and sales, to achieving the ultimate goal - profit, becomes crucial for the survival and growth of organizations in the future. Managers who continue with traditional approaches are unable to cope with modern crises and rapid changes. Without new knowledge, skills and strategies, many managers have failed to prevent crises that arose due to insufficient understanding of the market and environment. Therefore, the existing theories and methods of classical management are no longer adequate. Organizations are facing turbulent changes that require a new type of manager, capable of predicting and implementing changes in real time. Given that the world is changing almost daily, successful management in the future must rely on a completely new approach - a new paradigm. Managers must become change managers. Change, as a key word, must be the core strategy that defines how managers approach problems and how they manage organizations. Organizations must be agile, ready to respond quickly to new challenges, to improve their products and services, and to constantly adapt to the market.

Focusing on creativity and innovation, as well as the ability to use new knowledge and technologies, is becoming the most important factor in success. Managers of the future will not only be leaders who manage, but also visionaries who initiate change, adapt to new circumstances, and change the organization in order to recognize and seize new opportunities.

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ACCOUNTING AS AN INFORMATION SYSTEM

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Abstract

Here, the elementary postulates and foundations of modern accounting, as an information system, are discussed in detail. All the most important accounting methods and techniques used today in business communication and financial reporting are considered. The subject is specifically focused on accounting as an information system. These methods and techniques are scientifically based, legally regulated and generally accepted through positive accounting professional regulations.

The basic assumptions from which we proceed are focused on the fact that accounting can be formed as an information system at the level of business entities. Within the framework of the basic hypothesis set out in this way, accounting, as a system, has developed by following changes, adapting to socio-economic systems. As an auxiliary hypothesis, it was taken that accounting, in its essence as an information system, takes data, which it presents in the form of information through financial statements. Therefore, the accounting system has a feedback loop between data related to balance accounts and data related to profit and loss accounts. Accounting as an information system takes the account or bill as the basic functional unit of its system.

Keywords: *accounting, information system, economic system*

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Introduction

Business, as the movement of economic factors in a certain direction, requires continuous monitoring, regardless of whether it causes changes or maintains the existing state. In this sense, accounting is the most important part of the overall information system of every business entity and most of the information needed in the business decision-making process is created precisely in accounting. Therefore, we can say that accounting is a service function of management (Škarić, 2010) intended for collecting, processing, or monitoring and studying "data" and shaping them into information. There are many definitions of accounting depending on the way of observing its role in the social system and its place in the system of sciences. It can be defined as "the skill of recording, classifying, briefly presenting and interpreting in monetary form business events that are at least partially of a financial nature and interpreting the results resulting from this" (Dašić et al., 2023). Accounting is associated with four important characteristics, namely: data collection, processing, presentation and analysis of accounting information, which relate to the business of the company and are directed to interested users.

We can find different opinions on how to define accounting, that is, what it encompasses (Paspalj et al., 2024). The organization of the accounting function must provide support to a sufficient number of factors, executive and managerial functions, in order to enable the implementation of its own business goals. In this sense, when organizing, the possibility of work, user access, quality and quantity of databases, speed of information flow, etc. must be taken into account (Barile et al., 2023). Due to the large number of transactions and frequent changes in the state, the accounting organization must ensure the accuracy of data and completeness of information. The accounting function provides this requirement by connecting, internally and externally, with its stakeholders and other business functions. In order for the accounting system to fully meet its purpose, it must ensure the security of the data contained within the system (Janković & Golubović, 2024). In this regard, the organization of the accounting function includes, among other things, control of input data, control of access to data, prevention of unauthorized changes to data, verification of persons working on the data (user name) in terms of authorization, control of the delivery of output information, etc. For this purpose, the accounting function provides business support from other functions in the company.

Theory of accounting as an information system

In general systems theory, the fundamental role is played by elements of real and organizational systems, i.e. systems capable of solving given goals. This is explained primarily by the cause-and-effect perspective, which is based on achieving a goal and making a decision. By goal, we mean the desired result, or in

our case, the information materialized in financial statements for a certain accounting period. The goal of an accounting information system becomes a task if a deadline for its achievement is set and specified, and the quantitative characteristics of the desired result are specified (Schroeder et al., 2022).

In the domain of accounting information systems, a goal is a more general category than a task, so it is achieved as a result of solving a series of tasks. We can assume that if the goal is formulated, i.e. the task is set, we can begin to determine the program for achieving the goal and performing accounting operations according to one of the assumed programs. Accounting information systems are characterized by multidimensionality, structural diversity, multiple state changes, multicriteria, descriptions in the language of differential equation theory and Boolean algebra, and solving corresponding tasks using various models and methods.

Such systems can most often have several properties at the same time, for example, multidimensionality indicates a large volume of circulating data, the existence of a large number of subsystems and elements in the form of accounts. The performance of the system's functions is supported by its structure. A more complex structure reflects a more complex overall system of interdependencies of its elements and functions (Vladisavljević et al., 2023). A diverse structure implies diverse forms of connections between the elements of the system. In accounting information systems, goals have a hierarchical character, because the goal is achieved by performing a hierarchical set of individual operations of different levels (Majstorović & Obrić, 2023). In this regard, the graph of goals and tasks is identical to the graph of operations, where nodes express operations and their goals of different levels, and branches represent relationships between operations and the corresponding goals. Multicriteria implies the existence of a series of criteria that must be satisfied by the accounting information system. When forming a system, the problem of multi-criteria often arises, how to choose a solution when there is a set of criterion functions. $f=f_i(a)$, ($i=1, 2, 3, \dots, n$) where a is an alternative that represents either a continuous vector variable of a convex closed domain (usually determined by a system of linear or nonlinear equations) or a discrete variable that takes a finite set of given values (Ali et al., 2023). If the optimum for each criterion cannot always be reached for the same value of a , then the solution is understood as a set of effective alternatives. A given alternative is effective if there are no other alternatives that are better for at least one criterion and no worse for the others (Najjar et al., 2023). The criteria of the set f have different meanings, some of them are maximized, for example, revenues, and others are minimized, for example, costs. The diversity of subsystems and elements of an accounting information system (AIS) implies a diversity of subsystem interactions at one level and between different levels of the hierarchy. Much practical research in the field of accounting information systems is reduced to searching for the extrema of complex functions. This complexity is associated

with the stochastic nature of functions and constraints. Tasks with such properties are tasks of mechanism design (Gojković et al., 2023). In the process of researching its functions, an accounting information system should move into a specific state area called the functioning goal. These goals are ensured by performing tasks, and the tasks that the first-level subsystems should achieve arise from the goals, the first-level goals arise from the tasks and goals that the second-level subsystems should achieve, etc. Changing the state of the system implies the implementation of a set of activities aimed at achieving the goal, these systems implement some type of behavior. In this way, the realization of a set of activities represents a change in the system and the environment. In this regard, regardless of the goals and tasks, we are talking about processes of changing the state $x(t)$ and about processes at the input $u(t)$ and output $y(t)$ of the system. The given characteristics are diverse and from that point of view, there is no distinction between control and management systems.

When considering systems of different nature and different information and energy content, the most appropriate term for their definition is complex systems, but for the study of organizational systems that have an economic character, such as accounting information systems, the most appropriate term is large systems. The basic property of these systems is their goal orientation, which represents the ability to choose behavior depending on the functions of criteria and constraints (Milanović, 2023). The external characteristics (outputs) of these systems are determined not only by external influences (inputs) but also by goals, for example, inputs in the form of purchase values, depending on the goal of displaying fair value, will have different amounts as a result (Najjar et al., 2023a). Complex accounting information systems, realizing operations, are represented in the form of two subsystems, the management and control system. The parameters of the state of the control system are expressed by the vector $x(t)=(x_1(t), x_2(t), \dots, x_n(t))$. Since the change in the state of the system is called its behavior, therefore, by performing operations, the system realizes some type of behavior, which is why the execution of operations in a certain environment means a change in the situation in the desired direction. The outcome of the operation will be the situation that arose at the moment of the completion of the operation, which is why goals and tasks can be viewed as methods of achieving the desired situations. This means that the goal of the state or the function of the state $x(t_1)$ at the moment t_1 of the completion of the operation is the state parameter $x(t)$ sometimes called the phase variable of the operation. To perform the operation, the system has a certain amount of resources at its disposal, the size of which at the moment t is expressed by the vector $u(t)=(u_1(t), \dots, u_r(t))$. By distributing resources in an appropriate way, the phase variable of the operation can be influenced. Whereby, we can change the resource stocks in a certain time interval of the execution of the operations.

- Accounting information system theory is increasingly developing and penetrating deeper into various areas of economic observation. The idea of analyzing insufficiently structured problems has shown its prospects, even in cases where the practical aspects of some systemic problems are inaccessible to modern theory due to their complexity. The theory of RIS is viewed in three directions (Ahmadian et al., 2023):
- building conceptual and methodological foundations;
- formulating new tasks;
- developing methods and techniques for solving new tasks.

Obviously, the first direction is fundamental, which is why it is necessary to develop it intensively. Considering that this system also includes humans, it is necessary to form a methodology for implementing changes, the implementation of which can solve the tasks facing us.

Formalization problems within accounting information systems

The formalization of an information system starts from the mathematical theory of models of complex systems, including accounting information systems. In the general case, the model implies elements from the set x,y and the relationship r between them. More specifically, r represents the operator $F: x \rightarrow y$. Where, x,y as sets will be called the input and output spaces, respectively. Let us assume that there are N operators $f(i): X(i) \rightarrow Y(i)$, where

$$X(i) = \prod_{q=1}^{m(i)} X_q(i)$$

and the set $X_q(i)$ with elements $x_q(i)$ is called the channels. In this case, the output of operator (i) represents the input of operator (j), if there is such a $q(j)$ that $x_q(j) = y(i)$. In this case, operators (i) and (j), are called additive. Let the given operators be connected according to some scheme and as such they are called a network of operators. If the number $k(i)$ of outputs of other operators, which are the inputs of operator (i) is less than $n(i)$, then the remaining free channels represent the channels of the network, while the elements of the set. (Zhang et al., 2024)

$$U(i) = \prod_{k(i)+1}^{n(i)} X_q(i)$$

represent the inputs of the network, free channels have numbers, from $k(i)+1$ to $n(i)$.

The described network can be considered as some operator $F: x \rightarrow y$, where $X=FU(i)$, and the output can be formed by the outputs of the network operators. The operator F , in relation to the network operators, is called the next higher level operator, and the network of such operators represents the next higher level network (Elamy et al., 2024).

If the network typology and description of each operator are given, then the description of the entire network is given, that is, the description of the operator of the next higher level is given. Such a description can be complex, so the task of determining a simplified description of the operator of the next higher level may arise, based on studying the network. The meaning of such an approach is that the problem of modeling an accounting information system is reduced to determining the network typology and describing the elementary network operators (Savić et al., 2024).

Let us consider in more detail the type of model that will be the subject of analysis further, models of dynamic systems, in the general case - controllable (Milenković et al., 2023). If we have a real system - an economic system or a complex economic system, which consists of subsystems of different nature, and whose state can be characterized at any moment by the number x , or a series of numbers (indicators), i.e. a vector

$$\vec{X} = (\vec{X}_1, \vec{X}_2, \dots, \vec{X}_n)$$

or in general an element of some set X_0 , which we call the state space. A change in state x over time is called a process. If this change can be controlled, the process is called controllable (Vuleta et al., 2013).

Let the state be considered at certain moments $t_0, t_1, \dots, t_k, t_{k+1} > t_i$. We call the moment t_0 and the state at that moment $x(t_0)$ the initial. The moments t_1, t_2, \dots represent steps, and the corresponding states $x(t_1), x(t_2), \dots$, are states at the first, second step, etc. Control processes can, as a rule, be described by indicating the regularities of the transition from the previous state $x(t_i)$ to the next state $x(t_{i+1})$ at each step depending on the control influence, which characterizes some vector (Ning et al., 2023)

$$\vec{u} = (\vec{u}_1, \vec{u}_2, \dots, \vec{u}_0)$$

(set of control parameters), or, in the general case, an element of the set u_0 , which is called the control set.

In addition to control, this transition can also be influenced by other factors that cannot be controlled and strictly encompassed. They are also characterized by a state and control by some vector, or an element of a set of another nature, which is often called a disturbance.

The mathematical model of the control process is, as a rule, an equation that connects the next state with the previous state, control and disturbance:

$$x(t_{i+1}) = f(\{t_j\}, \{x(t_j)\}, \{u(t_j)\}, \{v(t_j)\})$$

In the case when the excluded factors are so insignificant that they can be ignored in the mathematical model, the element v is not included in the equation, and the

equation describes the process with complete information. In this case, the process is completely determined if the initial state $x(t_0)$ and the control and disturbance at each step are given (Gojkov, 2024). This change is usually called the realization of the control process at a given disturbance.

Models of complex economic systems are compiled in the form of block diagrams. These block diagrams consist of a series of elementary block diagrams, interconnected by arrows, which indicate that the inputs and outputs are vector functions u, y . The impact of the environment on the system is characterized by some parameters, or indicators, which are called input parameters. The inputs $u(t)$ of the system determine the components of its state.

The influence of the system on other phenomena and factors that are also some separate independent systems is represented by the output $y(t)$, which is determined by the concepts of input-state and output. Therefore, the system model is determined in the following way: $S=(U, Y, E)$, where U is the input space, i.e. the set of all inputs, such that each input corresponds to an output, i.e. the pair $(u,y) \in E$; Y is the output space, i.e. the set of all outputs, such that each output is conditioned by the input, where $(u,y) \in E$; E is the set of input-output pairs, such that $(u,y) \in E$ (Stankov & Roganović, 2022).

The set E represents the characteristic of the system S , or the degree of decision-making, on the basis of which the optimal arrangement of vertical and horizontal connections in the system is determined. In other words, the set E determines the relationship that determines the dependence of the input on the output, i.e. (Milenković, 2023).

$$E \subset UY$$

In some cases, the output of the system is, at the same time, its state, i.e. $y(t)=x(t)$. On the other hand, the input of the system represents the influence of the environment on the system. Information inputs and outputs are of particular importance, because management is achieved using information processes, i.e. the use of cause-and-effect relationships.

The nature of subsystems and elements of complex systems is diverse. The interactions of subsystems at one level and between different levels of the hierarchy are also diverse.

In complex economic systems, all interdependencies do not have the character of connections of the type of system state equations. A large group of interactions has the character of behavioral hypotheses and is provided through an operator that describes optimization procedures, or they cannot be formalized at all. In addition, very often the mechanisms of the connection are not known and are formalized as a "black box". However, not simply as input-output, but that the output is a function of the input and state of the system.

Conclusion

This deepens knowledge in the field of accounting and creates a basis for further work in this not at all simple, but very interesting and important area of economics and management as a science. In this regard, accounting is presented as an information system and the basic tools and mechanisms used in accounting are presented. A very important place is occupied by the presentation of the connections between data and information, which are established through the accounting and information system.

The presentation of accounting as an information system is carried out through several interconnected units, which together form a single model, on scientifically acceptable grounds. The accounting and information system, in this model, is presented as a closed system of each business entity, including all necessary factors. The development of accounting as a system, within the framework of socio-economic changes, throughout history points to an increasingly shorter periodization of changes in the relationships between factors, while retaining its basic model of simple bookkeeping throughout its entire period of development. As such, the accounting and information system leaves room for upgrading the existing system with a new model of account linkage. The connection between basic and derived accounting instruments, in any period of development, is constantly strong, due to the principles on which accounting as an information system is based. It is important to emphasize that one of the qualitative characteristics can also be considered the systematization of previous knowledge in this area.

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UTICAJ DRUŠTVENIH MREŽA NA RADNOM MESTU MILENIJALACA

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Apstrakt

Istraživanje se fokusira na uticaj društvenih mreža na radnom mestu milenijalaca. U uvodu, naglašava se značaj komunikacije u savremenom društvu i potreba za novim oblicima poslovne komunikacije. Prikazane su prednosti i nedostaci tradicionalnih sredstava komunikacije, što dovodi do uvođenja društvenih mreža u poslovno okruženje. Istraživanje je sprovedeno anketiranjem 183 milenijalca u periodu od februara do aprila 2023. godine. Za analizu podataka, korišćen je statistički softver SmartPLS 3.0. Rezultati ukazuju na pozitivnu vezu između upotrebe društvenih mreža, deljenja znanja i radnog učinka. Potvrđeno je dve od tri hipoteze. Direktni uticaj društvenih mreža na radni učinak nije potvrđen. U radu se ističe važnost društvenih mreža u procesu transfere znanja u organizacijama, sa zaključkom da one imaju ključnu ulogu u poslovnoj komunikaciji i povećavaju transparentnost i brzinu protoka informacija.

Ključne reči: milenijalci, radno mesto, društvene mreže, komunikacija, tehnologija

JEL:M31, M59

Uvod

Poslovanje u savremenim uslovima u najvećoj meri zavisi od tržišnog okruženja (Prdić, 2017). Komuniciranje između ljudi staro je koliko i samo ljudsko društvo. Komuniciranje se, najpre izučavalo u okrilju filozofije, sociologije i psihologije krajem prošlog veka ona postaje centralna tema mnogih društvenih nauka. Širok spektar tema koje se uzimaju u razmatranje, od mikro do makro-komunikacionih sistema, predstavlja bogatstvo, ali i ograničenja u procesu izučavanja načina komuniciranja.

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Komunikacija određuje pravac u kom se naš život kreće jer bez komuniciranja savremeni čovek kao da i ne postoji. Svoje težište usmerili su prema aktivnoj politici tržišta (Mihajlović et al., 2022). U suštini proces komunikacije se svodi na prikupljanje i emitovanje informacija o stanju i tendencijama u okruženju, konkurenciji, ljudima, tako da je pribavljanje i emitovanje informacija postalo jedna od najbitnijih aktivnosti za ostvarivanje različitih ciljeva. Savremeno poslovanje, nesumnjivo je nametnuo potrebu za novim načinom komunikacije na radnim mestima. Proces stalne komunikacije u timu je jedna od bitnih karakteristika timskog rada (Adžić et al., 2022). Pored pametnih mobilnih telefona, SMS, i e-mejl komunikacije, pojavila se potreba za umrežavanjem na poslu u okviru velikih komunikacionih sistema. Marketing na društvenim mrežama definiše se kao process koji pojedincima omogućava da promoviše svoje veb stranice, proizvode ili usluge (Kostić, 2022).

Digitalne tehnologije menjaju ljudske stavove, posebno kada je u pitanju usvajanje novih načina zadovoljavanja ljudskih potreba (Jovanović et al., 2017). E- mejl komunikacija je sporija u odnosu na telefonske pozive. S druge strane, na poslu često ne možemo da razgovaramo u zavisnosti od prirode posla, pored toga nemamo nikakav trag o dogovoru odnosno razgovoru koji smo vodili sa partnerima, kolegama. U prilog ovim manjkavostima, kako telefonske, tako i e-mejl komunikacije ide to da ne znamo kako sagovornik izgleda. Te ukoliko se prvi put obraćamo putem mejl komunikacije obraćamo se sa „poštovani“, jer obično ne znamo ko je naš sagovornik. Telefonska komunikacija sa nepoznatom osobom ume da bude neprijatna i frustrirajuća za obe strane. Sve ove manjkavosti dovele su do toga da se u organizacijama počne primenjivati novi vid komunikacije. To je komunikacija putem društvenih mreža.

Napredak informaciono-komunikacionih tehnologija značajno je uticao da proces razmjene roba od proizvođača do korisnika postane jednostavniji i brži (Babić et al., 2023). Internet marketing kao savremeno sredstvo komunikacije koristi se za promociju radi ostvarivanja profita ili drugih ciljeva na tržiš (Prdić & Kostić, 2021). Zdrava komunikacija na poslu jednako je važna koliko i komunikacija sa prijateljima i porodicom. Prema teorijskim stavovima često su podeljena mišljenja oko osnovnog cilja korporativnog preduzeća (Mihajlović, 2016). Svrha globalizacije je kreiranje slobodnog protoka robe, ljudi, kapitala i ideja (Vladislavljević, 2022). Usled globalizacije i otvaranja različitih privreda, dolazi do pojave globalnih, multinacionalnih kompanija. Uspeh se postiže ako postoje potrebe za postojanjem nekog privrednog subjekta (Prdić, 2023). Inovacioni i komunikacijski procesi su nesporno jedan od najvažnijih elemenata za održavanje konkurentne prednosti (Prdić & Kostić, 2022). Slična je situacija je i u malim i srednjim preduzećima, gde postoji potreba za transparentnim, brzim i profesionalnim vidom komuniciranja. Društvene mreže, odnosno aplikacije za komunikaciju na poslu rešile su problem grešaka koje su se događale u

komunikaciji između zaposlenih, ubrzale su, olakšale i povećale transparentnost komunikacije u organizacijama.

U digitalnim uslovima poslovanja jedan od bitnih faktora je koncept digitalne pismenosti (Kostić, 2022). „Prvo nacionalno istraživanje o poslovnom korišćenju društvenih mreža u Srbiji pokazalo je da kompanije prvenstveno koriste društvene medije za bržu i jednostavniju komunikaciju sa kupcima (57%) i radi povećanja vidljivosti i boljeg pozicioniranja firme, proizvoda ili usluga (48%). Trećina kompanija koristi društvene mreže za pronalaženje novih poslovnih partnera, klijenata i kupaca, a sve češće i za povećanje prodaje i zbog povoljnih mogućnosti oglašavanja.“ (Marketing mreža, 2023).

Prema istraživanju kompanije Kaspersky postoji nekoliko veb aplikacija kojima zaposleni u preduzećima najčešće pristupaju dok rade. To uključuje YouTube, Facebook, Google servise i WhatsApp (Personalmag, 2023). U Internet blogovima, kao saveti za bolju komunikaciju na poslu često se spominju aplikacije kao što su: HipChat, Slack, Skype, Google Hangouts, Teams i drugi (Netokracija, 2023), ali i Instagram, Facebook, Viber i drugih. Zbog sve učestalije i popularnije upotrebe društvenih mreža na poslu. Ovo istraživanje proučava uticaje društvenih mreža na radnom mestu u Republici Srbiji.

Pregled literature

Često se u literaturi poistovećuju termini društvene mreže i umrežavanje. Društvene mreže su veb-aplikacije koje omogućavaju pojedincima odnosno korisnicima da dele međusobno sadržaj u jednom povezanom sistemu (Boyd & Ellison, 2007). Kako se Internet razvijao, paralelno sa njim razvijale su se i društvene mreže i postale su širi pojam od samog „umrežavanja“. Autori definišu društvene mreže kao „internet aplikacije zasnovane na Veb 2.0 koje nude opcije saradivanja i deljenja informacije na mreži.“ (Kaplan & Haenlein, 2010). Upravo je internet omogućio kreiranje aplikacija za prenošenje znanja. Međusobno komuniciranje i razmenjivanje informacija podstiče prenošenje znanja u organizaciji (Choi et al., 2014). U ranijim istraživanjima autori su definisali prenošenje znanja kao „proces razmene znanja između pružalaca znanja i primalaca znanja.“ (Kim et al., 2011). Društvene mreže omogućavaju olakšano deljenje informacija i razmenu ideja u virtuelnom okruženju (Suebsom, 2015). „Društvene mreže su platforme zasnovana na vebu koja omogućavaju zaposlenima (korisnicima) da saopštavaju poruke određenim saradnicima ili emituju poruke svima u organizaciji, uključujući međusobno deljenje datoteka sa informacijama sa bilo kim, i u bilo kom trenutku, unutar njihove organizacije.“ (Leonardi, Huysman, & Steinfield, 2013). Autori koji su u svojim radovima istraživali društvene mreže navode da postoji širok spektar različitih društvenih mreža kao što su mikro blogovi, blogovi, zajednice sadržaja, sajtovi za umrežavanje, virtuelne igre i različiti virtuelni društveni svetovi (Kaplan, 2012;

Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). U ranijim istraživanjima društvene mreže su posmatrane kao deo organizacione kulture za postizanje maksimalnog učinka zaposlenih i kompanije (Shaqiri, 2015; Baloh & Trkman, 2003; Anderson, 2012; Cao, Guo, Vogel, & Zhang, 2016; Trainor, Andzulis, Rapp, & Agnihotr, 2013). Društveni mreže su interaktivne, svoju primenu nalaze u oblasti upravljanja transferom znanja, takođe se mogu koristiti kao komunikacioni alat gde se zaposleni unutar organizacije mogu uključiti u deljenje znanja (Jones, 2009). Istraživanje uticaja društvenih mreža na zadovoljstvo poslom, pokazalo se da društvene mreže nemaju jak uticaj na radni učinak zaposlenih, ali je taj uticaj svakako značajan i složen (Taboroši et al., 2022). Zaposleni u velikim organizacijama se ne poznaju dobro, profili na komunikacionom kanalu, odnosno društvenim mrežama koje se koriste u firmama olakšavaju započinjanje razgovora i održavanje interakcije između zaposlenih. Ujedno, društvene mreže služe kao sredstvo za rešavanje nedoumica, sticanje informacija i znanja od kolega (Ellison, Steinfield & Lampe, 2011). Autori takođe definišu društvene mreže u organizacijama kao „platforme zasnovane na webu koje omogućavaju radnicima da komuniciraju sa određenim saradnicima ili emituju poruke svima u organizaciji, one eksplicitno ukazuju ili implicitno otkrivaju određene saradnike kao partnere u komunikaciji, u njima se može objavljivati, uređivati i sortirati tekst i datoteke povezane sa njima ili drugima.“ (Leonardi & Meyer, 2015) Sa tim u vezi, mogu se pregledati poruke, linkovi, tekst i datoteke koje je bilo ko drugi saopšti, objavi, uredi i sortira u organizaciji u bilo kom trenutku.“ (Leonardi & Meyer, 2015). Raniji autori utvrdili su da društvene mreže imaju pozitivan i značajan uticaj na prenošenje znanja (Marbun et al., 2020). Na poslu, zaposleni u kolektivu istovremeno stiču, ali i pružaju znanja, ovim se obezbeđuje dvosmerno podsticanje znanja (He and Wei, 2009; Soda et al., 2019). Neformalna komunikacija putem onlajn mreža podstiče deljenje znanja, a efekti se multiplikuju kada su pojedinci članovi više različitih zajednica sa različitim informacijama odnosno bazama znanja (Choi et al., 2014). Komunikacija putem poslovnih društvenih mreža omogućava zaposlenima u organizacijama da rade timski. Takođe omogućava organizacijama da lakše traže i usklađuju postojeće veštine sa strateškim ciljevima (Choi et al., 2014). Ranije istraživanje je pokazalo značaj strategije usmeravanje zaposlenih na korišćenje novih kanala komunikacije gde je komunikacija transparentna, nego edukacija zaposlenih da dele svoje znanje sa kolegama (Leonardi, 2014). Društvene mreže su postale sastavni deo svakodnevnog života, one su značajno promenile način na koji ljudi dele znanje i iskustva (Chang and Chuang, 2011). U naučnoj literaturi istraživano je korišćenje društvenih mreža i interneta na radnom mestu u cilju širenja znanja. Autori su istraživali determinante koje utiču na prenošenje i deljenje znanja putem društvenih mreža, kao i razloge i prepreke u aktivnom učestvovanju zaposlenih u to procesu, u velikim multinacionalnim kompanijama. Razlozi koje su istražili ogledaju se u njihovoj prošlosti, očekivanom ishodu, percipiranoj podršci organizacije, ali i u poverenju (Paroutis & Sale, 2009).

Aplikacije društvenih mreža kao što su Fejsbuk, blogovi i drugi pojačali su želju pojedinaca za znanjem. Na društvenim mrežama pojedinci mogu postići lične, organizacione ciljeve, pružaju povezivanje sa pojedincima bez obzira na geografske granice (Ellison et al, 2015). Pojedini autori dali su neformalni oblik upravljanja znanjem zasnovan da savremenim tehnologijama poput društvenih mreža. Karakteristike ovih komunikacionih kanala ogledaju se u javnom deljenju sadržaja, evaluaciji i „push“ prirodi (Dumbrell & Steele, 2014). Rezultati ranijih autora pokazuju vezu između potrebe za razmenom znanja i njegovog značaja sa jedne strane i uočene korisnosti društvenih mreža za razmenu znanja sa druge strane. Sa tim u vezi ova veza utiče na nameru korišćenja društvenih mreža nakon njihove implementacije kao komunikacionog kanala (Behringer & Sassenberg, 2015). Autori drugog istraživanja, naglašavaju da je potrebo pomeriti tačku gledišta sa mikro i makro nivoa poput pojedinaca ili organizacije, na mezo nivo koji se odnosi na kreiranje i upravljanje kreativnim društvenim mrežama. Društvene mreže služe za širenje mišljenja i informacija sa drugima, ali i kreiranje novog znanja koje dodatno obogaćuje i širi vidike pojedinaca u organizaciji i time podstiče stvaranje novih ideja u organizaciji (Sigalaa & Chalkiti, 2015). Na osnovu prethodnih istraživanja, a posebno oslanjajući se na rad Cao i saradnika (2016) razvijen je model prikazan na Slici 1.

Model je sačinjen od 4 konstrukata: upotrebe društvenih mreža, deljenja znanja i radnog učinka kao zavisne varijable, iskustvo u upotrebi društvenih mreža predstavlja kontrolnu varijablu. U daljem tekstu SM označava upotrebe društvenih mreža; KT deljenje znanja; WP radni učinak, dok ESM iskustvo u upotrebi društvenih mreža.

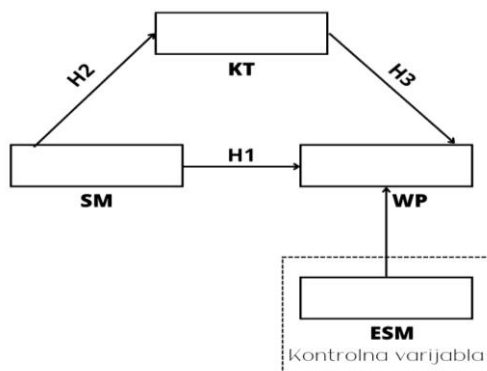
U skladu sa tim modelom postavljeno je tri hipoteze. One glase:

H1: Upotreba društvenih mreža na radnom mestu ima pozitivan uticaj na radni učinak.

H2: Upotreba društvenih mreža na radnom mestu ima pozitivan uticaj na deljenje znanja sa kolegama.

H3: Deljenje znanja sa kolegama ima pozitivan uticaj na radni učinak.

Slika 1. Prikaz istraživačkog modela



Izvor: autor.

Napomena: SM- upotreba društvenih mreža na poslu; KT- deljenje znanja; WP- radni učinak; ESM- Iskustvo na društvenim mrežama.

Metodologija

Početkom februara meseca 2023. godine, sprovedeno je istraživanje sa ciljem analize uticaja društvenih mreža na radnom mestu milenijalaca. Anketiranje je izvršeno u periodu od februara do aprila meseca.

Uzorak je stratifikovan na način da ga čine milenijalci, osobe koje su rođene između 1981. i 1996. godine (Pew Research Centre, 2019). Uzorak čini 183 ispitanika. Instrument za prikupljanje podataka korišćen je strukturisan elektronski anketni upitnik. Prikupljanje ispitanika obavljeno je putem različitih komunikacionih kanala i društvenih mreža. Struktura upitnika prikazana je u Tabeli 1. i 2. Za jednostavno popunjavanje upitnika korišćen je alat Google Forms. Prilikom merenja komponenti upotrebe društvenih mreža, deljenje znanja, radni učinak i kontrolnu varijablu iskustvo na društvenim mrežama korišćene su stavke prikazane u Tabeli 2.

Svaka stavka je ocenjivana na Likertovoj od 1 do 5 gde je 1- u potpunosti se ne slažem, dok je 5- u potpunosti se slažem. Za analizu podataka, koji se odnose na komponente upotreba društvenih mreža, deljenje znanja, radni učinak i iskustvo na društvenim mrežama, prikupljenih putem anketnog upitnika korišćen je statistički softver SmartPLS 3.0. Prilikom testiranja modela korišćene su preporuke više autora (Hair, Sarstedt, Ringle, & Mena, 2011; Grubor i Milićević, 2019). Prilikom analize socio-demografskih karakteristika 41,5% ispitanika čine muškarci, dok 56,5% čine ispitanici lepšeg pola. Prosečna starost ispitanika je nešto viša od 27 i po godina, Više od polovine 55,7% ispitanika ima završen master ili magistarske studije. 76% ispitanika ima radni staž između 1 i 5 godina.

Tabela 1. Opis stratifikovanog uzorka

Pol ispitanika:			
muški		ženski	
41,5%		56,5%	
Obrazovanje:			
srednja škola	fakultet/ visoka škola	master/ magistar	postdiplomske studije
7,7%	36,1%	55,7%	0,5%
Radno iskustvo:			
manje od 1 godine	1-5 godina	6-10 godina	više od 10 godina
4,4%	76%	9,8%	9,8%
Godine starosti:			
srednja vrednost		standardna devijacija	
27,67		2,592	

Izvor: proračun autora.

Tabela 2. Indikatori za merenje konstrukata

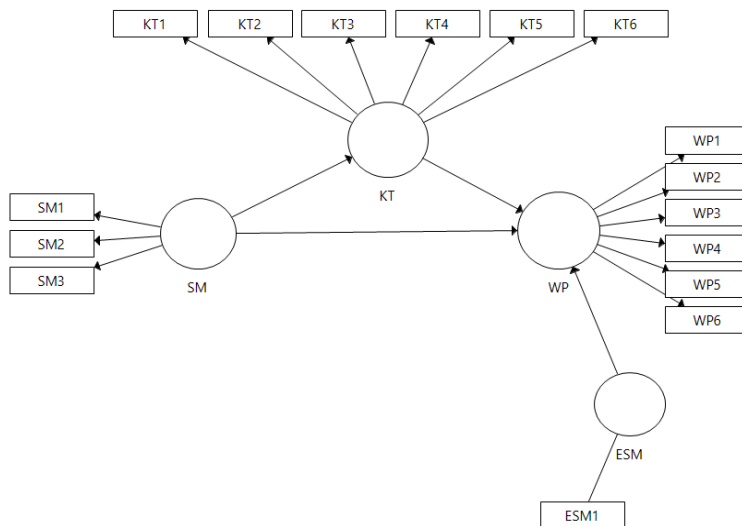
Upotreba društvenih mreža na poslu	SM1	Česta upotreba društvenih mreža za dobijanje informacija i znanja koje je potrebno za obavljanje posla
	SM2	Redovna upotreba društvenih mreža za održavanje i jačanje komunikacije sa kolegama na poslu
	SM3	Učestalost upotrebe društvenih mreža na poslu
Deljenje znanja	KT1	Sticanje teorijskog znanja o različitim tehnologijama od svojih kolega/saradnika putem društvenih mreža
	KT2	Učenje biznis trikove od kolega/saradnika putem društvenih mreža
	KT3	Sticanje teorijskog znanja o menadžerskim tehnikama od kolega/saradnika putem društvenih mreža
	KT4	Sticanje praktičnog znanja o poslu od svojih kolega/saradnika putem društvenih mreža
	KT5	Sticanje praktičnog znanja od kolega/saradnika o korporativnoj kulturi putem društvenih mreža
	KT6	Sticanje praktičnog znanje o menadžerskim tehnikama od kolega/ saradnika putem društvenih mreža.

Radni učinak	WP1	Skoro uvek objavljam svoje zadatke bolje od prihvatljivog nivoa
	WP2	Često radim bolje nego što se od mene očekuje
	WP3	Često ulažem dodatni napor u svom poslu
	WP4	Namerno ulažem mnogo truda u izvršenje svog posla
	WP5	Trudim se da radim što je više moguće
	WP6	Kvalitet mog rada je vrhunski
Iskustvo na društvenim mrežama	ESM	Koliko dugo učiš, deliš mišljenje i znanje putem društvenih mreža

Izvor: Cao et al., (2016);

Strukturalni model kojim su obuhvaćeni pomenuti konstrukti prikazan je na Slici 2. Kako su sve tri komponente upotreba društvenih mreža, deljenje znanja, radni učinak predstavljene kao reflektivni konstrukti izvršena su testiranja putem merenja pouzdanosti indikatora (pokazatelja opterećenja; Outer Loadings). Svaki indikator bi trebalo biti jednak ili veći od 0,7. Testiranje interne konzistentnosti i konvergentne validnosti vrši se merenjem vrednosti kompozitne pouzdanosti (Composite Reliability) za svaki konstrukt, gde bi vrednost trebala biti veća od 0,7. Vrednost izdvojene varijanse (Average Variance Extracted - AVE) za svaki konstrukt bi trebala biti veća od 0,5. Diskriminantna validnosti proverena je putem HTMT (Heterotrait-Monotrait) odnosa korelacija. Analiza multikolinerarnosti testirana je putem faktora inflacije varijanse (engl. Variance Inflation Factor - VIF) za svaki indikator bi trebala da bude manja od 5, ali ne manja od 0,2. Multikolinearnost je problem koji se javlja kod regresione analize kada postoji visoka korelacija barem jedne nezavisne varijable sa drugim nezavisnim varijablama. (Hair et al., 2011; Grubor i Milićević, 2019).

Slika 2. Prikaz strukturalnog modela latentnih konstrukata



Izvor: autor.

Napomena: SM- upotreba društvenih mreža na poslu; KT- deljenje znanja; WP- radni učinak; ESM- Iskustvo na društvenim mrežama.

Rezultati istraživanja

U skladu sa ranije predstavjenim kriterijumima za procenu rezultata strukturalnih modela, a shodno činjenici da je u istraživanju korišćen strukturalni model latentnih promenljivih, u nastavku će biti testirani konstrukti modela merenjem: pouzdanosti indikatora, interne konzistentnosti, konvergentne validnosti, te diskriminante validnosti latentnih konstrukata kao i analiza multikolinearnosti. Koeficijent determinacije (R-Square) iznosi 0,418.

Tabela 4. Pokazatelji opterećenja (Outer Loadings) strukturalnog modela

Indikator	ESM	KT	SM	WP
ESM1	1			
KT1		0,842		
KT2		0,917		
KT3		0,901		
KT4		0,944		
KT5		0,940		

KT6		0,939		
SM1			0,914	
SM2			0,887	
SM3			0,945	
WP1				0,610
WP2				0,805
WP3				0,839
WP4				0,793
WP5				0,792
WP6				0,808

Izvor: proračun autora.

Napomena: SM- upotreba društvenih mreža na poslu; KT- deljenje znanja; WP- radni učinak; ESM- Iskustvo na društvenim mrežama.

U Tabeli 4 predstavljene su vrednosti (Outer Loadings) pokazatelja opterećenja za komponente upotrebe društvenih mreža, deljenje znanja, radni učinak i kontrolnu varijablu iskustvo na društvenim mrežama. Pojedini autori (Hair et al., 2011; Grubor i Milićević, 2019) navode da bi pomenuti kriterijum trebalo da bude jednak ili veći od 0,7. Međutim, kod indikatora WP1 njegova vrednost iznosi 0,610. Kriterijum za pouzdanost je snižen na 0,6, to je učinjeno u skladu istraživanjem autora Bagozzi i Yi (1988). Zbog snižavanja kriterijuma pokazatelja opterećenja navedeni indikator je zadržan budući da se za minimalni nivo kriterijuma može koristiti vrednost 0,6. Nakon testiranja pouzdanosti indikatora latentnih konstrukata, sledi testiranje interne konzistentnosti konstrukata pomoću pokazatelja kompozitne pouzdanosti (Composite Reliability), i testiranje konvergentne validnosti konstrukata pomoću pokazatelj prosečne vrednosti izdvojene varijanse (Average Variance Extracted - AVE).

Tabela 5. Merenje interne konzistentnosti i konvergentne validnosti latentnih konstrukata (Construct Reliability and Validity)

Konstrukti	CR	AVE
ESM	1	1
KT	0,968	0,836
SM	0,939	0,838

Konstrukti	CR	AVE
WP	0,901	0,606

Izvor: proračun autora.

Napomena: CR- Composite Reliability; AVE- Average Variance Extracted.

Prema rezultatima prikazanim u tabeli 5, svi konstrukti ispunjavaju kriterijume interne konzistentnosti (CR za svaki konstrukt je veći od 0,7) i konvergentne validnosti (AVE za svaki konstrukt veće od 0,5). Nakon testiranja interne konzistentnosti i konvergentne validnosti konstrukata sledi ispitivanje jedinstvenosti svakog latentnog konstrukta u odnosu na ostale latentne konstrukte u strukturnom modelu putem provere diskriminantne validnosti.

Tabela 6. Merenje diskriminantne validnosti latentnih konstrukata modela (Discriminant Validity) - „HTMT“ kriterijum

Indikator	ESM	KT	SM	WP
ESM				
KT	0,426			
SM	0,556	0,839		
WP	0,391	0,684	0,582	

Izvor: proračun autora.

Napomena: SM- upotreba društvenih mreža na poslu; KT- deljenje znanja; WP- radni učinak; ESM- Iskustvo na društvenim mrežama.

Za tu svrhu primenjen je „HTMT“ kriterijum. Kao što je prikazano u tabeli 6 sve HTMT vrednosti su niže od 0,85 što ukazuje da ne postoji problem diskriminantne validnosti. U Tabeli 7. prikazane su VIF vrednosti. Kako je ona kod sva tri konstrukta manja od 5, može se zaključiti da ne postoji problem multikolinearnosti. U cilju testiranja hipoteza analizirana je statistička značajnost koeficijenta puta („Path Coefficients“) pomoću „Bootstrapping“ postupka. Koeficijenti puta i prateće p- vrednosti su prikazane u sledećoj tabeli. Tabela 8. pokazuje da uticaj društvenih mreža na radni učinak ima koeficijent puta 0,068 što ukazuje na pozitivnu vezu, međutim izračunata p-vrednost ne zadovoljava referentni okvir (0,946) te iz tog razloga hipoteza H1 mora biti odbačena. Uticaj društvenih mreža na radnom mestu ima pozitivnu vezu sa deljenjem znanja, koeficijent puta je 19,247. Sa tim u vezi p-vrednost zadovoljava referentni okvir, dakle hipoteza H2 se prihvata. Uticaj deljenja znanja na radni učinak beleži koeficijent puta 4,813 što ukazuje na pozitivnu vezu, takođe p-vrednost se kreće u referentnom okviru, te se hipoteza H3 prihvata.

Tabela 7. Merenje faktora inflacije varijanse (Variance Inflation Factor - VIF)

Konstrukti	ESM	KT	SM	WP
ESM				1,381
KT				2,606
SM				2,969
WP				

Izvor: proračun autora.

Napomena: SM- upotreba društvenih mreža na poslu; KT- deljenje znanja; WP- radni učinak; ESM- Iskustvo na društvenim mrežama.

Tabela 8. Testiranje hipoteza

Relacije	Koeficijent puta	p-vrednost	Zaključak
SM -> WP	0.068	0,946	H1 odbačena
SM -> KT	19.247	0,000	H2 prihvaćena
KT -> WP	4.813	0,000	H3 prihvaćena

Izvor: proračun autora.

Napomena: SM- upotreba društvenih mreža na poslu; KT- deljenje znanja; WP- radni učinak; ESM- Iskustvo na društvenim mrežama.

Diskusija i zaključna razmatranja

Sprovedenim istraživanjem analiziran je uticaja društvenih mreža na radnom mestu milenijalaca. Posmatranjem značajnosti svih konstrukata ustanovljeno je da je upotreba društvenih mreža ima značajnu i jaku vezu sa deljenjem znanja, sa tim u vezi dokazano je da deljenje znanja ima značajan uticaj na radni učinak, što je dokazano i u radu autora koji su ranije istraživali ovu temu (Cao et al, 2016). U istraživanju nije potvrđen direktan uticaj upotrebe društvenih mreža na radni učinak. Što je suprotno očekivanim rezultatima autora. U ranijem istraživanju zaključeno je da postoje određene povoljne karakteristike povezivanja ljudi i fleksibilnog deljenja znanja izvan granica jedne organizacije (Cao et al, 2016). U literaturi nema mnogo istraživanja koja su obrađivana na ovu temu posebno u Republici Srbiji. Kako su prethodni autori istakli postoje društvene mreže koje nisu direktno povezane sa poslom, ali socialjne karakteristike pomažu zaposlenima da steknu pojedina znanja koja ima mogu biti korisna u poslovnom životu, što na kraju ima uticaj na radni učinak (Cao et al, 2016). Danas zaposleni koriste različite aplikacije koje se temelje na veštačkoj inteligenciji kada

izvršavaju svoje radne zadatke (Benchmark, 2023). Ovaj rad pokazao je da društvene mreže danas, imaju značajno mesto u procesu transfera znanja u organizaciji, ali i van nje. Razlozi za ne potvrđivanje hipoteze H1, može biti da zaposleni u Republici Srbiji, ne smatraju da su aplikacije koje koriste na poslu za komunikaciju i usavršavanje kategorizovane kao društvene mreže. Iz tog razloga ovo predstavlja jedno od većih ograničenja u istraživanju, jer je istraživanje započeto pod pretpostavkom da zaposleni znaju šta su društvene mreže, odnosno komunikacioni kanali koje koriste u organizacijama. Sa tim u vezi, preporuka za naredna istraživanja temelji se na istraživanju konkretnih društvenih mreža koje zaposlenih koriste na random mestu u Republici Srbiji. Sa druge strane, prilikom analize socio-demografski karakteristika, radni staž više od 70% ispitanika nije duži od 5 godina, što implicira da su ispitanici početnici u svom poslu, te da im treba vreme kako bi se navikli na upotrebu društvenih mreža u poslovne svrhe, jer su od starijih generacija slušali drugačije funkcionisanje organizacione kulture, koja se ranije uglavnom temeljila na mail komunikaciji kao primarnoj. Preporuka za naredna istraživanja je analiza konkretnih radnih mesta i upotreba društvenih mreža na njima. Takođe, bilo bi dobro da buduća istraživanja posebnu pažnju obrate na analizu uticaja upotrebe društvenih mreža u javnom sektoru na radni učinak i prilagođavanje drugih generacija upotrebi ovih savremenih poslovnih alata.

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IMPACT OF SOCIAL MEDIA IN THE WORKPLACE AMONG MILLENNIALS

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Abstract

The research focuses on the impact of social media in the workplace among millennials. In the introduction, the importance of communication in modern society and the need for new forms of business communication are emphasized. The advantages and disadvantages of traditional means of communication are presented, leading to the integration of social media into the business environment. The study was conducted by surveying 183 millennials from February to April 2023. Statistical software SmartPLS 3.0 was used for data analysis. The results indicate a positive correlation between the use of social media, knowledge sharing, and job performance. Two out of three hypotheses were confirmed, but direct influence of social media on job performance was not confirmed. The paper highlights the importance of social media in the knowledge transfer process within organizations, concluding that they play a crucial role in business communication, enhancing transparency and the speed of information flow.

Keywords: *millennials, workplace, social media, communication, technology*

Introduction

Business in modern conditions largely depends on the market environment (Prdić, 2017). Communication between people is as old as human society itself. Communication was first studied in the auspices of philosophy, sociology and psychology, and at the end of the last century it became the central topic of many social sciences. The wide range of topics that are taken into consideration, from micro to macro-communication systems, represents a wealth, but also limitations in the process of studying the methods of communication.

Communication determines the direction in which our life moves, because without communication, modern man seems to not exist. They have focused their attention on active market policy (Mihajlović et al., 2022). In essence, the communication process boils down to collecting and broadcasting information about the state and trends in the environment, competition, and people, so that obtaining and broadcasting information has become one of the most important

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activities for achieving various goals. Modern business has undoubtedly imposed the need for a new way of communication in the workplace. The process of constant communication in a team is one of the essential characteristics of teamwork (Adžić et al., 2022). In addition to smartphones, SMS, and e-mail communication, the need for networking at work within large communication systems has emerged. Social media marketing is defined as a process that allows individuals to promote their websites, products, or services (Kostić, 2022).

Digital technologies are changing human attitudes, especially when it comes to adopting new ways of meeting human needs (Jovanović et al., 2017). E-mail communication is slower than phone calls. On the other hand, at work we often cannot talk depending on the nature of the work, and in addition, we have no trace of the agreement or conversation we had with partners and colleagues. In favor of these shortcomings, both telephone and e-mail communication is that we do not know what the interlocutor looks like. So if we are communicating via e-mail for the first time, we address them with "Dear", because we usually do not know who our interlocutor is. Telephone communication with an unknown person can be unpleasant and frustrating for both parties. All these shortcomings have led to the fact that organizations have begun to apply a new form of communication. This is communication via social networks.

The progress of information and communication technologies has significantly influenced the process of exchanging goods from producers to users to become simpler and faster (Babić et al., 2023). Internet marketing as a modern means of communication is used for promotion in order to achieve profit or other goals in the market (Prdić & Kostić, 2021). Healthy communication at work is just as important as communication with friends and family. According to theoretical positions, opinions are often divided about the basic goal of a corporate enterprise (Mihajlović, 2016). The purpose of globalization is to create a free flow of goods, people, capital and ideas (Vladisavljević, 2022). Due to globalization and the opening of different economies, global, multinational companies have emerged. Success is achieved if there is a need for the existence of a business entity (Prdić, 2023). Innovation and communication processes are undoubtedly one of the most important elements for maintaining a competitive advantage (Prdić & Kostić, 2022). In this regard, a need is created for a new form of communication. The situation is similar in small and medium-sized enterprises, where there is a need for a transparent, fast and professional form of communication. Social networks, or applications for communication at work, have solved the problem of errors that occurred in communication between employees, they have accelerated, facilitated and increased the transparency of communication in organizations.

In digital business conditions, one of the important factors is the concept of digital literacy (Kostić, 2022). „The first national survey on the business use of social networks in Serbia showed that companies primarily use social media for faster

and simpler communication with customers (57%) and to increase visibility and better positioning of the company, products or services (48%). A third of companies use social networks to find new business partners, clients and customers, and increasingly to increase sales and because of favorable advertising opportunities.” (Marketing Network, 2023).

According to research by Kaspersky, there are several web applications that employees in companies most often access while working. These include YouTube, Facebook, Google services and WhatsApp (Personalmag, 2023). In Internet blogs, as tips for better communication at work, applications such as: HipChat, Slack, Skype, Google Hangouts, Teams and others are often mentioned (Netokracija, 2023), but also Instagram, Facebook, Viber and others. Due to the increasingly frequent and popular use of social networks at work. This research studies the impact of social networks in the workplace in the Republic of Serbia.

Literature review

The terms social networks and networking are often used interchangeably in the literature. Social networks are web applications that allow individuals or users to share content with each other in a connected system (Boyd & Ellison, 2007). As the Internet developed, social networks also developed in parallel with it and became a broader concept than "networking". The authors define social networks as "Web 2.0-based Internet applications that offer options for collaboration and sharing information online." (Kaplan & Haenlein, 2010). It was the Internet that enabled the creation of applications for knowledge transfer. Mutual communication and exchange of information encourages knowledge transfer in an organization (Choi et al., 2014). In earlier research, the authors defined knowledge transfer as "the process of knowledge exchange between knowledge providers and knowledge recipients." (Kim et al., 2011). Social networks enable the facilitated sharing of information and the exchange of ideas in a virtual environment (Suebsom, 2015). "Social networks are web-based platforms that allow employees (users) to communicate messages to specific associates or broadcast messages to everyone in the organization, including sharing files with anyone, at any time, within their organization." (Leonardi, Huysman, & Steinfield, 2013). Authors who have researched social networks in their works state that there is a wide range of different social networks such as microblogs, blogs, content communities, networking sites, virtual games, and various virtual social worlds (Kaplan, 2012; Kietzmann, Hermkens, McCarthy, & Silvestre, 2011).

In previous research, social networks have been viewed as part of organizational culture for achieving maximum employee and company performance (Shaqiri, 2015; Baloh & Trkman, 2003; Anderson, 2012; Cao, Guo, Vogel, & Zhang, 2016; Trainor, Andzulis, Rapp, & Agnihotr, 2013). Social networks are interactive, find their application in the field of knowledge transfer management, and can also be

used as a communication tool where employees within the organization can engage in knowledge sharing (Jones, 2009). Research into the impact of social networks on job satisfaction has shown that social networks do not have a strong impact on employee performance, but this impact is certainly significant and complex (Taboroši et al., 2022). Employees in large organizations do not know each other well, profiles on the communication channel, i.e. social networks used in companies, make it easier to start conversations and maintain interaction between employees. At the same time, social networks serve as a means of resolving doubts, acquiring information and knowledge from colleagues (Ellison, Steinfield & Lampe, 2011). The authors also define social networks in organizations as “web-based platforms that allow workers to communicate with specific collaborators or broadcast messages to everyone in the organization, they explicitly indicate or implicitly reveal specific collaborators as communication partners, they can publish, edit and sort text and files related to them or others.” (Leonardi & Meyer, 2015) In this regard, messages, links, text and files that anyone else has communicated, published, edited and sorted in the organization can be viewed at any time.” (Leonardi & Meyer, 2015). Previous authors have found that social networks have a positive and significant impact on knowledge transfer (Marbun et al., 2020). At work, employees in a team simultaneously acquire and impart knowledge, thus providing a two-way knowledge-sharing mechanism (He and Wei, 2009; Soda et al., 2019). Informal communication via online networks encourages knowledge sharing, and the effects are multiplied when individuals are members of multiple communities with different information or knowledge bases (Choi et al., 2014). Communication via business social networks enables employees in organizations to work as a team. It also enables organizations to more easily search for and align existing skills with strategic goals (Choi et al., 2014). Previous research has shown the importance of the strategy of directing employees to use new communication channels where communication is transparent, rather than educating employees to share their knowledge with colleagues (Leonardi, 2014). Social networks have become an integral part of everyday life, they have significantly changed the way people share knowledge and experiences (Chang and Chuang, 2011). The use of social networks and the Internet in the workplace for the purpose of spreading knowledge has been investigated in the scientific literature. The authors investigated the determinants that influence the transfer and sharing of knowledge through social networks, as well as the reasons and obstacles to the active participation of employees in this process, in large multinational companies. The reasons they investigated are reflected in their past, expected outcome, perceived support from the organization, but also in trust (Paroutis & Sale, 2009). Social networking applications such as Facebook, blogs and others have increased individuals' desire for knowledge. On social networks, individuals can achieve personal, organizational goals, provide connections with individuals regardless of geographical boundaries (Ellison et al, 2015). Some authors have provided an

informal form of knowledge management based on modern technologies such as social networks. The characteristics of these communication channels are reflected in the public sharing of content, evaluation and "push" nature (Dumbrell & Steele, 2014). The results of previous authors show the connection between the need for knowledge exchange and its importance on the one hand and the perceived usefulness of social networks for knowledge exchange on the other hand. In this regard, this connection influences the intention to use social networks after their implementation as a communication channel (Behringer & Sassenberg, 2015). The authors of another study emphasize the need to shift the point of view from the micro and macro levels, such as individuals or organizations, to the meso level, which refers to the creation and management of creative social networks. Social networks serve to spread opinions and information with others, but also to create new knowledge that further enriches and broadens the horizons of individuals in the organization and thus encourages the creation of new ideas in the organization (Sigalaa & Chalkiti, 2015). Based on previous research, and in particular relying on the work of Cao et al. (2016), the model shown in Figure 1 was developed.

The model consists of 4 constructs: use of social networks, knowledge sharing and work performance as dependent variables, experience in using social networks is a control variable (Savić et al., 2024). In the following text, SM denotes use of social networks; KT knowledge sharing; WP work performance, while ESM experience in using social networks.

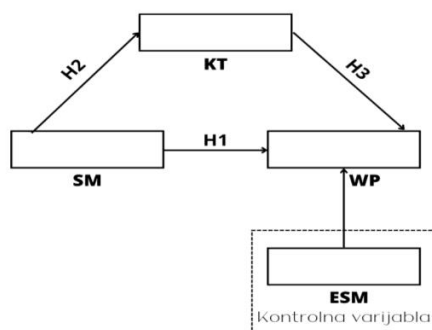
In accordance with this model, three hypotheses were set. They are:

H1: Use of social networks in the workplace has a positive impact on work performance.

H2: Use of social networks in the workplace has a positive impact on sharing knowledge with colleagues.

H3: Sharing knowledge with colleagues has a positive impact on work performance.

Figure 1. Overview of the research model



Source: Prepared by the author

Note: SM- Social Media Use at Work; KT- Knowledge Sharing; WP- Work Performance; ESM- Social Media Experience.

Methodology

In early February 2023, a study was conducted to analyze the impact of social media on the workplace of millennials. The survey was conducted from February to April.

The sample was stratified so that it consisted of millennials, people born between 1981 and 1996 (Pew Research Centre, 2019). The sample consisted of 183 respondents. A structured electronic survey questionnaire was used as the instrument for data collection. Respondents were collected through various communication channels and social networks. The structure of the questionnaire is shown in Tables 1 and 2. The Google Forms tool was used to easily fill out the questionnaire. When measuring the components of social media use, knowledge sharing, work performance and the control variable experience on social networks, the items shown in Table 2 were used.

Each item was rated on a Likert scale from 1 to 5, where 1 is completely disagree, while 5 is completely agree. The SmartPLS 3.0 statistical software was used to analyze data related to the components of social media use, knowledge sharing, work performance, and experience on social media, collected through a survey questionnaire. When testing the model, recommendations from several authors were used (Hair, Sarstedt, Ringle, & Mena, 2011; Grubor and Milićević, 2019). When analyzing socio-demographic characteristics, 41.5% of respondents were men, while 56.5% were women. The average age of respondents was slightly over 27 and a half years, and more than half, 55.7% of respondents, had completed a master's degree or master's degree. 76% of respondents had between 1 and 5 years of work experience.

Table 1. Description of the stratified sample

Sex of respondents:			
Male		Female	
41,5%		56,5%	
Education:			
High school	College/university	Master	Postgraduate studies
7,7%	36,1%	55,7%	0,5%
Work experience:			
Less than 1 year	1-5 years	6-10 years	More than 10 years
4,4%	76%	9,8%	9,8%
Age:			
Mean value		Standard deviation	

Source: Author's calculation

Table 2. Indicators for measuring constructs

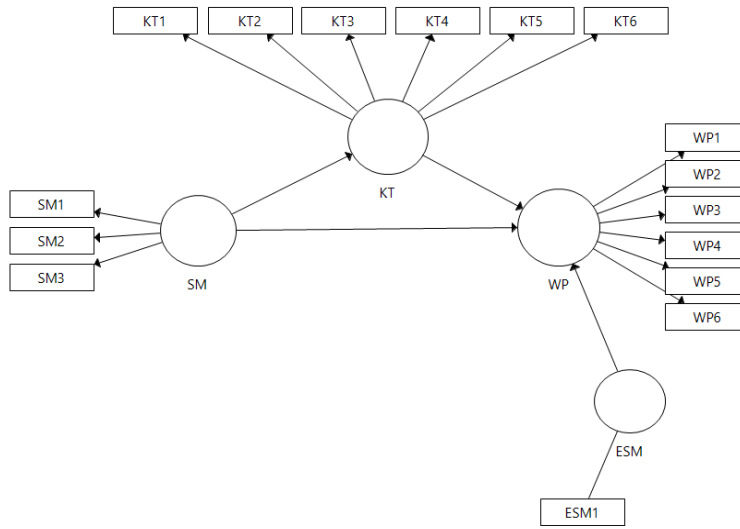
Use of social networks at work	SM1	Frequent use of social networks to obtain information and knowledge needed to perform work
	SM2	Regular use of social networks to maintain and strengthen communication with colleagues at work
	SM3	Frequency of use of social networks at work
Sharing knowledge	KT1	Gaining theoretical knowledge about different technologies from colleagues/associates via social networks
	KT2	Learning business tricks from colleagues/associates via social networks
	KT3	Gaining theoretical knowledge about management techniques from colleagues/associates via social networks
	KT4	Gaining practical knowledge about work from colleagues/associates via social networks
	KT5	Gaining practical knowledge about corporate culture from colleagues/associates via social networks
	KT6	Gaining practical knowledge about management techniques from colleagues/associates via social networks
Work Performance	WP1	I almost always post my assignments better than acceptable
	WP2	I often do better than expected
	WP3	I often put in extra effort in my work
	WP4	I deliberately put in a lot of effort in getting my work done
	WP5	I try to do as much as possible
	WP6	The quality of my work is top-notch
Social Media Experience	ESM	How long have you been learning, sharing opinions and knowledge via social media

Izvor: Cao et al., (2016)

The structural model that includes the aforementioned constructs is shown in Figure 2. Since all three components of social media use, knowledge sharing, and work performance are presented as reflective constructs, testing was performed by measuring the reliability of the indicators (Outer Loadings). Each indicator should be equal to or greater than 0.7. Testing of internal consistency and convergent validity is performed by measuring the value of the composite reliability for each construct, where the value should be greater than 0.7 (Savić & Bonić, 2022). The value of the extracted variance (Average Variance Extracted - AVE) for each construct should be greater than 0.5. Discriminant validity was checked using the HTMT (Heterotrait-Monotrait) correlation ratio. Multicollinearity analysis was tested using the Variance Inflation Factor (VIF) for each indicator, which should

be less than 5, but not less than 0.2. Multicollinearity is a problem that occurs in regression analysis when there is a high correlation of at least one independent variable with other independent variables. (Hair et al., 2011; Grubor and Milićević, 2019).

Figure 2. Presentation of the structural model of latent constructs



Source: Prepared by the author

Note: SM- Social Media Use at Work; KT- Knowledge Sharing; WP- Work Performance; ESM- Social Media Experience.

Research Results

In accordance with the previously presented criteria for evaluating the results of structural models, and due to the fact that the research used a structural model of latent variables, the model constructs will be tested below by measuring: indicator reliability, internal consistency, convergent validity, and discriminant validity of latent constructs, as well as multicollinearity analysis. The coefficient of determination (R-Square) is 0.418.

Table 4. Outer Loadings of the Structural Model

Indicator	ESM	KT	SM	WP
ESM1	1			
KT1		0.842		
KT2		0.917		

KT3		0.901		
KT4		0.944		
KT5		0.940		
KT6		0.939		
SM1			0.914	
SM2			0.887	
SM3			0.945	
WP1				0.610
WP2				0.805
WP3				0.839
WP4				0.793
WP5				0.792
WP6				0.808

Source: Author's calculation

Note:SM- Social Networking at Work; KT- Knowledge Sharing; WP- Work Performance; ESM- Social Networking Experience.

Table 4 presents the values (Outer Loadings) of the loading indicators for the component uses of social networks, knowledge sharing, work performance and the control variable experience on social networks. Some authors (Hair et al., 2011; Grubor and Milićević, 2019) state that the aforementioned criterion should be equal to or greater than 0.7. However, for the WP1 indicator, its value is 0.610. The reliability criterion was lowered to 0.6, this was done in accordance with the research of the authors Bagozzi and Yi (1988). Due to the lowering of the loading indicator criteria, the aforementioned indicator was retained since the value 0.6 can be used for the minimum criterion level. After testing the reliability of the latent construct indicators, the internal consistency of the constructs is tested using the composite reliability indicator (Composite Reliability), and the convergent validity of the constructs is tested using the Average Variance Extracted (AVE) indicator.

Table 5. Measurement of internal consistency and convergent validity of latent constructs (Construct Reliability and Validity)

The construction	CR	AVE
ESM	1	1
KT	0.968	0.836

SM	0.939	0.838
WP	0.901	0.606

Source: Author's calculation

Note: CR- Composite Reliability; AVE- Average Variance Extracted.

According to the results shown in Table 5, all constructs meet the criteria of internal consistency (CR for each construct is greater than 0.7) and convergent validity (AVE for each construct is greater than 0.5). After testing the internal consistency and convergent validity of the constructs, the uniqueness of each latent construct in relation to other latent constructs in the structural model is examined by checking discriminant validity.

Table 6. Measuring discriminant validity of latent constructs of the model (Discriminant Validity) - "HTMT" criterion

Indicator	ESM	KT	SM	WP
ESM				
KT	0.426			
SM	0.556	0.839		
WP	0.391	0.684	0.582	

Source: Author's calculation

Note:SM- use of social networks at work; KT- knowledge sharing; WP- work performance; ESM- Experience on social networks.

For this purpose, the “HTMT” criterion was applied. As shown in Table 6, all HTMT values are lower than 0.85, indicating that there is no problem with discriminant validity. Table 7 shows the VIF values. Since it is less than 5 for all three constructs, it can be concluded that there is no problem with multicollinearity. In order to test the hypotheses, the statistical significance of the path coefficients (“Path Coefficients”) was analyzed using the “Bootstrapping” procedure. The path coefficients and the accompanying p-values are shown in the following table. Table 8 shows that the influence of social networks on work performance has a path coefficient of 0.068, indicating a positive relationship, however, the calculated p-value does not satisfy the reference frame (0.946), and for this reason, hypothesis H1 must be rejected. The influence of social networks in the workplace has a positive relationship with knowledge sharing, the path coefficient is 19.247. In this regard, the p-value satisfies the reference frame, so hypothesis H2 is accepted. The influence of knowledge sharing on work performance records a coefficient of 4.813, which indicates a positive relationship, also the p-value moves within the reference frame, so hypothesis H3 is accepted.

Table 7. Variance Inflation Factor (VIF) measurement

The construction	ESM	KT	SM	WP
ESM				1.381
KT				2.606
SM				2.969
WP				

Source: Author's calculation

Note:SM- use of social networks at work; KT- knowledge sharing; WP- work performance; ESM- Experience on social networks.

Table 8. Hypothesis testing

Relationships	Path coefficient	p-value	Conclusion
SM -> WP	0.068	0.946	H1 rejected
SM -> KT	19.247	0.000	H2 accepted
KT -> WP	4.813	0.000	H3 accepted

Source: Author's calculation

Note:SM- use of social networks at work; KT- knowledge sharing; WP- work performance; ESM- Experience on social networks.

Discussion and concluding remarks

The conducted research analyzed the impact of social networks in the workplace of millennials. By observing the significance of all constructs, it was established that the use of social networks has a significant and strong relationship with knowledge sharing, in this regard it was proven that knowledge sharing has a significant impact on work performance, which was also proven in the work of authors who previously researched this topic (Cao et al, 2016). The research did not confirm the direct impact of the use of social networks on work performance. Which is contrary to the expected results of the authors. In the previous research, it was concluded that there are certain favorable characteristics of connecting people and flexible knowledge sharing beyond the boundaries of an organization (Cao et al, 2016). There is not much research in the literature that has addressed this topic, especially in the Republic of Serbia. As previous authors have pointed out, there are social networks that are not directly related to work, but social characteristics help employees to acquire certain knowledge that can be useful in business life, which ultimately has an impact on work performance (Cao et al, 2016). Today, employees use various applications based on artificial intelligence when performing their work tasks (Benchmark, 2023). This paper has shown that

social networks today have an important place in the process of knowledge transfer within the organization, but also outside it. The reasons for not confirming hypothesis H1 may be that employees in the Republic of Serbia do not consider that the applications they use at work for communication and development are categorized as social networks. For this reason, this represents one of the major limitations of the research, because the research was started under the assumption that employees know what social networks are, that is, the communication channels they use in organizations. In this regard, the recommendation for further research is based on research into specific social networks that employees use at work in the Republic of Serbia. On the other hand, when analyzing socio-demographic characteristics, the work experience of more than 70% of respondents is no longer than 5 years, which implies that the respondents are beginners in their jobs, and that they need time to get used to the use of social networks for business purposes, because they heard from older generations about the different functioning of organizational culture, which was previously mainly based on email communication as the primary one. A recommendation for future research is the analysis of specific workplaces and the use of social networks in them. It would also be good for future research to pay special attention to the analysis of the impact of the use of social networks in the public sector on work performance and the adaptation of other generations to the use of these modern business tools.

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PRAVO NA PRIVATNOST I POSEBNE MERE TAJNOG PRIKUPLJANJA PODATAKA U REPUBLICI SRBIJI

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Apstrakt

Pravo na privatnost predstavlja jedno od osnovnih ljudskih prava pojedinca u demokratskom društvu. Na međunarodnom i regionalnom planu postoje brojni instrumenti koji garantuju pravo na privatnost. Države su dužne da obezbede nesmetano uživanje ovog prava svom stanovništvu. Danas, jedan od najvećih izazova po pravo na privatnost jesu posebne mere tajnog prikupljanja podataka koje stoje na raspolaganju određenim akterima bezbednosno-obaveštajnog sistema i drugim državnim akterima prilikom obavljanja poslova iz njihove nadležnosti. Treba imati u vidu da pravo na privatnost nije apsolutno, te da se zakonom propisuje na koji način ono može biti ograničeno. U Republici Srbiji, derogacija prava na privatnost jeste predmet pojedinih zakona, a posebno onih kojima se reguliše način funkcionisanja bezbednosno-obaveštajnog sistema. Stoga, u radu se analizira normativni okvir koji reguliše posebne mere tajnog prikupljanja podataka koje stoje na raspolaganju različitim akterima bezbednosno-obaveštajnog sistema. Ujedno, predmet analize predstavljaju i normativne odredbe kojima je regulisana kontrola posebnih mera tajnog prikupljanja podataka. Rad teži da ispita negativan uticaj primene posebnih mera na pravo na privatnost, kao i mogućnost unapređenja trenutnog normativnog okvira koji postoji u Republici Srbiji.

Ključne reči: *pravo na privatnost, posebne mere tajnog prikupljanja podataka, bezbednosno-obaveštajni sistem, kontrola*

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Uvod

Uživanje prava na privatnost neophodno je obezbediti pojedincima u demokratskom društvu. Država treba da ima adekvatan normativni okvir koji obezbeđuje uživanje prava na privatnost i koji je smislen i jasan svakom građaninu. Ujedno, država treba da obezbedi i adekvatne institucionalne mehanizme putem kojih pojedinci mogu da se obrate relevantnim institucijama ukoliko smatraju da je njihovo pravo na privatnost na bilo koji način ugroženo. Pravo na privatnost, iako je jedno od fundamentalnih ljudskih prava, nije apsolutno. Moguće je ograničiti uživanje ovog prava pojedincima u određenim situacijama koje bi trebalo biti jasno definisane zakonskim odredbama. Najveći izazov za uživanje prava na privatnost predstavljaju posebne mere tajnog prikupljanja podataka koje različiti državni akteri koriste prilikom vršenja svojih nadležnosti. Kako akteri mogu biti različiti, isto tako su drugačiji i nazivi ovih postupaka i mera u zakonskim rešenjima. Predmet analize jeste normativni okvir koji reguliše primenu posebnih mera tajnog prikupljanja podataka bezbednosno-obaveštajnog sistema Republike Srbije. Međutim, Zakonom o Bezbednosno-informativnoj agenciji i Zakonom o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji ne iscrpljuje se lista postupaka i mera koje pomenuti državni akteri imaju na raspolaganju, te je neophodno dotaći se i Zakonika o krivičnom postupku. Prošlih godina, određene odredbe i delovi trenutnog normativnog okvira Republike Srbije pretrpeli su pojedine modifikacije u cilju njihovog usaglašavanja sa Ustavom. Rad teži da ispita mogućnost unapređenja normativnog okvira kojim se reguliše režim posebnih mera tajnog prikupljanja podataka. Stoga, prvi deo rada posvećen je pravu na privatnost. Drugi deo rada bavi se konkretnim merama tajnog prikupljanja podataka koje akteri bezbednosno-obaveštajnog sistema imaju na raspolaganju. Treći deo rada posvećen je kontroli primene posebnih mera tajnog prikupljanja podataka, a posebno sudskoj kontroli. U četvrtom delu, izloženi su mogući problemi koji se javljaju na relaciji pravo na privatnost – posebne mere tajnog prikupljanja podataka pri čemu rad teži da identifikuje nedostatke koji postoje u trenutnim zakonskim odredbama. Na samom kraju, pored zaključka, biće ponuđen spisak literature i zakona koji su korišćeni za izradu rada.

Pravo na privatnost

Jedno od temeljnih ljudskih prava predstavlja pravo na privatnost. Pravo na privatnost ne odnosi se na jedno konkretno pravo, već obuhvata širok spektar prava i to „pravo na poštovanje privatnog i porodičnog života, pravo na poštovanje nepovredivosti doma, pravo na poštovanje nepovredivosti prepiske, kao i pravo na poštovanje nepovredivosti časti i ugleda“ (Dimitrijević i sar., 2007, str. 203). Na međunarodnom i regionalnom planu, Univerzalna deklaracija o

ljudskim pravima iz 1948. godine, Pakt o građanskim i političkim pravima iz 1966. godine, kao i Evropska konvencija o ljudskim pravima iz 1950. godine, garantuju pravo na privatnost. Na osnovu člana 8 stava 1 Evropske konvencije o ljudskim pravima: „Svako ima pravo na poštovanje svog privatnog i porodičnog života, doma i prepiske“ (European Convention for the Protection of Human Rights and Fundamental Freedoms, 1950). Stavom 2 regulisano je da se: „javne vlasti neće mešati u vršenje ovog prava sem ako to nije u skladu sa zakonom i neophodno u demokratskom društvu u interesu nacionalne bezbednosti, javne bezbednosti ili ekonomske dobrobiti zemlje, radi sprečavanja nereda ili kriminala, zaštite zdravlja ili morala, ili radi zaštite prava i sloboda drugih“ (European Convention on Human Rights, 1950). Iako se na osnovu sadržaja stava 2 čini da su situacije u kojima je moguće ograničiti pravo na privatnost brojne, ipak u praksi države ne mogu tako lako ograničiti pravo na privatnost svojim građanima.

Razmatrajući slučajeve koji se odnose na povredu člana 8. Evropske konvencije o ljudskim pravima, Evropski sud za ljudska prava je u godinama koje usledile ustanovio određene standarde u vezi prava na privatnost. Oni se mogu sumirati na sledeći način: „1) slučajevi mešanja u pravo na privatnost moraju biti zakonom regulisani dovoljno jasno da bi bili predvidivi; 2) takvi slučajevi treba da se urede restriktivno i da budu prevashodno vezani za teška krivična dela i pretnje po bezbednost; 3) procedura za primenu mera propisuje se zakonom, a o primeni mera treba da odlučuje sud ili drugi organ na osnovu postojanja osnovna sumnje; 4) početak i trajanje mere određuje se u odluci suda ili drugog organa, koji i nadziru primenu mere; 5) postupak za zaštitu građana treba da bude propisan zakonom i da obuhvati mogućnost sudske zaštite, a građanin obavešten o meri na svoj zahtev kada to bude moguće; i 6) zakon treba da predvidi sankcije za kršenje pravila o primeni takvih mera“ (Milosavljević, 2015, str. 25). Značaj Evropskog suda za ljudska prava ogleda se upravo u mogućnosti da pojedinac može da se obrati sudu i tuži sopstvenu državu ukoliko smatra da mu je neko od prava zagwarantovanih Evropskom konvencijom o ljudskim pravima uskraćeno ili povređeno.

Pravo na privatnost ne reguliše se samo na međunarodnom i regionalnom planu, već je i predmet ustavnog i zakonskog okvira država. Upravo iz razloga što pravo na privatnost štiti sledeće interese: „a) čovekove interese autonomije odlučivanja u intimnim stvarima; b) interes pojedinca da se zaštiti od otkrivanja ličnih okolnosti; c) interes pojedinca da se obezbedi od neosnovane prisimotre od strane vlasti“ (Dimitrijević, 2011, str. 203). Zaštita poslednjeg interesa predstavlja jedan od danas najčešćih problema na relaciji država – pojedinac. Stoga, može se zaključiti da „država ima dvostruku obavezu: negativnu – da se uzdrži od mešanja u privatnost i pozitivnu – da pruži zaštitu privatnosti pojedinca i obezbedi pravni okvir i zaštitu od napada drugih pojedinaca“ (Dimitrijević i sar., 2007, str. 203). Ustav Republike Srbije, iako ne sadrži konkretnu odredbu o pravu na privatnost, članom 40. garantuje nepovredivost stana, članom 41. tajnost pisama i drugih sredstava opštenja i članom 42. zaštitu podataka o ličnosti. Ujedno, treba imati u

vidu da se Ustavni sud u svojoj odluci 3238/1 iz 2012. godine izjasnio da pravo na privatnost predstavlja sastavni deo ustavnog prava i potpada pod član 23. Ustava, odnosno pod pravo na dostojanstvo i slobodan razvoj ličnosti (Beogradski centar za ljudska prava, 2023, str. 94).

Neizostavni deo prava na privatnost predstavlja i pravo na zaštitu podataka o ličnosti. U Republici Srbiji donet je zakon 2008. godine čime su Povereniku za informacije od javnog značaja pridodata zaduženja i u oblasti zaštite podataka o ličnosti. Međutim, zbog brojnih nedostataka starog zakonskog rešenja, nov zakon je donet tokom 2018. godine. Podatak o ličnosti predstavlja „svaki podatak koji se odnosi na fizičko lice čiji je identitet određen ili odrediv, neposredno ili posredno, posebno na osnovu oznake identiteta, kao što je ime i identifikacioni broj, podataka o lokaciji, identifikatora u elektronskim komunikacionim mrežama ili jednog, odnosno više obeležja njegovog fizičkog, genetskog, metalnog, ekonomskog, kulturnog i društvenog identiteta“ (Zakon o zaštiti podataka o ličnosti, 2018). Pravo na zaštitu podataka o ličnosti i pravo na privatnost mogu biti ozbiljno ugroženi posebnim merama tajnog prikupljanja podataka koje bezbednosno-obaveštajni sistem ima na raspolaganju prilikom obavljanja svojih nadležnosti. Najčešći vidovi mešanja u privatnost građana jesu tajni nadzor i prikupljanje podataka o pojedincima, njihovo čuvanje i objavljivanje (Ignjatović, 2015, str. 10). Iz tog razloga, neophodan je adekvatan normativni okvir koji propisuje posebne mere, način njihovog vršenja, a posebno njihove kontrole. U narednom delu rada predstavljene su zakonske odredbe koje se odnose na posebne mere tajnog prikupljanja podataka Bezbednosno-informativne agencije, Vojnobezbednosne i Vojnoobaveštajne agencije.

Posebne mere tajnog prikupljanja podataka

Posebni postupci i mere predstavljaju „specijalna ovlašćenja bezbednosnih organa i organa krivičnog gonjenja za tajno prikupljanje podataka kojima se izuzetno, na određeno vreme i bez znanja građana, a na osnovu odluke suda i pod uslovima propisanim zakonom, odstupa od pojedinih ustavom zajemčenih individualnih prava“ (Milosavljević, 2015, str. 11). Postoje dve grupe posebnih mera za tajno prikupljanje podataka. Prva grupa obuhvata mere koje ne narušavaju znatno ljudska prava i slobode pojedinca, dok u drugu grupu spadaju mere kojima se privremeno i bez znanja pojedinca narušavaju njegova ljudska prava i slobode, a posebno njegovo pravo na privatnost (Milosavljević, 2008). Posebni postupci i mere ne stoje na raspolaganju samo akterima bezbednosno-obaveštajnog sistema, već i drugim državnim organima poput policije, te je neophodno napraviti distinkciju među njima. Na osnovu cilja prikupljanja podataka, svi posebni postupci i mere se dele u dve grupe: 1) posebni postupci i mere čiji je cilj vođenje krivičnog postupka koje bliže uređuje Zakonik o krivičnom postupku i Zakon o policiji; 2) posebni postupci i mere čiji je cilj preventivno delovanje radi zaštite nacionalne bezbednosti koje bliže uređuju zakoni o bezbednosno-obaveštajnom

sistemu (Milosavljević, 2007, str. 59-60). Iako se za posebne postupke i mere koriste različiti termini u različitim zakonskim rešenjima, posebni postupci i mere koje stoje na raspolaganju organima bezbednosno-obaveštajnog sistema nisu predmet samo Zakona o Bezbednosno-informativnoj agenciji i Zakona o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji, već i Zakonika o krivičnom postupku.

Na osnovu Zakonika o krivičnom postupku, Bezbednosno-informativna agencija i Vojnobezbednosna agencija mogu primenjivati posebne dokazne radnje. Posebne dokazne radnje se primenjuju prema licu za koje postoji osnov sumnje da je učinilo krivično delo ili se priprema za njegovo izvršenje, a to se ne može na drugačiji način otkriti, sprečiti ili dokazati ili bi to izazvalo nesrazmerne teškoće ili veliku opasnosti (Zakonik o krivičnom postupku, 2011, član 161). Zakonik propisuje krivična dela za koja se mogu primeniti posebne dokazne radnje, način postupanja sa prikupljenim materijalom, mogućnost slučajnog nalaza, kao i tajnost podataka. Kao posebne dokazne radnje, Zakonik navodi tajni nadzor komunikacije, tajno praćenje i snimanje, simultane poslove, računarsko pretraživanje podataka, kontrolisanu isporuku i prikriivenog islednika. Pored policije, Bezbednosna-informativna agencija i Vojnobezbednosna agencija mogu sprovođiti tajni nadzor komunikacije, tajno praćenje i snimanje, simultane poslove, kao i računarsko pretraživanje podataka. Na osnovu teksta Zakonika, kontrolisanu isporuku sprovodi policija, kao i drugi državni organi koje odredi javni tužilac čime ova odredba ostavlja prostor i za aktere bezbednosno-obaveštajnog sistema. Prikriiveni islednik može biti ovlašćeno lice policije, Bezbednosno-informativne agencije, kao i Vojnobezbednosne agencije. Zakonik o krivičnom postupku bliže uređuje svaku od posebnih dokaznih radnji odnosno uslove za sprovođenje, instancu koja donosi naredbu, tok sprovođenja, mogućnost proširenja, kao i potrebu dostavljanja izveštaja i prikupljenih materijala.

Zakonom o Bezbednosno-informativnoj agenciji bliže se uređuje način rada, organizacija, kontrola i druga pitanja vezana za Bezbednosno-informativnu agenciju. Agencija može da primenjuje operativne metode, mere i radnje, kao i odgovarajuća operativno-tehnička sredstva prilikom obavljanja poslova iz svoje nadležnosti (Zakon o Bezbednosno-obaveštajnoj agenciji, 2002, član 9). Posebne mere koje Bezbednosno-informativna agencija ima na raspolaganju su: tajni nadzor i snimanje komunikacije bez obzira na oblik i tehnička sredstva preko kojih se obavlja ili nadzor elektronske ili druge adrese; tajni nadzor i snimanje komunikacije na javnim mestima i mestima kojima je pristup ograničen ili u prostorijama; statistički elektronski nadzor komunikacije i informacionih sistema u cilju pribavljanja podataka o komunikaciji ili lokaciji korišćene mobilne terminalne opreme; računarsko pretraživanje već obrađenih ličnih i drugih podataka i njihovo upoređivanje sa podacima koji su prikupljeni primenom drugih posebnih mera (Zakon o Bezbednosno-informativnoj agenciji, 2002, član 13). Posebne mere se primenjuju kada postoji osnov sumnje da određeno lice, grupa ili

organizacija priprema ili preduzima radnje usmerene protiv bezbednosti države, a to se ne bi moglo na drugačiji način sprečiti ili dokazati ili bi izazvalo nesrazmerne teškoće ili veliku opasnost (Zakon o Bezbednosno-informativnoj agenciji, 2002, član 14). Kada se odlučuje o primeni posebnih mera posebno se razmatra da li bi isti rezultat mogao da se postigne na način kojim se manje ograničavaju ljudska prava, u obimu koji je neophodan da se svrha ograničavanja zadovolji u demokratskom društvu (Zakon o Bezbednosno-informativnoj agenciji, 2002, član 14). Direktor Bezbednosno-informativne agencije podnosi predlog o kome odlučuje predsednik Višeg suda u Beogradu, odnosno sudija kog on odredi među sudijama koji su raspoređeni u Posebno odeljenje koje postupa u predmetima teških krivičnih dela, pri čemu je odluku neophodno doneti u roku od 48 sati. Posebna mera može trajati tri meseca, a može se produžiti najviše tri puta po tri meseca. Na osnovu člana 15b, Bezbednosno-informativna agencija ima mogućnost proširenja primene posebnih mera.

Posebni postupci i mere za tajno prikupljanje podataka koje Vojnobezbednosna agencija ima na raspolaganju jesu: operativni prodor u organizacije, grupe i institucije; tajno pribavljanje i otkup dokumenata i predmeta; tajni uvid u evidencije podataka; tajno praćenje i nadzor lica na otvorenom prostoru i javnim mestima uz korišćenje tehničkih sredstava; tajni elektronski nadzor telekomunikacija i informacionih sistema radi prikupljanja zadržanih podataka o telekomunikacionom saobraćaju, bez uvida u njihov sadržaj; tajno snimanje i dokumentovanje razgovora na otvorenom i u zatvorenom prostoru uz korišćenje tehničkih sredstava; tajni nadzor sadržine pisama i drugih sredstava komuniciranja, uključujući i tajni elektronski nadzor sadržaja telekomunikacija i informacionih sistema; tajni nadzor i snimanje unutrašnjosti objekata, zatvorenih prostora i predmeta (Zakon o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji, 2009, član 12). O primeni prve četiri mere odlučuje direktor agencije ili lice koje on ovlasti i one se primenjuju dok postoje razlozi za njihovu primenu. O primeni pete mere odlučuje nadležni Viši sud u roku od 8 sati. O primeni šeste, sedme i osme mere odlučuje Vrhovni kasacioni sud u roku od 24 sata. Trajanje primene ostalih mera je šest meseci uz mogućnost produženja još šest. Posebni postupci i mere za tajno prikupljanje podataka koje Vojnoobaveštajna agencija ima na raspolaganju su: tajna saradnja radi prikupljanja podataka; tajno pribavljanje i otkup dokumenata i predmeta; operativni prodor u organizacije, institucije i grupe; preduzimanje mera na prikrivanju identiteta i svojine; osnivanje pravnih lica; prikriveno korišćenje imovine i usluga uz naknadu; korišćenje posebnih dokumenata i sredstava kojima se štiti agencija, njeni pripadnici, prostorije i sredstva. (Zakon o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji, 2009, član 27). Navedeni postupci i mere se preduzimaju na osnovu odluke direktora agencije ili lica koje on ovlasti.

Kontrola primene posebnih mera

Svrha kontrole bezbednosno-obaveštajnog sistema jeste u utvrđivanju da li bezbednosno-obaveštajni sistem postupa u skladu sa zakonom, poštujući zagarantovana ljudska prava uz obezbeđivanje najveće moguće efikasnosti sistema (Born, 2007, p. 163). Kontrolori bezbednosno-obaveštajnog sistema su brojni. Prevažadno, kontrolu vrše tri grane vlasti. Iako bezbednosno-obaveštajni sistem predstavlja deo izvršne vlasti, Vlada je jedna od instanci kontrole. Kontrola koju sprovodi Narodna skupština ispoljava se u više vidova pri čemu je rad Odbora za kontrolu službi bezbednosti najznačajniji. Sudska kontrola se ogleda u odobravanju primene posebnih mera za tajno prikupljanje podataka. Ujedno, kontrolu sprovode i nezavisne državne institucije od kojih su najznačajnije Zaštitnik građana, Poverenik za informacije od javnog značaja i zaštitu podataka o ličnosti i Državna revizorska institucija. Kontrolnu funkciju mogu vršiti i civilno društvo, javnost i mediji. Štaviše, u okviru samih bezbednosno-obaveštajnih službi postoje i tela koju su zadužena za unutrašnju kontrolu koja su zapravo „prva brana od nezakonitog i nepravilnog postupanja službi bezbednosti“ (Petrović, 2020v, str. 63).

Postoje dva cilja zbog kojih akteri bezbednosno-obaveštajnog sistema mogu koristiti posebne mere za tajno prikupljanje podataka kojima se zadiru u ljudska prava i slobode. Prvi je otkrivanje, istraživanje i dokumentovanje teških krivičnih dela, a drugi je preventivno delovanje (Petrović, 2020b, str. 21). Na prve se primenjuje Zakonik o krivičnom postupku kojim sudovi imaju mnogo veću kontrolnu funkciju, a na druge Zakon o BIA i Zakon o VBA i VOA prilikom čega se uloga suda svodi samo na davanje saglasnosti (Petrović, 2020b, str. 68). Na osnovu Zakonika o krivičnom postupku, sud donosi odluku o tome da li su ispunjeni uslovi za primenu određene posebne dokazne radnje. Prilikom njenog sprovođenja, akter koji je sprovodi mora da dostavlja dnevne izveštaje zajedno sa materijalom koji je prikupljen. Ujedno, nakon okončanja primene posebne dokazne radnje, akter koji je sprovodio posebnu dokaznu radnju mora da dostavi i poseban izveštaj, kao i sav prikupljeni materijal. Sa druge strane, prema Zakonu o Bezbednosno-informativnoj agenciji i Zakonu o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji, prikupljeni podaci primenom neke od posebnih mera predstavljaju tajne podatke. Stoga, sudska kontrola prema Zakoniku o krivičnom postupku obuhvata sve tri faze kontrole odnosno pre, tokom i nakon okončanja mera i time je sveobuhvatnija u odnosu na sudsku kontrolu koju predviđaju zakoni o bezbednosno-obaveštajnim službama jer je svode samo na prvu fazu (Petrović, 2015, str. 39).

Trenutni normativni okvir koji reguliše primenu posebnih mera za tajno prikupljanje podataka u Republici Srbiji proteklih godina pretrpeo je određene modifikacije (Milošević i Putnik, 2017). Tokom 2013. godine, Ustavni sud se bavio odredbama Zakona o elektronskim komunikacijama na osnovu kojih su operateri bili u obavezi da dostavljaju podatke o elektronskim komunikacijama u skladu sa zakonima kojima se uređuje krivični postupak, rad bezbednosno-

obaveštajnog sistema i policije (Odluka Ustavnog suda RS, br. predmeta IUz-1245/2010). S obzirom da su Ustavom propisana određena ograničenja tajnosti pisama i drugih sredstava opštenja, ta ograničenja ne mogu biti predmet različitih zakonskih rešenja. Ustavni sud je zaključio da ovakve odredbe nisu u skladu sa Ustavom, čime su one kasnije izmenjene. Tokom kasnijih godina, određene odredbe Zakona o Bezbednosno-informativnoj agenciji i Zakona o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji bile su predmet razmatranja Ustavnog suda. Pozivajući se na i u ovom slučaju na tajnost pisama i drugih sredstava opštenja odnosno pravo koje je zagarantovano samim Ustavom, Ustavni sud je odlučio da nije moguće da direktor vojne agencije određuje primenu posebne mere tajnog elektronskog nadzora bez odobrenja sudske instance (Odluka Ustavnog suda RS, IUz -1218/2010). Rezultat ovakve odluke Ustavnog suda bila je kasnija modifikacija zakonske odredbe u pravcu da na predlog direktora Vojnobezbednosne agencije tajni elektronski nadzor odobrava viši sud. Kako bi se zaštitila ljudska i manjinska prava, modifikovani su i članovi 13., 14. i 15. Zakona o Bezbednosno informativnoj agenciji. Ranije odredbe ovog zakona nisu predviđale kriterijume na osnovu kojih bi se odredilo lice prema kome se primenjuju posebne mere, nije navedeno šta sve mogu podrazumevati posebne mere i na šta se one odnose, čime je zakon nejasan i nedovoljno precizan, te je podložan proizvoljnom tumačenju (Odluka Ustavnog suda PS, br. predmeta IUz-252/2002). Iako je došlo do modifikacije ovih članova i njihovog preciziranja, određene odredbe Zakona o Bezbednosno-informativnoj agenciji su i danas predmet kritika. Dosadašnje zakonske modifikacije izvršene su kako bi se zaštitilo pravo na privatnost građana prilikom primene posebnih mera tajnog prikupljanja podataka. Međutim, neophodno je analizirati da li je pravo na privatnost na adekvatni način zagarantovano postojećim normativnim okvirom. U narednom delu rada predstavljeni su mogući problemi u vezi sa primenom posebnih mera, kao i potreba izmene pojedinih zakonskih rešenja.

Mogući problemi u vezi primene posebnih mera

U Republici Srbiji, pravo na privatnost je zagarantovano Ustavom. I drugi pravni akti na posredan ili neposredan način teže da zaštite pravo na privatnost građana. Krivičnim zakonikom Republike Srbije predviđene su kazne za narušavanje nepovredivosti stana (član 139), protivzakonito pretresanje (član 140), povreda tajnosti pisma i drugih pošiljki (član 142), neovlašćeno prisluškivanje i snimanje (član 143), neovlašćeno fotografisanje (član 144), neovlašćeno prikupljanje ličnih podataka (član 146). Posebne mere tajnog prikupljanja podataka koje stoje na raspolaganju akterima bezbednosno-obaveštajnog sistema ozbiljno mogu da ugroze pravo na privatnost. Stoga, neophodno je razmisliti o načinu unapređenja trenutnog normativnog okvira kojima se reguliše način primene posebnih mera za tajno prikupljanje podataka. Problematične su odredbe zakona na osnovu kojih Bezbednosno-informativna agencija, Vojnobezbednosna agencija i policija mogu

da prošire primenu mera i na druga lica i sredstva komunikacije, jer kako bi pravo na privatnost zaista bilo zagantovano neophodno je da se mere primenjuju prema tačno određenom licu i prema tačno određenim sredstvima komunikacije (Bećirović, 2017, str. 168). Navedeno „negativno utiče na buduće slučajeve tajnog nadzora komunikacije, jer se ne razvijaju mehanizmi za kritičko i objektivno razlikovanje nepotrebnog primenjivanja posebnih dokaznih radnji, čemu bi i te kako doprinelo učešće lica o čijoj privatnosti je reč u celoj proceduri“ (Kovačević, 2014, str. 178).

Zakon o Bezbednosno-informativnoj agenciji čini se da na nedovoljno jasan način definiše operativne metode, mere, radnje i operativno-tehnička sredstva koje Bezbednosno-informativna agencija može primeniti prilikom obavljanja poslova (Petrović, 2020v, str. 118). Ujedno, neophodno je detaljno definisati šta sve može podrazumevati „osnov sumnje“, prema kome, u kojim slučajevima i za koje pretnje se primenjuju posebne mere i uvesti obavezu da se obaveste lica koja su bila na merama, omogućiti im uvid u prikupljene podatke i regulisati način njihovog uništenja (Maričić i Živković, 2022, str. 6-7). U uporednoj perspektivi sa Zakonom koji reguliše rad vojnih agencija, Zakon o Bezbednosno-informativnoj agenciji je dosta kraći te se stiče utisak da u njemu postoji dosta pravnih praznina. Primena posebnih mera za tajno prikupljanje podataka zaista ozbiljno može da ugrozi privatnost građana jer u ove mere spadaju svi „oni načini prikupljanja podataka koji omogućavaju da se bez znanja osoba, grupa i/ili organizacija koji su predmet istrage prikupljaju podaci o njima“ (Petrović, 2020b, str. 23). Na osnovu zakona kojima se reguliše rad bezbednosno-obaveštajnog sistema, svi prikupljeni podaci primenom posebnih mera predstavljaju tajne podatke čime se zapravo „ograničava i pravo građanina na pravni lek“ (Bećirović, 2017, str. 170). Neophodno je zakonom urediti veću sudsku kontrolnu funkciju kako je to regulisano Zakonikom o krivičnom postupku. Posebne mere potrebno je dodatno regulisati na način da se u zakonodavstvu predvide kazne za njihovu nezakonitu i nepravilnu primenu i predvidi vremenski rok nakon čijeg isteka bi pojedinac bio obavešten da je bio predmet posebnih mera (Petrović, 2020v, str. 57-58). Ujedno, neophodno je definisati i šta se dešava sa prikupljenim materijalom.

Tajni nadzor predstavlja „nadgledanje i snimanje pojedinca, upotrebu skrivenih prislušnih uređaja i presretanje komunikacija“ (Ignjatović, 2015, str. 10). Kada je u pitanju nadzor i presretanje komunikacije u Republici Srbiji, čini se da Bezbednosno-informativna agencija ima primat u odnosu na vojne agencije i policiju. Stoga, neophodno je ustanoviti monitoring centar koji bi bio nezavistan od bezbednosno-obaveštajnih službi i to iz sledećih razloga: podaci o primeni mera službi bezbednosti bi se nalazili na jednom mestu; bezbednosno-obaveštajne službe bi imale ravnopravne mogućnosti čime bi se izbegla situacija u kojoj jedna služba ima primat i uvid u mere drugih bezbednosno-obaveštajnih službi i policije (Petrović, 2020v, str. 55). Primarna nadležnost nezavisnog monitoring centar bila bi tajni nadzor komunikacija i on bi delovao kao nezavisni posrednik između

sudova i službi bezbednosti (Petrović, 2020a, str. 5). Trenutni problemi kada je u pitanju tajni nadzor jesu sledeći: „nadziranje bez odluke suda i drugih osoba sa kojima je osoba koja je predmet mera u kontaktu; za presretanje komunikacije moguće je izbeći telekomunikacione operatere ako se za to koriste mobilni uređaji; mogućnost angažovanja privatnih aktera u ove svrhe; postavljanje na ove pozicije ljudi odanih partiji kako bi se mogli nadzirati kritičari vlasti“ (Petrović, 2020b, str. 51-52). Buduće zakonske modifikacije bi trebalo da obuhvate uvođenje obaveze o neprestanom vođenju evidencije o tajnom nadzoru komunikacija od strane bezbednosno-obaveštajnih službi, policije, sudova i drugih državnih institucija (Petrović, 2020a, str. 8). Kao određeni nedostaci trenutnog normativnog okvira koji postoji u Republici Srbiji mogu se navesti i: postojanje drugih ovlašćenja koja nisu obuhvaćena popisima posebnih postupaka i mera, složenost pravnog okvira, nedoslednost u određivanju posebnih postupaka i mera, razlike u postupcima za sudsko odobravanje, nedovoljna uređenost mehanizama za nadzor (Milosavljević, 2015, str. 28-30). Može se zaključiti da u Republici Srbiji postoji još prostora za preciznije uređenje primene posebnih mera za tajno prikupljanje podataka. Rezultat takvih eventualnih budućih zakonskih modifikacija bio bi čvršća zaštita prava na privatnost građana.

Tajni nadzor komunikacija podrazumeva „kako mere kojima se ostvaruje uvid u sadržaj komunikacija, tako i mere kojima se prikupljaju podaci o komunikaciji bez uvida u sam sadržaj (tzv. zadržani podaci)“ (Petrović i Đokić, 2017, str. 12). Zadržani podaci, na osnovu Zakona o elektronskim komunikacijama, jesu informacije o izvoru i odredištu komunikacije, vreme početka, trajanja i završetka komunikacije, vrsti komunikacije, terminalnoj opremi korisnika i njegovoj lokaciji“ (Zakon o elektronskim komunikacijama, 2010, član 129). Bezbednosno-informativna agencija i Vojnobezbednosna agencija mogu se obratiti operatoru kako bi pristupile zadržanim podacima. Obe strane su u obavezi da vode evidenciju o zahtevima za pristup zadržanim podacima u toku jedne kalendarske godine i da dostavljaju Povereniku za informacije od javnog značaja i zaštitu podataka o ličnosti evidenciju koja mora da sadrži broj upućenih zahteva, broj ispunjenih zahteva i vreme koje je proteklo od dana kad su podaci zadržani do dana kad je pristup podacima zatražen (Zakon o elektronskim komunikacijama, 2010, član 130a). Međutim, kada su u pitanju zadržani podaci problem se ispoljava u činjenici da osoba neće biti obavestena da li je neka od bezbednosno-obaveštajnih službi pristupila zadržanim podacima (Pejić, 2014, str. 13). Neophodno je obezbediti pravo na privatnost pojedincima, a posebne postupke i mere posmatrati kao „kompromis između potrebe da se u konkretnoj situaciji zaštititi javni interes i opšteg pravila da državni organi u svakoj situaciji imaju obavezu da poštuju ljudska prava i slobode“ (Mirković, 2017, str. 90). U tom pravcu, adekvatan normativni okvir je prvi korak na tom putu.

Zaključak

Primena posebnih mera tajnog prikupljanja podataka uređena je normativnim okvirom Republike Srbije. Usled brojnih pravnih praznina i mogućnosti zloupotrebe, evidentno je da postoji još prostora za uređenje njihove primene kako bi se adekvatno zaštitilo pravo na privatnost građana Republike Srbije. Posebne mere tajnog prikupljanja podataka koje stoje na raspolaganju Bezbednosno-informativnoj agenciji i Vojnobezbednosnoj agenciji uređene su zakonima kojima se reguliše rad bezbednosno-obaveštajnog sistema, kao i Zakonikom o krivičnom postupku. Ovim zakonima neophodne su određene buduće modifikacije pri čemu zakonodavac može da se ugleda na odredbe Zakonika o krivičnom postupku. Prema Zakonu o Bezbednosno informativnoj agenciji i Zakonu o Vojnobezbednosnoj i Vojnoobaveštajnoj agenciji, sudska instanca koja odobrava primenu posebnih mera razlikuje se od slučaja do slučaja. Nejasno je zašto u slučaju Bezbednosno-informativne agencije primenu posebnih mera odobrava Viši sud u Beogradu, a u slučaju primene posebnih mera Vojnobezbednosne agencije nadležni Viši sud ili Vrhovni kasacioni sud. Ujedno, funkcija suda je svedena na odobravanje primene posebnih mera tajnog prikupljanja podataka. Stoga, neophodno je proširiti kontrolnu funkciju sudstva na period trajanja primene posebnih mera, kao i period nakon okončanja njihove primene kao što je to regulisano Zakonikom o krivičnom postupku. Podaci koji su prikupljeni primenom posebnih mera ne treba da predstavljaju tajne podatke, već je neophodno uvesti odredbu po kojoj bi bezbednosno-obaveštajne službe u određenim situacijama i nakon adekvatnog protoka vremena obavestile pojedinca koji je bio predmet mera. Zakonik o krivičnom postupku reguliše način postupanja sa informacijama koje su prikupljene primenom posebnih dokaznih radnji i ostavlja mogućnost da sudija za prethodni postupak obavesti lice prema kome je posebna dokazna radnja sprovedena. Izostanak takvih odredaba u trenutnim zakonima kojima se reguliše rad bezbednosno-obaveštajnog sistema navode na zaključak da pravo na privatnost svakog pojedinca može biti ugroženo. I pored dosadašnjih modifikacija zakonskih odredaba, neophodna je njihova buduća izmena kako primena posebnih mera tajnog prikupljanja podataka ne bi mogla da povredi pravo na privatnost građana Republike Srbije. Dodatno uređenje primene posebnih mera tajnog prikupljanja podataka bi pozitivno uticalo i na poverenje građana prema bezbednosno-obaveštajnom sistemu.

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THE RIGHT TO PRIVACY AND SPECIAL MEASURES OF SECRET DATA COLLECTION IN THE REPUBLIC OF SERBIA

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Abstract

The right to privacy represents one of the fundamental human rights of individuals in a democratic society. There are numerous international and regional instruments that guarantee the right to privacy. States are obligated to ensure unhindered enjoyment of this right to their population. Today, one of the greatest challenges of the right to privacy is special measures of secret data collection available to certain actors within the security-intelligence system and other state actors in the performance of their duties within their jurisdiction. It should be noted that the right to privacy is not absolute, and the law specifies how it can be limited. In the Republic of Serbia, derogation of the right to privacy is the subject of certain laws, especially those regulating the functioning of the security-intelligence system. Therefore, the paper analyzes the normative framework regulating special measures of secret data collection available to various actors within the security-intelligence system. Additionally, the analysis will encompass the normative provisions regulating the control of special measures of secret data collection. The paper aims to examine the negative impact of the implementation of special measures on the right to privacy, as well as the possibility of improving the current normative framework existing in the Republic of Serbia.

Keywords: *right to privacy, special measures of secret data collection, security-intelligence system, control*

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Introduction

Enjoyment of the right to privacy must be ensured for individuals in a democratic society. The state should have an adequate normative framework that ensures the enjoyment of the right to privacy and that is meaningful and clear to every citizen. At the same time, the state should also provide adequate institutional mechanisms through which individuals can address relevant institutions if they believe that their right to privacy has been violated in any way. The right to privacy, although one of the fundamental human rights, is not absolute. It is possible to limit the enjoyment of this right to individuals in certain situations that should be clearly defined by legal provisions. The greatest challenge to the enjoyment of the right to privacy is represented by special measures of secret data collection that various state actors use when exercising their powers. Since the actors can be different, the names of these procedures and measures in legal solutions are also different. The subject of the analysis is the normative framework that regulates the application of special measures of secret data collection of the security and intelligence system of the Republic of Serbia. However, the Law on the Security and Information Agency and the Law on the Military Security and Military Intelligence Agency do not exhaust the list of procedures and measures that the aforementioned state actors have at their disposal, and it is therefore necessary to touch upon the Criminal Procedure Code. In recent years, certain provisions and parts of the current normative framework of the Republic of Serbia have undergone certain modifications in order to bring them into line with the Constitution. The paper seeks to examine the possibility of improving the normative framework regulating the regime of special measures of secret data collection. Therefore, the first part of the paper is dedicated to the right to privacy. The second part of the paper deals with specific measures of secret data collection that the actors of the security and intelligence system have at their disposal. The third part of the paper is dedicated to the control of the application of special measures of secret data collection, and in particular to judicial control. In the fourth part, possible problems that arise in the relationship between the right to privacy and special measures of secret data collection are presented, whereby the paper seeks to identify shortcomings that exist in the current legal provisions. At the very end, in addition to the conclusion, a list of literature and laws used in the preparation of the paper will be offered.

Right to privacy

One of the fundamental human rights is the right to privacy. The right to privacy does not refer to one specific right, but encompasses a wide range of rights, namely “the right to respect for private and family life, the right to respect for the inviolability of the home, the right to respect for the inviolability of

correspondence, and the right to respect for honour and reputation” (Dimitrijević et al., 2007, p. 203). At the international and regional level, the Universal Declaration of Human Rights from 1948, the Covenant on Civil and Political Rights from 1966, and the European Convention on Human Rights from 1950, guarantee the right to privacy. According to Article 8, paragraph 1 of the European Convention on Human Rights: “Everyone has the right to respect for his private and family life, his home and his correspondence” (European Convention for the Protection of Human Rights and Fundamental Freedoms, 1950). Paragraph 2 provides that: “a public authority shall not interfere with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others” (European Convention on Human Rights, 1950). Although the content of paragraph 2 suggests that the situations in which it is possible to restrict the right to privacy are numerous, in practice states cannot so easily restrict the right to privacy of their citizens.

In considering cases concerning violations of Article 8 of the European Convention on Human Rights, the European Court of Human Rights has established certain standards in the years that followed regarding the right to privacy. They can be summarized as follows: “1) cases of interference with the right to privacy must be regulated by law with sufficient clarity to be foreseeable; 2) such cases should be regulated restrictively and primarily relate to serious crimes and threats to security; 3) the procedure for applying measures is prescribed by law, and the application of measures should be decided by a court or other authority based on the existence of grounds for suspicion; 4) the beginning and duration of the measure is determined in a decision of a court or other authority, which also supervises the application of the measure; 5) the procedure for the protection of citizens should be prescribed by law and include the possibility of judicial protection, and the citizen should be informed of the measure upon his/her request when possible; and 6) the law should provide for sanctions for violating the rules on the application of such measures” (Milosavljević, 2015, p. 25). The importance of the European Court of Human Rights is reflected precisely in the possibility that an individual can turn to the court and sue his/her own state if he/she believes that any of the rights guaranteed by the European Convention on Human Rights have been denied or violated.

The right to privacy is not only regulated at the international and regional level, but is also subject to the constitutional and legal framework of states. Precisely because the right to privacy protects the following interests: “a) human interests in decision-making autonomy in intimate matters; b) the individual’s interest in being protected from the disclosure of personal circumstances; c) the individual’s interest in being protected from unfounded surveillance by the authorities”

(Dimitrijević, 2011, p. 203). The protection of the latter interest represents one of the most common problems in the state-individual relationship today. Therefore, it can be concluded that “the state has a double obligation: negative – to refrain from interfering with privacy and positive – to provide protection for the privacy of the individual and provide a legal framework and protection from attacks by other individuals” (Dimitrijević et al., 2007, p. 203). The Constitution of the Republic of Serbia, although it does not contain a specific provision on the right to privacy, guarantees inviolability of the home in Article 40, secrecy of letters and other means of communication in Article 41, and protection of personal data in Article 42. At the same time, it should be borne in mind that the Constitutional Court, in its decision 3238/1 from 2012, stated that the right to privacy is an integral part of constitutional law and falls under Article 23 of the Constitution, i.e. the right to dignity and free development of the personality (Belgrade Center for Human Rights, 2023, p. 94).

An indispensable part of the right to privacy is also the right to the protection of personal data. In the Republic of Serbia, a law was passed in 2008, which added responsibilities to the Commissioner for Information of Public Importance in the field of personal data protection. However, due to numerous shortcomings of the old legal solution, a new law was passed in 2018. Personal data is “any data relating to a natural person whose identity is determined or determinable, directly or indirectly, in particular on the basis of an identity marker, such as a name and identification number, location data, identifiers in electronic communications networks or one or more features of his or her physical, genetic, mental, economic, cultural and social identity” (Act on the Protection of Personal Data, 2018). The right to the protection of personal data and the right to privacy can be seriously threatened by special measures of secret data collection that the security and intelligence system has at its disposal when exercising its powers. The most common forms of interference with the privacy of citizens are secret surveillance and collection of data on individuals, their storage and publication (Ignjatović, 2015, p. 10). For this reason, an adequate normative framework is necessary that prescribes special measures, the manner of their implementation, and especially their control. The following part of the paper presents legal provisions relating to special measures of secret data collection by the Security and Information Agency, the Military Security Agency and the Military Intelligence Agency.

Special measures for secret data collection

Special procedures and measures represent “special authorizations of security and criminal prosecution authorities for secret data collection that exceptionally, for a certain period of time and without the knowledge of citizens, and based on a court decision and under the conditions prescribed by law, deviate from certain constitutionally guaranteed individual rights” (Milosavljević, 2015, p. 11). There are two groups of special measures for secret data collection. The first group

includes measures that do not significantly violate the human rights and freedoms of an individual, while the second group includes measures that temporarily and without the knowledge of an individual violate his or her human rights and freedoms, especially his or her right to privacy (Milosavljević, 2008). Special procedures and measures are not available only to actors in the security and intelligence system, but also to other state bodies such as the police, and it is necessary to make a distinction between them. Based on the purpose of data collection, all special procedures and measures are divided into two groups: 1) special procedures and measures aimed at conducting criminal proceedings, which are more closely regulated by the Criminal Procedure Code and the Police Act; 2) special procedures and measures aimed at preventive action to protect national security, which are regulated in more detail by the laws on the security and intelligence system (Milosavljević, 2007, pp. 59-60). Although different terms are used for special procedures and measures in different legal solutions, special procedures and measures available to the security and intelligence system authorities are not only subject to the Law on the Security and Intelligence Agency and the Law on the Military Security and Military Intelligence Agency, but also to the Criminal Procedure Code.

Based on the Criminal Procedure Code, the Security and Intelligence Agency and the Military Security Agency may apply special evidentiary measures. Special evidentiary measures are applied to a person for whom there is a basis for suspicion that he has committed a criminal offense or is preparing to commit it, and this cannot be detected, prevented or proven in any other way or would cause disproportionate difficulties or great danger (Criminal Procedure Code, 2011, Article 161). The Code prescribes the criminal offences for which special evidentiary actions may be applied, the manner of handling the collected material, the possibility of accidental discovery, and the confidentiality of data. As special evidentiary actions, the Code lists secret surveillance of communications, secret monitoring and recording, simultaneous operations, computer search of data, controlled delivery, and an undercover investigator. In addition to the police, the Security and Information Agency and the Military Security Agency may conduct secret surveillance of communications, secret monitoring and recording, simultaneous operations, and computer search of data. Based on the text of the Code, controlled delivery is conducted by the police, as well as other state bodies designated by the public prosecutor, which leaves room for actors of the security and intelligence system. An undercover investigator may be an authorized person of the police, the Security and Information Agency, and the Military Security Agency. The Code of Criminal Procedure regulates in more detail each of the special evidentiary actions, i.e. the conditions for implementation, the instance issuing the order, the course of implementation, the possibility of expansion, and the need to submit reports and collected materials.

The Law on the Security and Intelligence Agency regulates in more detail the manner of work, organization, control and other issues related to the Security and Intelligence Agency. The Agency may apply operational methods, measures and actions, as well as appropriate operational and technical means when performing tasks within its jurisdiction (Law on the Security and Intelligence Agency, 2002, Article 9). Special measures available to the Security and Intelligence Agency are: secret surveillance and recording of communications regardless of the form and technical means through which surveillance is carried out or of electronic or other addresses; secret surveillance and recording of communications in public places and places with restricted access or on premises; statistical electronic surveillance of communications and information systems in order to obtain data on communications or the location of mobile terminal equipment used; computer search of already processed personal and other data and their comparison with data collected through the application of other special measures (Law on the Security and Intelligence Agency, 2002, Article 13). Special measures are applied when there is a reasonable suspicion that a certain person, group or organization is preparing or undertaking actions directed against the security of the state, which could not be prevented or proven in any other way or would cause disproportionate difficulties or great danger (Law on the Security and Information Agency, 2002, Article 14). When deciding on the application of special measures, special consideration is given to whether the same result could be achieved in a manner that is less restrictive of human rights, to the extent necessary to satisfy the purpose of the restriction in a democratic society (Law on the Security and Information Agency, 2002, Article 14). The Director of the Security and Information Agency submits a proposal, which is decided by the President of the High Court in Belgrade, or a judge designated by him from among the judges assigned to the Special Department that deals with serious criminal cases, and the decision must be made within 48 hours. A special measure may last three months, and may be extended a maximum of three times for three months. Pursuant to Article 15b, the Security and Intelligence Agency has the possibility of expanding the application of special measures.

The special procedures and measures for secret data collection that the Military Security Agency has at its disposal are: operational penetration into organizations, groups and institutions; secret acquisition and purchase of documents and objects; secret inspection of data records; secret monitoring and surveillance of persons in open spaces and public places using technical means; secret electronic surveillance of telecommunications and information systems in order to collect retained data on telecommunications traffic, without insight into their content; secret recording and documentation of conversations in open and closed spaces using technical means; secret surveillance of the content of letters and other means of communication, including secret electronic surveillance of the content of telecommunications and information systems; secret surveillance and recording

of the interior of buildings, closed spaces and objects (Law on the Military Security and Military Intelligence Agency, 2009, Article 12). The application of the first four measures is decided by the director of the agency or a person authorized by him and they are applied as long as there are reasons for their application. The competent High Court shall decide on the application of the fifth measure within 8 hours. The Supreme Court of Cassation shall decide on the application of the sixth, seventh and eighth measures within 24 hours. The duration of the application of the other measures is six months with the possibility of an extension of another six months. The special procedures and measures for covert data collection that the Military Intelligence Agency has at its disposal are: covert cooperation for the purpose of collecting data; covert acquisition and purchase of documents and objects; operational penetration into organizations, institutions and groups; taking measures to conceal identity and property; establishing legal entities; covert use of property and services for a fee; use of special documents and means to protect the agency, its members, premises and assets. (Law on the Military Security and Military Intelligence Agency, 2009, Article 27). The above-mentioned procedures and measures are undertaken on the basis of a decision by the director of the agency or a person authorized by him.

Control of the implementation of special measures

The purpose of control of the security and intelligence system is to determine whether the security and intelligence system acts in accordance with the law, respecting guaranteed human rights while ensuring the greatest possible efficiency of the system (Born, 2007, p. 163). There are numerous controllers of the security and intelligence system. Control is primarily exercised by three branches of government. Although the security and intelligence system is part of the executive branch, the Government is one of the control instances. Control exercised by the National Assembly is manifested in several forms, with the work of the Committee for the Control of Security Services being the most significant. Judicial control is reflected in the approval of the implementation of special measures for secret data collection. At the same time, control is also exercised by independent state institutions, the most significant of which are the Protector of Citizens, the Commissioner for Information of Public Importance and Personal Data Protection, and the State Audit Institution. The control function can also be exercised by civil society, the public, and the media. Moreover, within the security and intelligence services themselves, there are also bodies responsible for internal control, which are actually “the first line of defense against illegal and improper conduct by security services” (Petrović, 2020v, p. 63).

There are two goals for which actors in the security and intelligence system may use special measures for the secret collection of data that infringe on human rights and freedoms. The first is the detection, investigation and documentation of serious crimes, and the second is preventive action (Petrović, 2020b, p. 21). The

former is governed by the Criminal Procedure Code, in which courts have a much greater control function, and the latter by the Law on the BIA and the Law on the VBA and VOA, in which the role of the court is reduced only to granting consent (Petrović, 2020b, p. 68). Based on the Criminal Procedure Code, the court makes a decision on whether the conditions for the application of certain special evidentiary measures have been met. During its implementation, the actor conducting it must submit daily reports together with the material collected. At the same time, after the completion of the application of the special evidentiary action, the actor who conducted the special evidentiary action must submit a special report, as well as all the collected material. On the other hand, according to the Law on the Security and Information Agency and the Law on the Military Security and Military Intelligence Agency, the data collected by applying some of the special measures constitute secret data. Therefore, judicial control under the Criminal Procedure Code includes all three phases of control, i.e. before, during and after the completion of the measures, and is therefore more comprehensive than the judicial control provided for by the laws on security and intelligence services, as it is limited to only the first phase (Petrović, 2015, p. 39).

The current normative framework regulating the application of special measures for secret data collection in the Republic of Serbia has undergone certain modifications in recent years (Milošević and Putnik, 2017). In 2013, the Constitutional Court dealt with the provisions of the Law on Electronic Communications, based on which operators were obliged to submit data on electronic communications in accordance with the laws regulating criminal procedure, the work of the security and intelligence system and the police (Decision of the Constitutional Court of the RS, case no. IUz-1245/2010). Given that the Constitution prescribes certain restrictions on the confidentiality of letters and other means of communication, these restrictions cannot be subject to different legal solutions. The Constitutional Court concluded that such provisions are not in accordance with the Constitution, which is why they were later amended. In subsequent years, certain provisions of the Law on the Security and Information Agency and the Law on the Military Security and Military Intelligence Agency were subject to consideration by the Constitutional Court. Referring to the confidentiality of letters and other means of communication, and in this case to the right guaranteed by the Constitution itself, the Constitutional Court decided that it is not possible for the director of a military agency to order the application of a special measure of secret electronic surveillance without the approval of a court instance (Decision of the Constitutional Court of the Republic of Serbia, IUz -1218/2010). The result of this decision of the Constitutional Court was a later modification of the legal provision in the direction that, upon the proposal of the director of the Military Security Agency, secret electronic surveillance is approved by a higher court. In order to protect human and minority rights, Articles 13, 14 and 15 of the Law on the Security and Information Agency

were also modified. The previous provisions of this law did not provide for criteria on the basis of which a person to whom special measures are applied would be determined, it was not stated what special measures could entail and what they relate to, which makes the law unclear and insufficiently precise, and subject to arbitrary interpretation (Decision of the Constitutional Court of the RS, case no. IUz-252/2002). Although these articles have been modified and clarified, certain provisions of the Law on the Security and Information Agency are still subject to criticism today. The legal modifications made so far were made in order to protect the right to privacy of citizens when applying special measures of secret data collection. However, it is necessary to analyze whether the right to privacy is adequately guaranteed by the existing normative framework. The following part of the paper presents possible problems related to the application of special measures, as well as the need to amend certain legal solutions.

Possible problems related to the implementation of special measures

In the Republic of Serbia, the right to privacy is guaranteed by the Constitution. Other legal acts also seek to protect the right to privacy of citizens, either directly or indirectly. The Criminal Code of the Republic of Serbia provides for penalties for violating the inviolability of a dwelling (Article 139), unlawful search (Article 140), violation of the confidentiality of letters and other mail (Article 142), unauthorized eavesdropping and recording (Article 143), unauthorized photography (Article 144), and unauthorized collection of personal data (Article 146). Special measures of covert data collection available to actors of the security and intelligence system can seriously jeopardize the right to privacy. Therefore, it is necessary to consider how to improve the current normative framework regulating the application of special measures for covert data collection. The provisions of the law on the basis of which the Security and Information Agency, the Military Security Agency and the police can extend the application of measures to other persons and means of communication are problematic, because in order for the right to privacy to be truly guaranteed, it is necessary for the measures to be applied to a precisely defined person and to precisely defined means of communication (Bećirović, 2017, p. 168). The above “negatively affects future cases of secret surveillance of communication, because mechanisms for critical and objective distinction of unnecessary application of special evidentiary actions are not developed, which would be greatly contributed to by the participation of the person whose privacy is at stake in the entire procedure” (Kovačević, 2014, p. 178).

The Law on the Security and Information Agency seems to define in a sufficiently clear manner the operational methods, measures, actions and operational-technical means that the Security and Information Agency can apply when performing its tasks (Petrović, 2020v, p. 118). At the same time, it is necessary to define in detail what "grounds for suspicion" may entail, according to whom, in which cases and

for which threats special measures are applied, and to introduce an obligation to notify persons who were subject to the measures, provide them with access to the collected data and regulate the method of their destruction (Maričić and Živković, 2022, pp. 6-7). In a comparative perspective with the Law regulating the work of military agencies, the Law on the Security and Information Agency is much shorter and one gets the impression that there are many legal gaps in it. The application of special measures for secret data collection can indeed seriously threaten the privacy of citizens, because these measures include all "those methods of data collection that allow data to be collected about persons, groups and/or organizations that are the subject of the investigation without their knowledge" (Petrović, 2020b, p. 23). Based on the laws regulating the operation of the security and intelligence system, all data collected through the application of special measures are classified data, which actually "limits the citizen's right to legal remedy" (Bećirović, 2017, p. 170). It is necessary to regulate by law a greater judicial control function as regulated by the Criminal Procedure Code. Special measures need to be further regulated in such a way that the legislation provides for penalties for their illegal and improper application and provides for a time limit after the expiry of which the individual would be informed that he or she was subject to special measures (Petrović, 2020v, pp. 57-58). At the same time, it is necessary to define what happens to the collected material.

Secret surveillance is "the monitoring and recording of an individual, the use of hidden listening devices and the interception of communications" (Ignjatović, 2015, p. 10). When it comes to surveillance and interception of communications in the Republic of Serbia, it seems that the Security and Information Agency has primacy over military agencies and the police. Therefore, it is necessary to establish a monitoring center that would be independent of the security and intelligence services for the following reasons: data on the implementation of security services measures would be located in one place; security and intelligence services would have equal opportunities, which would avoid a situation in which one service has primacy and insight into the measures of other security and intelligence services and the police (Petrović, 2020v, p. 55). The primary responsibility of an independent monitoring center would be secret surveillance of communications and it would act as an independent mediator between the courts and security services (Petrović, 2020a, p. 5). Current problems with secret surveillance include: "surveillance without a court order and of other persons with whom the person subject to the measures is in contact; it is possible to avoid telecommunications operators for interception of communications if mobile devices are used for this purpose; the possibility of engaging private actors for these purposes; the appointment of people loyal to the party in these positions in order to monitor critics of the government" (Petrović, 2020b, pp. 51-52). Future legal modifications should include the introduction of an obligation to continuously keep records of secret surveillance of communications by security

and intelligence services, police, courts and other state institutions (Petrović, 2020a, p. 8). Some of the shortcomings of the current normative framework in the Republic of Serbia include: the existence of other powers that are not included in the lists of special procedures and measures, the complexity of the legal framework, inconsistency in determining special procedures and measures, differences in procedures for court approval, insufficient regulation of supervision mechanisms (Milosavljević, 2015, pp. 28-30). It can be concluded that there is still room for more precise regulation of the application of special measures for secret data collection in the Republic of Serbia. The result of such possible future legal modifications would be stronger protection of the right to privacy of citizens.

Secret surveillance of communications includes “both measures that provide insight into the content of communications, and measures that collect data about communications without insight into the content itself (so-called retained data)” (Petrović and Đokić, 2017, p. 12). Retained data, according to the Law on Electronic Communications, is information about the source and destination of communication, the time of the beginning, duration and end of communication, the type of communication, the user's terminal equipment and its location" (Law on Electronic Communications, 2010, Article 129). The Security and Information Agency and the Military Security Agency may contact the operator to access the retained data. Both parties are obliged to keep records of requests for access to retained data during one calendar year and to submit to the Commissioner for Information of Public Importance and Personal Data Protection a record that must contain the number of requests made, the number of fulfilled requests and the time that has elapsed from the date the data was retained to the date access to the data was requested (Law on Electronic Communications, 2010, Article 130a). However, when it comes to retained data, the problem is manifested in the fact that a person will not be informed whether any of the security and intelligence services have accessed the retained data (Pejić, 2014, p. 13). It is necessary to ensure the right to privacy for individuals, and to view special procedures and measures as a “compromise between the need to protect the public interest in a specific situation and the general rule that state authorities have an obligation to respect human rights and freedoms in every situation” (Mirković, 2017, p. 90). In this regard, an adequate normative framework is the first step on that path.

Conclusion

The application of special measures of secret data collection is regulated by the normative framework of the Republic of Serbia. Due to numerous legal gaps and possibilities of abuse, it is evident that there is still room for regulating their application in order to adequately protect the right to privacy of citizens of the Republic of Serbia. Special measures of secret data collection available to the Security Intelligence Agency and the Military Security Agency are regulated by

the laws regulating the work of the security intelligence system, as well as by the Criminal Procedure Code. These laws require certain future modifications, whereby the legislator can take as an example the provisions of the Criminal Procedure Code. According to the Law on the Security Intelligence Agency and the Law on the Military Security and Military Intelligence Agency, the court instance that approves the application of special measures differs from case to case. It is unclear why in the case of the Security Intelligence Agency the application of special measures is approved by the High Court in Belgrade, and in the case of the application of special measures by the Military Security Agency, the competent High Court or the Supreme Court of Cassation. At the same time, the function of the court is reduced to approving the application of special measures of secret data collection. Therefore, it is necessary to expand the control function of the judiciary to the period of application of special measures, as well as the period after their completion, as regulated by the Criminal Procedure Code. Data collected through the application of special measures should not represent secret data, but it is necessary to introduce a provision according to which the security and intelligence services would, in certain situations and after an adequate period of time, inform the individual who was the subject of the measures. The Criminal Procedure Code regulates the manner of handling information collected through the application of special evidentiary measures and leaves the possibility for the pre-trial judge to inform the person against whom the special evidentiary measure was carried out. The absence of such provisions in the current laws regulating the operation of the security and intelligence system leads to the conclusion that the right to privacy of each individual may be threatened. Despite the modifications of the legal provisions to date, their future amendment is necessary so that the application of special measures of secret data collection could not violate the right to privacy of citizens of the Republic of Serbia. Additional regulation of the implementation of special measures for secret data collection would also have a positive impact on citizens' trust in the security and intelligence system.

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RAZVOJ TRGOVINE IZMEĐU NR KINE I CIE : ANALIZA UTICAJA INICIJATIVE „16+1“

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Apstrakt

Glavni cilj rada je da se analizira razvoj trgovinskih odnose između Kine i 16 zemalja Centralne i Istočne Evrope (CIE) u periodu 2000-2022. Naime, uz primenu gravitacionog modela, ispituju se faktori koji su direktno doprineli povećanju trgovinske razmene, uz poseban osvrt na analizu uticaja učešća zemalja CIE u formatu „16+1“. Empirijski rezultati pokazuju da ekonomski rast u NRK i CIE, uključujući članstvo zemalja CIE u EU, su imali pozitivan i značajan uticaj na razvoj bilateralne trgovine između NR Kine i CIE, a to u svim slučajevima – kada su ukupna trgovina (TT), ali takođe uvoz zemalja CIE iz NR Kine (IM), kao i izvoz zemalja CIE u Kine (EX) posmatrane kao zavisne promenljive. Učešće u formatu „16+1“ je doprinelo povećanju trgovine samo u slučaju kada je izvoz CIE u NR Kinu zavisna promenljiva, ali, u poređenju sa članstvom u EU, se ipak pokazalo kao manje značajno.

Ključne reči: CIE, NR Kina, inicijativa „16+1“, trgovina, gravitacioni model

JEL: F15, F43

Uvod

Tokom protekle tri decenije, Narodna Republika Kina (NRK) zabeležila je nezapamćen privredni rast (UNCTAD, 2021), što je dovelo do toga da od 2012. godine bude rangirana kao najveći izvoznik na svetu i drugi najveći uvoznik na svetu (Gurría, 2014). Godine 2022, sama ukupna robna razmena NR Kine dostigla je rekordnu vrednost od 42,07 biliona juana (6,3 biliona američkih dolara) (the General Administration of Customs People's Republic of China - GACC, 2023).

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U skladu sa svojim ekonomskim usponom, NRK je značajno ojačala svoje ekonomske veze sa Centralnom i Istočnom Evropom (CIE). Inicijativa „16+1“³⁶, formirana 2012. godine sa ciljem da unapredi ekonomske, trgovinske, političke i kulturne veze između NR Kine i CIE, posebno je doprinela unapređenju saradnje (Bodroža i Kolavčić, 2022). NRK je dala prioritet ulaganjima u sektor privrede a posebno u zemljama CIE u kojima postoji potreba za dugoročnim ulaganjima (tj. infrastruktura, energetika, telekomunikacije i poljoprivreda) (Yue, 2018). Štaviše, inicijativa nastoji da umanjí trgovinske barijere između NRK i CIE kako bi se poboljšao pristup tržištu i potkrepio novi trgovinski potencijal. Inicijativa je takođe pomogla da CIE prevaziđe dugotrajne efekte finansijske krize iz 2008. godine privlačenjem priliva stranog kapitala (Matura, 2019; Szunomár, 2019). Kako su zaključili Vangeli i Pavličević (2019), kao i Zakić (2020), globalna finansijska kriza iz 2008. bila je „prava prilika“ i prekretnica u razvoju odnosa CIE i NRK. Usled trgovinske neravnoteže sa NR Kinom i njihovog statusa kao sekundarnih ekonomija unutar EU, mnoge zemlje CIE pozdravile su kineske investicije i poboljšanje veza sa NRK, videvši to kao mogućnost za razvoj infrastrukture i otvaranje pristupa neiskorišćenim novim tržištima (Szcudlik, 2019).

Oснаživanje odnosa između CIE i NR Kine po pokretanju formata „16+1“ dovelo je do bržeg širenja bilateralne trgovine. Prema GACC, bilateralna trgovina između CIE i NR Kine stabilno je rasla od 2012. do 2022. godine (u proseku 8,1% godišnje). Ukupna vrednost robne razmene ostvarene između CIE i NRK 2022. godine je dostigla 158 milijardi američkih dolara, što je povećanje od 7% na godišnjem nivou i više nego dvostruki porast u odnosu na 2012. godinu kako u pogledu izvoza, tako i u pogledu uvoza. Bez obzira na to, robna razmena dovela je do disbalansa, jer je uvoz iz NRK u zemlje CIE porastao mnogo više nego izvoz (2,6 puta naspram 1,7 puta).

Uprkos sveukupnom rastu trgovine i saradnje, usled toga su se javili mnogobrojni izazovi koji sprečavaju razvoj efikasnije trgovine na štetu zemalja CIE. Među ostalim ključnim pitanjima, strateška orijentacija NRK ka dugoročnom povećanju izvoza domaćih proizvoda u odnosu na uvoz energije i minerala umanjila je ukupan uticaj CIE usled asimetrije u privrednoj moći i značajno je narušila trgovinsku ravnotežu u korist NRK. Tokom 2022. godine samo četiri od šesnaest zemalja CIE (Poljska, Rumunija, Letonija i Albanija) zabeležile su smanjenje u svom trgovinskom deficitu u odnosu na prethodnu godinu. Preostalih dvanaest zemalja je u toku istog perioda zabeležilo progresivno povećanje trgovinskog deficita sa NR Kinom.

³⁶ Sa pridruživanjem Grčke u 2019. godini, format je proširen na „17+1“ a posle povlačenja baltičkih zemalja 2022. godine, inicijativa je nadalje zvanično poznata kao "Saradnja između Kine i zemalja Centralne i Istočne Evrope".

Format „16+1“ se takođe suočio sa izazovima u vidu rastućih negativnih percepcija NRK u nekim delovima CIE. Baltičke zemlje, Češka i Slovačka su, recimo, kritikovale NRK zbog njene "diplomacije vuka ratnika", njene politike "jedne Kine" prema Tajvanu, kao i zbog njenih loših rezultata u oblasti poštovanja ljudskih prava i relativno visoke korupcije (Kavalski, 2022). Prema zvaničnom saopštenju da su se njihovi strateški ciljevi udaljili od formata „16+1“, Litvanija se 2021. godine povukla iz inicijative „16+1“, a njen primer su 2022. godine sledile Letonija i Estonija. Zabrinutost se javila i u nekim drugim zemljama CIE, prvenstveno zbog nedovoljnog broja investicionih projekata i opšteg nezadovoljstva (Salát, 2022).

Imajući u vidu da bi porast obima trgovine mogao da unapredi ekonomsku saradnju i dovede do pozitivnog neto efekta po privredni rast za sve zemlje učesnice (Jovičić et al., 2020), od ključnog je značaja da se analizira da li je učešće u inicijativi „16+1“ direktno doprinelo povećanju trgovinske razmene između CIE i Kine ili su drugi faktori imali značajan uticaj. Samim tim, primenom gravitacionog modela koji se uobičajeno koristi u analizama međunarodne trgovine, svrha ove studije je da se ispituju bilateralni trgovinski odnosi između NRK i 16 zemalja CIE u periodu od 2000. do 2022. godine.

Struktura rada je sledeća. Nakon uvoda, u drugom delu je predstavljen pregled literature, dok je u trećem delu opisana metodologija. Četvrti deo predstavlja rezultate istraživanja. U poslednjem delu je predstavljena diskusija kao i zaključna razmatranja.

Pregled literature

Saradnja između NRK i CIE

Uspostavljanje veza između CIE i NR Kine otvorilo je nove debate koje uključuje nove komparativne sub-regionalne i sub-nacionalne analize (Bharti, 2022). Pored brojnih studija koje ispituju „16+1“ i odgovarajuću ekonomsku u političku pozadinu uključenosti kako CIE, tako i NR Kine (Turcsányi et al., 2014; Vangeli i Pavličević, 2019), istraživači su analizirali i odnose između NRK i CIE u kontekstu inicijative „Pojas i put“, imajući u vidu da su i ova inicijativa i format „16+1“ povezane jer se obe fokusiraju na povećanje povezanosti i produbljivanjem saradnje (Matura, 2016; Pepermans, 2018; Szunomár, 2019).

Što se tiče razvoja ekonomske saradnje između NR Kine i CIE koja potiče iz „16+1“, studije su uglavnom istraživale razvoj investicija ili trgovinskih odnosa. Na primer, Šteinbuka et al. (2017) istražujući nedavne investicione trendove između EU i Kine, zajedno sa trgovinskom saradnjom i pitanjima ekspanzivnog rasta saradnje između CIE i NRK (koje uključuju platformu „16+1“), tvrde da investicije NRK i dalje ostaju umerene, a praćene su povećanim trgovinskim

deficitom. Isto tako, Grieger (2018) zaključuje da je trgovina između NR Kine i CIE doživela značajan rast, ali prevashodno u korist NR Kine. Grieger (2018) takođe primećuje da kineske SDI predstavljaju neznatan udeo u ukupnim SDI uprkos velikoj koncentraciji u najvećim zemljama CIE.

Andrijauskas et al. (2020), istražujući odnose NR Kine i CIE, ukazuju na skroman ekonomski uticaj NR Kine na zemlje CIE jer se one prvenstveno oslanjaju na trgovinu i investicije sa EU i drugim razvijenim zemljama. Slično tome, na osnovu detaljnog empirijskog istraživanja, Matura (2019) nije pronašao dokaze o snažnijem uticaju intenziviranja trgovinskih odnosa između NRK i CIE, primećujući slabu korelaciju između trgovine i nivoa političkih odnosa.

Uprkos značajnom razvoju saradnje NR Kine sa CIE, Horváth (2020, str. 642) smatra da je „u poređenju sa drugim multilateralnim odnosima, značaj saradnje CIE i NRK manji od druge multilateralne saradnje“, zaključujući da je zabrinutost zemalja Zapadne Evrope od proširenja saradnje CIE i NRK, i da su dosta preuveličani.

Inače, moglo bi se primetiti, da je većina autora saglasna (Gigov i Poposka, 2022; Stanojević et al., 2021; Szunomár et al., 2020; Jaklič i Svetličič, 2019; Jaćimović et al. 2018; Yue, 2018; i drugi) da, uprkos tome što su NRK i CIE značajno unapredile međusobnu saradnju, kao i trgovinu tokom poslednje decenije, visoka očekivanja u pogledu koristi od realizacije inicijative “16+1“ nisu bila u potpunosti ispunjena

Gravitacioni model

Otkako je prvobitno uveo svoju formulu davne 1962. godine, model gravitacije je služio kao koristan alat u analizi međunarodne trgovine. Međutim, zbog neadekvatnosti njegovog teorijskog okvira, formalnih matematičkih izvođenja i dokaza, primena modela u društvenim i naučnim istraživanjima je bila raznovrsna, a ostaje predmet dalje diskusije (Li et al., 2020). Anderson (1979) i Bergstrand (1985) dali su značajan doprinos formuli modela i njegovom teorijskom temelju: dok je Bergstrand obezbedio mikroekonomsku osnovu modela tako što je povezo bilateralnu trgovinu i teoriju, a istovremeno je uključio i ekonomsku ponudu. Anderson je sledio pristup diferencijaciji proizvoda postavljajući prve teorijske temelje za gravitacionu jednačinu kao ekonomista (Shahriar et al., 2019).

Gravitacioni model danas ima široku primenu u raznim empirijskim analizama (Van Bergeijk i Brakman, 2010; De Benedictis i Taglioni, 2011; Krisztin i Fischer, 2015; Narayan i Nguyen, 2016; Irshad et al., 2017; Shahriar et al., 2019; Kohl, 2019; Martin i Pham, 2020; Golovko i Sahin, 2021; Yotov, 2022) kako bi se lakše objasnili i predvideli tokovi trgovine između zemalja i ponudio uvid u relativnu važnost faktora kao što su veličina ekonomije i udaljenost za oblikovanje obrazaca međunarodne trgovine, čime je učvršćen položaj ovog

modela kao vrednog resursa za kreatore politika i firme koje učestvuju u međunarodnoj trgovini.

Oslanjajući se na širok spektar ekonomskih pokazatelja, kao i na fizičku udaljenost između privreda koje se analiziraju, gravitacioni model se u velikoj meri primenjuje u analiziranju i predviđanju tokova bilateralne trgovine (Head i Mayer, 2014). Gravitacioni model inkorporira nekoliko metodoloških i teorijskih dostignuća, uključujući i nove aproksimacije za tržišne prepreke, kao i mere za analiziranje ekonomske udaljenosti i stranih direktnih ulaganja (Van Bergeijk i Brakman, 2010). Zbog kapaciteta koje ima kao analitički alat, gravitacioni model se koristi u raznim analizama u oblasti međunarodnih migracija (Beine et al., 2016), poljoprivrede i stočarstva (Atif et al., 2017; Luo i Tian, 2018), zdravstva (Teow et al., 2018), turizma (Santana-Gallego et al., 2016) i investicija (Chang, 2014). Međutim, i dalje se prvenstveno koristi u istraživanjima u oblasti međunarodne trgovine, pre svega sa ciljem uračunavanja međunarodnih tokova kapitala i radne snage (Zhou et al., 2019). Ovaj model se može primeniti i za utvrđivanje ekonomskih odnosa između dve zasebne privrede ili zemlje, kao što je, na primer, obim u kojem su sankcije i cene nafte uticale na spoljnu trgovinu između Rusije i Irana u periodu od 1994. do 2013. godine (Rasoulinezhad, 2016). Primenom pojednostavljenog gravitacionog modela na baltičke države (Estoniju, Letoniju i Litvaniju), Byers et al. (2000) su utvrdili da su se njihovi međusobni trgovinski tokovi ne samo smanjili, već su se proširili i na druge bivše države SSSR-a. Proučavajući raspad SSSR-a, Xuegang et al. (2008) su koristili tri objašnjavajuće promenljive (BDP, BDP po glavi stanovnika i šangajske organizacije za saradnju (ŠOS) – za koje je sve utvrđeno da su značajne), da razviju gravitacioni model za bilateralnu trgovinu regiona Sinđan.

Nedostatak jedinstvenog konsenzusa o ekonometrijskoj specifikaciji gravitacionog modela ostavlja prostora za debatu. Međutim, upotreba panel podataka i dalje može predstavljati značajne prednosti zbog svoje mnogo veće veličine uzorka u odnosu na studije poprečnog preseka ili vremenskih serija, jer poboljšava preciznost procene regresije. Korišćenje panel podataka takođe može doprineti ublažavanju problema pristrasnosti rezultata usled izostavljenih promenljivih i heterogenosti, koji se često javljaju u istraživanjima poprečnog preseka. Štaviše, preporučuje se primena panel podataka za procenu gravitacionog modela međunarodne trgovine jer bi izostavljanje značajnih varijabli takođe moglo da generiše pristrasne rezultate i pogrešne zaključke (Pesaran, 2015).

Metodologija

Da bi se istražio uticaj formata „16+1“ na razvoj trgovinskih tokova između NRK i CIE, primenjen je pristup gravitacionog modela zasnovan na Tinbergen-ovom (1962) osnovnom obliku:

$$Y_{ij} = C \frac{Z_i Z_j}{D_{ij}^2} \quad (1)$$

Gde je Y_{ij} obim bilateralne trgovine između zemlje i i zemlje j . Z_i i Z_j je BDP zemlje i i zemlje j , D_{ij} je rastojanje između zemlje i i zemlje j .

Osnovne jednačine proširenih gravitacionih modela primenjenih u ovom istraživanju ocenjene su na sledeći način:

$$\text{Model1: } \ln Y_{ij,t} = C_1 + \alpha_1 \ln(Z_{it}) + \alpha_2 \ln(Z_{jt}) + \alpha_3 \ln(D_{ij}) + \varepsilon_{ijt}, \quad (2)$$

$$\text{Model2: } \ln Y_{ij,t} = C_2 + \beta_1 \ln(Z_{it}) + \beta_2 \ln(Z_{jt}) + \beta_3 \ln(D_{ij}) + \beta_4 \text{COOP}_{ij} + \zeta_{ijt}, \quad (3)$$

$$\text{Model3: } \ln Y_{ij,t} = C_3 + \lambda_1 \ln(Z_{it}) + \lambda_2 \ln(Z_{jt}) + \lambda_3 \ln(D_{ij}) + \lambda_4 \text{EU}_{ij} + \xi_{ijt}, \quad (4)$$

$$\text{Model4: } \ln Y_{ij,t} = C_4 + \gamma_1 \ln(Z_{it}) + \gamma_2 \ln(Z_{jt}) + \gamma_3 \ln(D_{ij}) + \gamma_4 \text{COOP}_{ij} + \gamma_5 \text{EU}_{ij} + \chi_{ijt}, \quad (5)$$

gde je $Y_{ij,t}$ ustvari $EX_{ij,t}$, tj. obim izvoza iz CIE zemalja u NRK, zatim $IM_{ij,t}$, tj. obim uvoza iz NRK u zemlje CIE, i TT_{ij} , tj. ukupan obim bilateralne trgovine između zemlje i i zemlje j , respektivno, $i=1$ (Kina), $j=2,3,4,\dots,17$ (CIE zemlje). Z_{it} je kineski BDP u godini t . Z_{jt} je BDP zemlje j u godini t . D_{ij} je rastojanje u kilometrima između Kine i zemlje j , $t=2000, \dots, 2022$. COOP_{ij} je *dummy* promenljiva za učešće u formatu "16+1". EU_{ij} je *dummy* promenljiva za učešće u Evropskoj uniji. ε_{ijt} , ζ_{ijt} , ξ_{ijt} , χ_{ijt} su članovi greške. Za ocenu parametara u modelima korišćena je metoda najmanjih kvadrata.

Godišnji podaci za promenljive su prikupljeni iz različitih izvora: UN Comtrade za bilateralne trgovinske tokove, Svetska banka za BDP i Great Circle Distance data za udaljenost između glavnih gradova. Analizom su obuhvaćene godine od 2000 do 2022, a skup panel podataka se sastoji od 17 zemalja sastavljenih od 16 zemalja CIE (Albanija, Bosna i Hercegovina, Bugarska, Hrvatska, Češka, Estonija, Mađarska, Letonija, Litvanija, Crna Gora, Severna Makedonija, Poljska, Rumunija, Srbija, Slovačka i Slovenija) i NRK.

Rezultati

U tabeli 1 je prikazana deskriptivna statistika za korišćene promenljive. Kako su vrednosti za srednju vrednost i medijanu za sve promenljive, isključujući *dummy* promenljive, veoma slične, to ukazuje da su promenljive normalno raspoređene. Shodno tome, *dummy* promenljive nemaju normalnu raspodelu, jer srednje vrednosti i medijana ovih varijabli značajno odstupaju. Najveću standardnu devijaciju ima promenljiva EX, što ukazuje da je izvoz veoma varijabilan u odnosu na sve druge korišćene promenljive. Međutim, promenljiva D ima

najmanju standardnu devijaciju, što je i očekivano, jer je rastojanje najmanje varijabilno u odnosu na sve druge korišćene promenljive.

Tabela 1: Deskriptivna statistika

Promenljiva	Srednja vrednost	Medijana	Std. dev.	Maksimum	Minimum
EX	18,272	18,580	2,443	21,923	6,921
BDP	17,537	17,626	1,272	20,350	13,800
BDP _{Kina}	22,417	22,868	0,967	23,619	20,435
D	8,887	8,911	0,062	8,950	8,758
IM	20,828	20,762	1,564	24,629	16,415
TT	14,045	14,006	1,589	17,785	9,546
COOP	0,316	0,000	0,466	1,000	0,000
EU	0,553	1,000	0,498	1,000	0,000

Izvor: Autorska ocena.

U tabelama od 2 do 4 predstavljeni su ocenjeni parametri na osnovu procene uticaja formata „16+1” na NRK-CIE trgovanje. Rezultati pokazuju da je svih dvanaest regresija statistički značajno i da se podaci dobro uklapaju u modele, prema F- statistikama i R^2 , respektivno.

Tabela 2: Regresiona analiza: zavisna promenljiva je EX

Promenljiva	OLS1	OLS2	OLS3	OLS4
C	45,917*** (0,002)	46,837*** (0,002)	13,241 (0,327)	16,921 (0,214)
BDP	0,870*** (0,000)	0,868*** (0,000)	0,527*** (0,000)	0,510*** (0,000)
BDP _{Kina}	0,789*** (0,000)	0,759*** (0,000)	0,511*** (0,000)	0,354*** (0,007)
D	-6,819*** (0,000)	-6,846*** (0,000)	-1,901 (0,214)	-1,906 (0,212)
COOP		0,095 (0,745)		0,469* (0,073)
EU			2,221*** (0,000)	2,268*** (0,000)
R^2	0,416	0,416	0,545	0,549
Adjusted R^2	0,411	0,409	0,539	0,542
F-statistika	82,257 (0,000)	61,560 (0,000)	103,464 (0,000)	83,956 (0,000)

Beleška: p-vrednosti su predstavljene u zagradama. ***, **, * su $p < 0,01$, $p < 0,05$, i $p < 0,1$, respektivno.

Izvor: Autorska ocena.

Tabela 3: Regresiona analiza: zavisna promenljiva je IM

Promenljiva	OLS1	OLS2	OLS3	OLS4
C	43,185*** (0,000)	43,061*** (0,000)	32,451*** (0,000)	33,305*** (0,000)
BDP	0,736*** (0,000)	0,736*** (0,000)	0,623*** (0,000)	0,619*** (0,000)
BDP _{Kina}	0,453*** (0,000)	0,457*** (0,000)	0,361*** (0,000)	0,325*** (0,000)
D	-5,110*** (0,000)	-5,107*** (0,000)	-3,495*** (0,000)	-3,497*** (0,000)
COOP		-0,013 (0,936)		0,109 (0,485)
EU			0,727*** (0,000)	0,740*** (0,000)
R ²	0,581	0,581	0,615	0,615
Adjusted R ²	0,578	0,577	0,610	0,610
F-statistika	161,637 (0,000)	120,884 (0,000)	138,800 (0,000)	110,974 (0,000)

Beleška: p-vrednosti su predstavljene u zagradama. ***, **, * su p<0,01, p<0,05, i p<0,1, respektivno.

Izvor: Autorska ocena.

Tabela 4: Regresiona analiza: zavisna promenljiva je TT

Promenljiva	OLS1	OLS2	OLS3	OLS4
C	35,061*** (0,000)	34,908*** (0,000)	22,714*** (0,005)	23,689*** (0,004)
BDP	0,736*** (0,000)	0,736*** (0,000)	0,607*** (0,000)	0,602*** (0,000)
BDP _{Kina}	0,480*** (0,000)	0,485*** (0,000)	0,375*** (0,000)	0,333*** (0,000)
D	-5,028*** (0,000)	-5,024*** (0,000)	-3,170*** (0,001)	-3,172*** (0,001)
COOP		-0,016 (0,923)		0,124 (0,432)
EU			0,836*** (0,000)	0,851*** (0,000)
R ²	0,575	0,575	0,617	0,618
Adjusted R ²	0,571	0,570	0,613	0,613
F-statistika	157,323 (0,000)	117,660 (0,000)	140,406 (0,000)	112,326 (0,000)

Beleška: p-vrednosti su predstavljene u zagradama. ***, **, * su p<0,01, p<0,05, i p<0,1, respektivno.

Izvor: Autorska ocena.

Kada su ukupna trgovina (TT) i uvoz (IM) zavisne promenljive, tada su BDP za NRK i BDP zemalja CIE, udaljenost između Kine i CIE, i članstvo u EU

statistički značajne promenljive na nivou od 1% poverenja, dok učešće u „16+1“ formatu izgleda neznačajno. Kada je izvoz (EX) zavisna promenljiva, onda je, pored statističke značajnosti BDP-a i za NRK i za zemlje CIE, članstvo u EU je statistički značajno na nivou poverenja od 1%, dok je *dummy* promenljiva za učešće u formatu „16+1“ statistički značajna na 10% poverenja, kada regresioni model uključuje sve promenljive. Međutim, rastojanje između CIE i NR Kine je neznačajno u ovom slučaju.

Diskusija i zaključci

Širenje uticaja NRK na globalnom nivou imalo je efekta i na promene trgovinskih tokova širom sveta, uključujući region Centrale i Istočne Evrope. Isto tako, inicijativa „16+1“ dočekana sa pretpostavkom da će poboljšati bilateralne trgovinske odnose i podstakne trgovinske tokove. Uz primenu gravitacionog modela, nastojali smo da ispitamo da li je inicijativa „16+1“ generisala povećanu trgovinu između NR Kine i CIE.

Prema rezultatima analize, promenljive koje utiču na bilateralnu trgovinu NRK-CIE (ukupna trgovina, izvoz i uvoz) jesu BDP NR Kine i njenih partnerskih zemalja, kao i članstvo u EU. Ovi nalazi impliciraju da ekonomski rast u NRK i CIE, uključujući članstvo u EU, imaju značajan pozitivan uticaj na bilateralne trgovinske tokove između analiziranih ekonomija.

Kada je reč o ukupnoj trgovini i uvozu iz NRK, udaljenost ima negativan uticaj na bilateralnu trgovinu, dok učešće u formatu „16+1“ nije značajno. Nalazi takođe sugerišu da članstvo u EU pozitivno utiče na povećanje obima trgovine. Ovo se može objasniti dubljom i dugotrajnijom saradnjom između NR Kine i EU, kao i činjenicom da zemlje CIE koje su istovremeno članice EU su posebno privlačne za NRK, čiji jedan od primarnih ciljeva jeste ulazak na zapadnoevropska tržišta.

Posmatrajući izvoz zemalja CIE u NRK, došlo se do zaključka da članstvo u EU i učešće u formatu „16+1“ su doprineli povećanju obima trgovinskih tokova, s obzirom na to da promenljive imaju pozitivne i statistički značajne vrednosti. Ipak, na osnovu analiziranog modela procenjuje se da je članstvo u EU značajnije u smislu svog uticaja na rast bilateralne trgovine od učešća u „16+1“. Razlog može biti to da, sem dublje saradnje između NRK i EU koja je već bila pomenuta ranije, zemlje CIE koje su članice EU imaju prednost u poređenju sa zemljama koje još nisu pristupile Uniji zahvaljujući boljoj politici podrške izvoza, kao i lakšem pristupu globalnim lancima vrednosti.

Rezultati studije korespondiraju sa nalazima Stanojevića i Qiu (2022) koji su došli do zaključka da članstvo u EU ima pozitivan i značajan uticaj na rast trgovine između NR Kine i zemalja CIE. Naši rezultati se takođe poklapaju sa rezultatima Stanojevića et al. (2021) koji tvrde da ne postoji dovoljno dokaza da je saradnja u okviru inicijative „16+1“ dovela do značajnog porasta trgovinskih tokova između zemalja CIE i NRK. Pored toga, naša studija otkriva statističku značajnost *dummy*

varijable „učesće u „16+1“ na nivou poverenja od 10% u slučaju kada je izvoz (EX) zavisna varijabla, što je u korelaciji sa rezultatima Jovičić i Minović (2021).

Govoreći o rezultatima, treba imati u vidu to da sprovedena studija ima određena ograničenja. Kao prvo, uprkos dobrim pokazateljima empirijske analize, procena bilateralne trgovine pomoću gravitacionog modela i dalje nema čvrste teorijske osnove, što implicira neophodnost njenog unapređenja. Drugo, metoda najmanjih kvadrata korišćena u studiji može biti nedosledna u pogledu prisustva heteroskedastičnosti (Santos Silva i Tenreiro, 2006) kojoj bi trebalo u budućim istraživanjima suprotstaviti metode nelinearne estimacije. Treće, ograničen izbor faktora koji utiču na trgovinu NRK-CIE je bio posmatran u ovoj studiji. Stoga, sveobuhvatnija analiza koja uključuje dodatne faktore i promenljive bi mogla doprineti verodostojnosti rezultata u budućim istraživanjima. Na kraju, zemlje CIE su razmatrane u celini; buduća istraživanja bi trebalo da analiziraju trgovinu između NR Kine i pojedinih zemalja CIE kako bi se bolje utvrdili faktori koji su doprineli povećanju uvoza i izvoza.

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CHINA-CEE TRADE DEVELOPMENT: ANALYSIS OF THE "16+1" INITIATIVE IMPACT

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Abstract

The development of trade relations between the PRC of China and the 16 countries of Central and Eastern Europe (CEE) from 2000-2022 are the subject of this research. Through the application of a gravity model, the factors that directly contribute to increased trade are examined, specifically examining the impact of CEE countries' participation in the "16+1" initiative. Empirical results show economic growth in the PRC and CEE, including CEE member-state status in the EU, has had a positive significant impact on developing bilateral trade between the PRC and CEE for all total trade (TT) (when viewed as dependent variables), as well as CEE imports to the PRC (IM) and CEE exports to the PRC (EX). Participation in the "16+1" initiative is found to have contributed to increased trade only when CEE exports to the PRC were the dependent variable. However, when compared to EU membership, participation in "16+1" was found to be less significant.

Keywords: CEE, China, "16+1" initiative, trade, gravity model

JEL: F15, F43

Introduction

Over the last three decades, the People's Republic of China (PRC) has gone through unprecedented economic growth (UNCTAD, 2021), which has led to its ranking since 2012 as the primary global exporter and second-highest global importer (Gurría, 2014). Its total trade in goods alone reached a record 42.07 trillion Yuan (\$6.3 trillion USD) in 2022 (the General Administration of Customs People's Republic of China - GACC, 2023).

In line with its economic growth, the PRC has significantly strengthened its economic ties with Central and Eastern Europe (CEE). The "16+1" format⁴¹,

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formed in 2012 to develop economic, trade, political and cultural ties between China and CEE, has substantially deepened cooperation (Bodroža & Kolavčić, 2022). The PRC has prioritized investment across economic sectors where CEE requires long-term investment (i.e., infrastructure, energy, telecommunications and agriculture) (Yue, 2018). Further, the initiative seeks to lower trade barriers between the PRC and CEE in order to improve market access and substantiate new trade potential. The initiative has also helped CEE overcome the lingering effects of the 2008 financial crisis by attracting foreign capital inflows (Matura, 2019; Szunomár, 2019). As concluded by both Vangeli and Pavličević (2019) as well as Zakić (2020), the 2008 global financial crisis was “the right opportunity” and a turning point in the development of CEE-China relations. Following the trade imbalance with China and their status as secondary economies inside the EU, many countries within the wider CEE welcomed Chinese investment and improved ties with the PRC as a means to develop their infrastructure and open access to untapped new markets (Szczudlik, 2019).

Strengthening relations between CEE and China after initializing the “16+1” format led to a rapid expansion of bilateral trade. According to the GACC, bilateral trade between CEE and China steadily grew from 2012 to 2022 (8.1% on average per annum). The total amount of goods traded between CEE and the PRC reached \$158 billion USD in 2022, a 7% year-on-year rise that more than doubled from 2012 in terms of both exports and imports. Nonetheless, this trade induced an imbalance as PRC imports to CEE grew more significantly than exports (2.6 and 1.7 fold, respectively).

Despite the overwhelming growth in trade and cooperation, there have been a number of associated challenges hindering the development of more efficient trade to the detriment of CEE countries. Among other key issues, the PRC’s strategic orientation towards a long-term expansion of exports of domestically produced products in relation to importing energy and minerals has diminished CEE’s overall influence due to the asymmetry in economic power and has heavily skewed trade in the PRC’s favor. Only four of sixteen CEE countries (Poland, Romania, Latvia and Albania) recorded a decrease in their year-over-year trade deficit in 2022. The remaining twelve have seen trade deficits with China progressively widening within the same timeframe.

The “16+1” format has also faced challenges by growing negative perceptions of the PRC in some parts of CEE. The Baltic States, Czechia and Slovakia, for example, have criticized the PRC for its “wolf warrior diplomacy”, its one-China policy towards Taiwan as well as for its poor human rights record and relatively high corruption (Kavalski, 2022). Under the official explanation that their

⁴¹ With Greece joining in 2019, the format was widened to “17+1” and following the Baltic countries’ withdrawal in 2022, the initiative has since been officially known as “Cooperation between China and Central and Eastern European Countries”.

strategic goals had divulged from the “16+1” format, Lithuania withdrew from the “16+1” in 2021, followed by Latvia and Estonia in 2022. Concerns have also arisen in some other CEE countries, primarily due to insufficient investment projects and general dissatisfaction (Salát, 2022).

Since an increase in trade volume might further economic cooperation and produce a positive net effect on economic growth for all participating economies (Jovičić et al., 2020), it is crucial to analyze whether participation in the “16+1” initiative has directly contributed to an increase in CEE-China trade or whether other factors have had a significant impact. Therefore, using the gravity model which is commonly applied to analyzing international trade, the purpose of this study is to examine bilateral trade relations between the PRC and 16 CEE countries from 2000 to 2022.

The structure of the paper is as follows. After the introduction, the second section provides a literature review, followed by the methodology section. The fourth section presents the results of the study. The final section gives a discussion with concluding marks.

Literature review

PRC-CEE cooperation

The established ties between CEE and the PRC have given life to a new debate involving novel comparative sub-regional and sub-national analyses (Bharti, 2022). Besides numerous studies examining “16+1” and the PRC’s involvement in CEE as well as the respective economic and political backgrounds of the states involved (Turcsányi et al., 2014; Vangeli & Pavličević, 2019), scholars have also been analyzing PRC-CEE ties within the Belt and Road Initiative (BRI) and “16+1” as they both interlinked and focused on enhancing connectivity and deepening collaboration (Matura, 2016; Pepermans, 2018).

Regarding the development of the economic cooperation between the PRC and CEE originating from “16+1”, studies have chiefly researched investment or trade-relation development. To illustrate, Šteinbuka et al. (2017), investigating recent EU-China investment trends along with trade cooperation and issues of expansive growth between CEE countries and China (which include the “16+1” platform), argue the PRC’s investment remains moderate but is coupled by increased trade deficits. Likewise, Grieger (2018) concludes that China-CEE trade has experienced substantial growth significantly skewed in the PRC’s favor. Grieger (2018) also distinctly notes that Chinese FDI represents an insignificant proportion of total FDI stock despite its heavy concentration in the largest CEE countries.

Andrijauskas et al. (2020), scrutinizing China-CEE relations, point to China’s modest economic impact on CEE countries as they rely primarily on trade and

investment with the EU and other such developed countries. Similarly, based on a thorough empirical investigation, Matura (2019) found no evidence of the sound impact of intensified trade relations between China and CEE, noting a weak correlation between trade and political relations.

Despite the PRC's significant cooperation development with CEE, Horváth (2020, p. 642) states that "compared to other multilateral relations, the importance of the CEE-China Cooperations is dwarfed by other multilateral cooperation", concluding that the concerns of Western European countries of expansion of CEE-China relations have been exaggerated.

Otherwise, it could be noticed that there is a general agreement (Gigov & Poposka, 2022; Stanojević et al., 2021; Szunomár et al., 2020; Jaklič & Svetličič, 2019; Jaćimović et al., 2018; Yue, 2018; and others) that, despite the PRC and CEE having significantly advanced mutual cooperation as well as trade over the last decade, the high expectations of benefits from realizing the "16+1" initiative have not been entirely met.

Gravity model

Since originally pioneering its equation in 1962, the gravity model has served as a useful tool in international-trade analysis. However, due to inadequacies in its theoretical framework, formal mathematical derivations and proofs, the model's application in social and scientific research has been varied and subject to further discussion (Li et al., 2020). Both Anderson (1979) and Bergstrand (1985) made substantial contributions to the model's formulation and theoretical background: whereas Bergstrand provided for the model's microeconomic basis by concretely linking bilateral trade and theory while also incorporating economic supply, Anderson followed a product-differentiation approach to lay the first theoretical groundwork as an economist (Shahriar et al., 2019).

The gravity model is now widely used across multiple empirical analyses (Van Bergeijk & Brakman, 2010; De Benedictis & Taglioni, 2011; Krisztin & Fischer 2015; Narayan & Nguyen, 2016; Irshad et al., 2017; Shahriar et al., 2019; Kohl, 2019; Martin & Pham, 2020; Golovko & Sahin, 2021; Yotov, 2022) to help explain and predict trade flows between countries and offer insight into the relative importance of factors such as economic size and distance in shaping international trade patterns, thereby establishing the model as a valuable resource for policymakers and businesses involved in international trade.

Relying on a diverse range of economic indicators as well as the physical distance between economies being analyzed, the gravity model has received significant application in analyzing and predicting bilateral trade flows (Head & Mayer, 2014). The gravity model incorporates several methodological and theoretical advances, including new approximations for trade barriers, as well as measures to analyze economic distance and foreign direct investment (Van Bergeijk &

Brakman, 2010). For its abilities as an analytical tool, the gravity model has been used across a range of analyses into international migration (Beine et al., 2016), agriculture and livestock (Atif et al., 2017; Luo & Tian 2018), health care (Teow et al., 2018), tourism (Santana-Gallego et al., 2016) and investment (Chang, 2014); nevertheless, the model is still chiefly applied to research on international trade to chiefly account for international capital and labor flows (Zhou et al., 2019). The model may be applied to determine economic relations between two separate economies or countries, such as the extent to which sanctions and oil prices affected foreign trade between Russia and Iran from 1994 to 2013 (Rasoulinezhad, 2016). Through the application of a thrifty-gravity model on the Baltic States (Estonia, Latvia and Lithuania), Byers et al. (2000) found their mutual trade flow to have not only decreased but also shifted to other erstwhile USSR states. In studying the collapse of the USSR, Xuegang et al. (2008) utilized three explanatory variables (GDP, GDP per capita and the Shanghai Cooperation Organization (SCO) - which were all found to be significant) to develop a gravity model for Xinjiang's bilateral trade.

A lack of uniform consensus on the gravity model's econometric specification leaves room for debate. However, panel-data usage may still present considerable advantages owing to its much more substantial sample size in relation to cross-sectional or time-series studies as it improves regression-estimate precision. Panel-data use may also help mitigate omitted variable bias and heterogeneity issues which occur frequently in cross-sectional research. Furthermore, panel-data is recommended to be applied to estimate the international-trade gravity model as omitting significant variables might also generate biased results and misleading conclusions (Pesaran, 2015).

Methodology

To investigate the impact of the “16+1” format on trade-flow development between the PRC and CEE, the gravity model approach was applied based on Tinbergen's (1962) basic form:

$$Y_{ij} = C \frac{Z_i Z_j}{D_{ij}^2}$$

Where Y_{ij} is the bilateral trade volume between country i and country j . Z_i is the GDP of country i and country j , D_{ij} is the distance between country i and country j .

The baseline equations of the extended gravity models applied in this study are estimated as follows:

$$\text{Model 1: } \ln Y_{ij,t} = C_1 + \alpha_1 \ln(Z_{it}) + \alpha_2 \ln(Z_{jt}) + \alpha_3 \ln(D_{ij}) + \varepsilon_{ijt}, \quad (2)$$

$$\text{Model 2: } \ln Y_{ij,t} = C_2 + \beta_1 \ln(Z_{it}) + \beta_2 \ln(Z_{jt}) + \beta_3 \ln(D_{ij}) + \beta_4 \text{COOP}_{ij} + \zeta_{ijt}, \quad (3)$$

$$\text{Model 3: } \ln Y_{ij,t} = C_3 + \lambda_1 \ln(Z_{it}) + \lambda_2 \ln(Z_{jt}) + \lambda_3 \ln(D_{ij}) + \lambda_4 \text{EU}_{ij} + \xi_{ijt}, \quad (4)$$

$$\text{Model 4: } \ln Y_{ij,t} = C_4 + \gamma_1 \ln(Z_{it}) + \gamma_2 \ln(Z_{jt}) + \gamma_3 \ln(D_{ij}) + \gamma_4 \text{COOP}_{ij} + \gamma_5 \text{EU}_{ij} + \chi_{ijt}, \quad (5)$$

where $Y_{ij,t}$ is $\text{EX}_{ij,t}$, i.e. the volume of export from CEE countries to the PRC, then $\text{IM}_{ij,t}$, i.e. the volume of import from the PRC to CEE countries, and TT_{ij} , i.e. the total bilateral trade volume between country i and country j , respectively, $i=1$ (China), $j=2,3,4,\dots,17$ (CEE countries). Z_{it} is China's GDP in year t . Z_{jt} is the GDP of country j in year t . D_{ij} is the distance in kilometers between China and country j , $t=2000, \dots, 2022$. COOP_{ij} is the dummy variable on participating in the "16+1" format. EU_{ij} is the dummy variable on participating in the European Union. $\varepsilon_{ijt}, \zeta_{ijt}, \xi_{ijt}, \chi_{ijt}$ are the error terms. For estimation parameters in the models, the Panel Least Square method is used.

Annual data for variables are gathered from diverse sources: the UN Comtrade for bilateral trade flows, the World Bank for GDP and the Great Circle Distance data for the distance between capital cities. Covering the years from 2000 to 2022, a panel dataset consisting of 17 countries comprised of 16 CEE countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia and Slovenia) and the PRC.

Results

Table 1 shows descriptive statistics for used variables. Therefore, the mean and median values for all variables, excluding dummy variables, are very close, indicating that the variables are normally distributed. Consequently, dummy variables are not normally distributed, because the mean and median values of these variables deviate significantly. The biggest standard deviation has the EX variable, indicating that export is highly variable among other used variables. However, variable D has the smallest standard deviation, and it is expected that distance is the least variable among other used variables.

Table 1. Descriptive statistics

Variable	Mean	Median	Std. Dev.	Maximum	Minimum
EX	18.272	18.580	2.443	21.923	6.921
GDP	17.537	17.626	1.272	20.350	13.800
GDP _{ch}	22.417	22.868	0.967	23.619	20.435
D	8.887	8.911	0.062	8.950	8.758
IM	20.828	20.762	1.564	24.629	16.415
TT	14.045	14.006	1.589	17.785	9.546

COOP	0.316	0.000	0.466	1.000	0.000
EU	0.553	1.000	0.498	1.000	0.000

Source: Authors' estimation.

Tables 2 - 4 present coefficients derived from assessing the impact of the “16 + 1” format on PRC-CEE trade. The results show that all twelve regressions are statistically significant and that the models fit the data well, according to F-statistics and R², respectively.

Table 2. Regression analysis: The dependent variable is EX

Variable	OLS1	OLS2	OLS3	OLS4
C	45.917*** (0.002)	46.837*** (0.002)	13.241 (0.327)	16.921 (0.214)
GDP	0.870*** (0.000)	0.868*** (0.000)	0.527*** (0.000)	0.510*** (0.000)
GDP _{ch}	0.789*** (0.000)	0.759*** (0.000)	0.511*** (0.000)	0.354*** (0.007)
D	-6.819*** (0.000)	-6.846*** (0.000)	-1.901 (0.214)	-1.906 (0.212)
COOP		0.095 (0.745)		0.469* (0.073)
EU			2.221*** (0.000)	2.268*** (0.000)
R ²	0.416	0.416	0.545	0.549
Adjusted R ²	0.411	0.409	0.539	0.542
F-statistic	82.257 (0.000)	61.560 (0.000)	103.464 (0.000)	83.956 (0.000)

Note: p-values are presented in parentheses. ***, **, * are p<0.01, p<0.05, and p<0.1, respectively.

Source: Authors' estimation.

Table 3. Regression analysis: The dependent variable is IM

Variable	OLS1	OLS2	OLS3	OLS4
C	43.185*** (0.000)	43.061*** (0.000)	32.451*** (0.000)	33.305*** (0.000)
GDP	0.736*** (0.000)	0.736*** (0.000)	0.623*** (0.000)	0.619*** (0.000)
GDP _{ch}	0.453*** (0.000)	0.457*** (0.000)	0.361*** (0.000)	0.325*** (0.000)
D	-5.110*** (0.000)	-5.107*** (0.000)	-3.495*** (0.000)	-3.497*** (0.000)
COOP		-0.013 (0.936)		0.109 (0.485)

EU			0.727*** (0.000)	0.740*** (0.000)
R ²	0.581	0.581	0.615	0.615
Adjusted R ²	0.578	0.577	0.610	0.610
F-statistic	161.637 (0.000)	120.884 (0.000)	138.800 (0.000)	110.974 (0.000)

Note: p-values are presented in parentheses. ***, **, * are p<0.01, p<0.05, and p<0.1, respectively.

Source: Authors' estimation.

Table 4. Regression analysis: The dependent variable is TT

Variable	OLS1	OLS2	OLS3	OLS4
C	35.061*** (0.000)	34.908*** (0.000)	22.714*** (0.005)	23.689*** (0.004)
GDP	0.736*** (0.000)	0.736*** (0.000)	0.607*** (0.000)	0.602*** (0.000)
GDP _{ch}	0.480*** (0.000)	0.485*** (0.000)	0.375*** (0.000)	0.333*** (0.000)
D	-5.028*** (0.000)	-5.024*** (0.000)	-3.170*** (0.001)	-3.172*** (0.001)
COOP		-0.016 (0.923)		0.124 (0.432)
EU			0.836*** (0.000)	0.851*** (0.000)
R ²	0.575	0.575	0.617	0.618
Adjusted R ²	0.571	0.570	0.613	0.613
F-statistic	157.323 (0.000)	117.660 (0.000)	140.406 (0.000)	112.326 (0.000)

Note: p-values are presented in parentheses. ***, **, * are p<0.01, p<0.05, and p<0.1, respectively.

Source: Authors' estimation.

When Total trade and Import are the dependent variables, the GDP for the PRC and the GDP of CEE countries, the distance between China and CEE, and membership in the EU are statistically significant variables at 1%, while participation in the “16+1” format appears to be insignificant. When Export is the dependent variable, then, in addition to the statistical significance of the GDP for both the PRC and CEE countries, as well as when membership in the EU is at a confidence level of 1%, the dummy variable of participation in the “16+1” format yields a confidence level of 10% which is also statistically significant when the regression model includes all variables. However, the distance between CEE and the PRC is indicated to be insignificant in this case.

Discussions and Conclusions

The PRC expanding its influence globally has impacted trade patterns worldwide. Likewise, the “16+1” initiative was met with anticipation to both improve bilateral trade relations and foster trade flows. Using the gravity model, we have striven to examine the question whether the “16+1” initiative has generated increased trade between the PRC and CEEC.

According to the findings of the analyses, the variables that influence all PRC-CEE bilateral trade (total trade, exports and imports) are the GDP of both the PRC and its partner countries as well as whether a state is an EU member or not. The findings imply that economic growth in the PRC and CEE, including EU membership, has a significant positive impact on the bilateral trade flows between all economies.

For total trade and imports from the PRC, the distance has a significantly negative impact on bilateral trade, while participation in “16+1” is found to be insignificant. The findings also suggest that EU membership appears to be highly beneficial to increased trade. This may be accounted for by the deeper cooperation with the PRC and the EU itself. Moreover, EU members, including those in CEE, are more attractive to the PRC, which accords with the PRC’s primary goal of entering and establishing themselves in Western European markets.

Considering the export of CEE countries to the PRC, it was concluded that EU membership and participation in “16+1” have contributed to the increase in the volume of trade flows, given that the variables yielded positive and statistically significant values. Nevertheless, our model estimates that EU membership is more significant in terms of its impact on bilateral trade growth than participation in “16+1”. Apart from the deeper cooperation between the PRC and the EU already mentioned before, the explanation can be the fact that the CEE countries that are EU members EU member provided with additional export support as well as improved access to global value chains as compared to non-EU countries.

The study’s results correspond to the findings of Stanojević and Qiu (2022), who conclude that EU membership has both a positive and significant contribution to Sino-CEEC trade growth. Our results also concur with those of Stanojević et al. (2021) who contend there to be insufficient proof that cooperation under the “16 + 1” initiative has generated a significant rise in trade flows between the PRC and CEEC. Notwithstanding, our study also reveals the statistical significance of the “participation in the “16+1” dummy variable, which yielded a confidence level of 10% when exports (EX) were the dependent variable and which correlates to the results of Jovičić and Minić (2021).

The study conducted has certain limitations that must be borne in mind. Foremost of which is that, despite its performing well in the empirical analysis, the gravity model’s estimation of bilateral trade still lacks solid theoretical underpinnings,

implying the necessity of improving its theoretical foundation. Secondly, the Panel-least square employed in the study may be inconsistent in the presence of heteroscedasticity (Santos Silva & Tenreyro, 2006), which should be counteracted by non-linear estimators applied in future research. Thirdly, there has been only a small selection of factors affecting PRC-CEE trade reviewed in this study; a more comprehensive analysis involving additional factors and variables should be considered and discussed in future research. Lastly, CEE countries were considered on the whole; future research should analyze trade between the PRC and CEE on a country-by-country basis to better pinpoint what factors contributed to increased imports and exports.

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MANAGEMENT AND BUSINESS PERFORMANCE OF THE ORGANIZATION

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Abstract

Performance measurement is crucial for evaluating the organization's progress against set goals, but it is not enough by itself. For example, although a business may record an increase in sales, this does not explain the causes of the increase. To move from mere performance measurement to effective performance management, an organization needs to analyze results and clarify their causes, as well as identify areas for improvement. A concrete example can be a situation in which a company notices a drop in the satisfaction of its customers. Instead of focusing only on data and figures, management should investigate the causes of dissatisfaction through surveys or feedback analysis. Based on these insights, it can develop strategies that will improve the user experience. In addition, the organization should be proactive and anticipate changes in strategic direction. For example, if a new trend emerges in the market, such as increased demand for sustainable products, management should be ready to adjust their strategies and resources to take advantage of the opportunity. This requires a methodology that includes data analysis, planning and implementation of actions that will help the organization to adapt and improve its performance at all levels.

Key words: *management, business, organization.*

JEL: *M15, M19.*

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Introduction

In modern business conditions, it is extremely useful to have the ability to predict the necessary changes in the strategic direction of the organization, as well as the appropriate methodology for implementing those changes. Performance management helps organizations improve their development activities by providing feedback that is specific rather than general, based on specific goals related to the desired performance measurement outcome. Many authors believe that all managerial concepts are related to performance management, which is why business performance management is often described as the foundation of all managerial disciplines. The business performance management system is a structured system that the organization builds gradually, connecting various elements such as performance measurement and evaluation, risk management, business processes and human resources, into one functional unit that is focused on improving the organization's efficiency and achieving defined goals.

It should be noted that in management research, the line between performance management and performance measurement is often not clearly defined. Different authors use different criteria to define these terms, and some even treat them as interchangeable categories. Researchers from Cranfield University, after reviewing more than 300 documents discussing the concept of performance measurement, found only 17 definitions of this term. This indicates that many authors do not define at all what they mean by the phrase "business performance measurement system" (Franco-Santos et al., 2007). Also, most of the research in the field of performance management has a theoretical character and deals with different aspects of this concept, starting from the very concept of performance to considering its interdisciplinary character. However, there is very little empirical research that provides concrete examples and models that would help implementers find appropriate solutions for specific environments (Muehlen, 2007). The lack of such studies is considered one of the key reasons for the weak application of the concept of performance management in practice (Škrinjar et al., 2008).

Management system for performance management

Changes in the modern world are becoming deeper and more frequent than before. The free market enables, but also requires, organizations to constantly adapt to changes in their environment and new requirements. Quick reaction to changes becomes crucial for the survival of companies, and the ability to quickly react to changes and the challenges that come with them, becomes a key factor of competitiveness in the global market.

Flexibility is a feature of an organization that indicates its ability to quickly react to changes in the environment, with minimal costs. This means that the organization must adapt quickly in order to amortize the threats and take

advantage of the opportunities that arise in the environment. Rapid adaptation to a changing environment becomes a condition for survival, especially in the context of growing competition on the global market, labor mobility and rapid development of new technologies (Appelbaum et al., 2017). In order to increase flexibility, companies must constantly develop their dynamic capabilities, which includes the ability to quickly react and successfully adapt to changes, as well as internal and external flexibility and responsiveness. The speed of adaptation depends on two key factors: the time it takes to recognize the signals of change and the time it takes for the organization to react to those changes. Shortening the time for both aspects of adaptation increases the organization's chances of taking appropriate action in time. The success of those actions, as well as the speed of adaptation, depend on the flexibility of the production system, applied technologies, organizational structure and culture, as well as the flexibility of the information system, which constitutes aspects of the internal flexibility of the organization (Janović & Golubović, 2024). Unlike internal flexibility, which refers to the organization's ability to adapt to external influences, external flexibility is considered the organization's ability to influence its environment. Through this influence, organizations try to become less sensitive to external changes. The external flexibility of the organization depends on the characteristics of the market (products, raw materials, workforce), as well as on the characteristics of consumers, technologies and other factors in the environment.

A key variable in an organization's ability to adapt effectively and quickly is its management (Hariyati & Tjahjadi, 2018). Modern managers are expected to focus their experience and intellectual capital (personal and corporate) on business improvement and increasing the organization's competitiveness. This is achieved, first of all, through the improvement of business processes, building the image of the organization, as well as strengthening its ability to anticipate and quickly react to changes. Adaptability, agility and innovation are just some of the key features expected of modern organizations, and their achievement is an imperative for today's management. As companies develop, new challenges and tasks for management appear. It is not only the decisions that are made, but also the choice of the way in which those decisions will be implemented. Without a doubt, managing an organization has become more demanding and complex than ever before. In the knowledge economy, the role of physical and financial resources becomes relativized in relation to intangible resources, such as human and other intellectual resources, which play a key role in value creation (Mihajlović & Todorov, 2024). Satisfying the organization's goals, while establishing a balance between effectiveness and efficiency, becomes the task of management, which must ensure the right combination of resource use. In order for the management to react in a timely manner, but also to influence the changes in the environment, it is necessary to think strategically about the long-term goals of the organization and the way of their realization. The strategic vision of the company's

development and the change management process are key to the efficient and effective realization of those goals. The biggest challenge of strategic management today is the implementation of a clearly defined strategy and the monitoring of its implementation.

Strategy implementation should turn planned strategies into concrete actions, in order to achieve the organization's goals (Savić & Bonić, 2022). If the strategic goals set in the plans are not achieved, it is a sure sign that the implementation of the strategy (or the strategy itself, or both factors) is not appropriate. The success of strategy implementation depends on the cooperation of all functional areas of the organization, including marketing, production, finance, research and development, human resources, information systems and others. The basic tasks for the successful implementation of the strategy are (Ghasemi et al., 2016):

- gaining all members of the organization to introduce and implement the chosen strategy;
- assessment of the organization's ability to implement the strategy, including harmonizing the necessary changes in the organization that enable the fruitful implementation of the strategy.

Implementation of the strategy requires serious preparation and management of its implementation. Preparation includes determining the conditions within each functional area of the organization that must be met in order for strategic plans to be successfully implemented. Then the existing conditions are assessed, in order to identify the necessary but missing conditions and the changes that should be implemented (Stevanović et al., 2019). In short, it is necessary for the strategy to be aligned with the organizational structure, knowledge and skills of employees, allocation of resources, policies, procedures, support systems, reward system and organizational culture. The greater the degree of this alignment, the greater are the chances of successfully achieving the organization's goals through the chosen strategy (assuming that the strategy is not wrongly chosen).

The efficiency and effectiveness of the strategy and its implementation must be constantly checked through the process of strategic control. Controlling includes the management function of measuring and evaluating achievements in relation to the standards of the strategic plan, for the purpose of correcting activities and realizing plans, i.e. achieving the goals of the organization. This process is called a reflexive system process, because it involves acquiring information about whether and to what extent the organization achieves its goals with planned activities, as well as taking additional and corrective actions that are necessary and/or sufficient to achieve those goals.

Different approaches to performance management

Until the mid-nineties of the last century, researchers of organizational performance and performance management approached the topic predominantly from the point of view of methodological reductionism, while approaches based on methodological holism were extremely rare. Methodological reductionism implies an approach in which the understanding of complex systems is achieved by analyzing the structure and behavior of their constituent parts. This approach starts from the assumption that the understanding of the system is best if its parts are observed, which allows for a detailed investigation of each individual part of the system. On the other hand, methodological holism is an approach that believes that complex systems cannot be fully understood by analyzing their parts. The holistic approach claims that it is best to study the system as a whole, because wholes have their own specific processes and laws that are impossible to understand if we focus only on the analysis of individual parts. According to this approach, understanding a complex system is best accomplished by studying the principles that govern the entire system, not just its individual components. The difference between these two approaches lies in the fact that reductionism goes "top-down", giving more detailed information about the parts, but ignoring key information about the whole structure. On the other hand, holism tends to clarify the behavior of the system as a whole, considering that such an understanding cannot be obtained only by analyzing its component parts. The following text will describe some of the concepts and approaches that left the deepest mark on the development and understanding of performance management.

Performance management approaches are often considered in the context of management by objectives (MBO). This concept, which is largely related to Peter Drucker (Drucker, 1954), represents a very effective approach to performance management, based on the idea that goals indicate the desired state, that is, what we want to achieve for individuals, groups or the organization as a whole. As such, goals serve as guidelines for all management decisions and set criteria against which results can be measured. The very process of formulating goals is complex, because their determination is one of the most important managerial tasks. When the goals are clearly defined, the manager's task becomes to direct the organization towards their achievement. In order to describe the desired state, organizations usually formulate a set of goals, which should be aligned, realistic and motivational. Goal management involves several key steps:

- recognizing the goals of the organization,
- abandoning goals that are no longer relevant,
- identifying and resolving conflicts between goals and
- prioritization of goals in a consistent manner.

Although the terminology of the classic MBO formulation is no longer used literally today, this approach has evolved into a broader framework for

performance management that includes a number of integrated managerial functions:

- setting clear and precise goals of the organization,
- formulation and coordination of individual goals aimed at achieving the general goals of the organization,
- systematic measurement and evaluation of performance with the use of corrective actions to achieve set goals.

This approach allows management to clearly define expected results, monitor progress toward those goals, and take appropriate actions to ensure that the organization achieves its strategic goals.

Rummler & Brache (1995) were instrumental in developing a holistic or systems approach to performance management. Their methodology focuses on several key questions that are of essential importance for organizations: how to design an organization and how to manage it, how to analyze and improve processes, how to design jobs and how to manage implemented processes. According to Rummler and Brache, the basic starting point for managing organizations in modern conditions is a systemic, horizontal view of the organization's operations. This approach differs from the traditional vertical view, which mainly focuses on the hierarchical structure of the organization, but ignores important aspects, such as: users and consumers, products or services delivered to users and the meaning of the workflow through which they are developed, produced and delivered products or services. In contrast to a vertical, horizontal systems approach, it allows to see all the key actors that are left out in the traditional view, including workflows, users and internal processes. Also, this approach allows understanding how work takes place through processes that cross the boundaries of business functions, as well as internal relations between users and suppliers in the production of services or products. Rummler and Brache distinguish three levels of performance management:

- performance management of the organization, at the level of the entire organization,
- performance management of business processes, which cross different functions within the organization,
- performance management of work, work teams and individuals, which is aimed at operational levels and employees.

For all three categories, the common characteristic is that the value of the organization is created through internal business processes, and success depends on the efficiency and effectiveness of those processes in achieving the organization's goals. According to Rummler and Brache, a fundamental element of systems theory applied to organizations is adaptation. In the modern world, changes have become deeper and more frequent, which requires that organizations

constantly adapt to changes in their environment, and those that do not, simply disappear. The key factor for the successful adaptation of the organization is management, which interprets internal and external feedback and reacts to them so that the organization maintains a balance with the external environment. Adaptation is considered a process, not a simple event, and in order to be successful, management must use a systemic approach that enables the anticipation of changes and proactive adaptation to those changes, rather than just reacting reactively to situations that have already arisen. This approach is significant because it offers a comprehensive systematic framework that shows how internal and external factors are linked in an organization's ecosystem and how each element affects the others.

In the mid-nineties, Kaplan & Norton (1996) in their work also advocated a holistic approach to the management of organizational performance, stressing that traditional financial models are not sufficient for adequate performance measurement. These models often only measure the past and do not consider future investment and value. In response to this disparity, they developed the Balanced Scorecard (BSC) system, which augments financial metrics of past performance with metrics that indicate an organization's future performance. The BSC approach considers the organization's performance from four key perspectives (Penjišević et al., 2024):

- customer/user perspective,
- the perspective of internal business processes,
- learning and development perspective,
- financial perspective.

These four components allow organizations to better understand their performance, to create a balance between current and future goals and enable a proactive strategy for growth and development.

The performance management process

Performance management is a continuous process that cannot be seen as a one-time activity. Different approaches and frameworks are used to interpret this process, but all focus on the key stages that enable the organization to achieve optimal results and improve its performance over time. One of the most well-known frameworks includes the following stages (Armstrong, 2006):

- planning – in this phase, it is decided what and how to do it, goals are set and a plan is developed to achieve those goals.
- action – here the activities foreseen in the plan are carried out in order to complete the tasks and achieve the goals.
- monitoring - continuous monitoring of what was done and measurement of results. This phase allows to evaluate the progress in the realization of the plan.

- intervention - analysis of achieved results, determination of possible differences between set goals and actual results, and taking corrective measures to bring performance in line with the plan.

Another framework used in simple businesses includes four key components (Dresner, 2008):

- vision and strategy - basic direction and long-term goals of the company.
- general and specific goals - elaboration of the strategy into concrete goals that can be achieved.
- execution – implementation and performance of tasks in order to achieve success.
- evaluation - evaluation of the results in order to assess the effectiveness of the set goals and execution.

Another example of a performance management model used is the approach of Pulakos (2004) which includes the following stages:

- performance planning – defining goals and expected performance.
- continuous feedback – providing regular feedback to employees to enable real-time correction.
- involving employees - involving employees in the process, which can increase their engagement and responsibility.
- evaluation, measurement and evaluation of performance - systematic evaluation of performance based on set goals.
- performance analysis – analysis of results and determination of what needs to be improved.

Defining the expected performance, be it results or behaviors related to the organization's goals, requires a prior understanding of the set goals. These goals must be well thought out and elaborated, in order to pinpoint the specific expected results and behaviors at the level of the organization, as well as in specific domains or sectors within it. This enables accurate monitoring and measurement of success in achieving those goals.

In order for the set goals to be successfully achieved, it is necessary to ensure that the desired results are in accordance with the goals of the organization, so that the contribution in a certain domain is a function of the overall goals of the organization. This enables effective alignment and synergy between different sectors within the organization. Through this process, it is possible to determine the relative importance of different results and, if necessary, determine their priorities, thus directing attention to the most critical aspects of the business. When setting goals, a number of factors are often implicitly understood that must function successfully in order for the goals to be achieved. These assumptions must be explicitly identified to ensure their successful operation. Critical success factors are key business areas that must be in place for the organization to achieve

its strategic goals and fulfill its mission. They include the key supporting activities, resources and processes that are necessary to achieve the goals. Without their successful functioning, the organization cannot effectively realize its strategic goals. The identification of critical success factors allows management to focus on key areas that have the greatest impact on the success of the organization, thereby minimizing risks and maximizing the chances of success.

For effective performance management, it is crucial to develop a set of indicators that clearly and accurately reflect the achievement of the organization's goals. These indicators allow management to measure how well the organization and its processes achieve the set goals.

According to Parmenter's classification, these indicators can be labeled as result indicators or simply performance results (Parmenter, 2007). These indicators directly correlate with plan sizes from business plans, enabling monitoring of progress and fulfillment of goals. In addition to the result indicators, it is necessary to identify performance indicators, which monitor the level of provision of critical success factors. These indicators refer to processes and activities that enable the organization to achieve its goals in the future, and include key aspects that affect the organization at a strategic level. Key performance indicators are a set of indicators that enable the monitoring of these critical performances, focusing on the results that ensure the current and future success of the organization. They enable management to identify which factors have the greatest impact on success and to focus resources and activities on them. In addition, performance standards represent normative values that define the minimum level of acceptable results in given conditions. They serve as reference points for measuring the effects needed to achieve the objectives, taking into account the sustainability of those effects over time. Performance standards help an organization clearly define what is "acceptable" in the context of its goals. Finally, the performance plan should include all the above-mentioned elements: set goals, desired results, certain relative importance of those results, compliance with broader organizational goals, methodology for measuring and evaluating results, as well as set standards. This plan is the basis for performance management, as it enables systematic monitoring and response to changes and challenges in achieving goals.

Performance measurement represents the process of systematically determining the value of previously defined performance indicators, which can be quantitative (numerical) or qualitative (descriptive). These indicators allow the organization to monitor progress in achieving goals and evaluate the results of its activities over time. Measurement is carried out through the continuous collection of data on relevant quantities, which enables management to identify the weaknesses and strengths of the organization in achieving the set goals. Performance appraisal refers to the process of comparing actual achievements with performance

standards, which means evaluating the extent to which the organization's goals have been achieved. This helps in identifying deviations from planned results and enables corrective actions to be taken to improve performance. Performance appraisal is key to effective management of an organization because it allows monitoring progress and directing resources to where they are most needed.

For proper performance management, feedback is essential, as it helps to provide employees with guidelines for further work, as well as motivation to achieve better results. The effectiveness of feedback depends on several factors:

- frequency and time schedule – regular provision of feedback enables timely correction and improvement of performance.
- positive or negative nature - although negative feedback can be useful for correcting mistakes, positive feedback can significantly improve employee motivation.
- specificity and significance - specific feedback, which describes in detail how the employee can improve his performance, is more effective than general and vague comments.
- source credibility – Feedback that comes from reputable and expert sources, such as managers or colleagues, has a greater impact on behavioral changes.

The feedback functions are:

- guidance function - feedback provides employees with clarity about what behavior is necessary to achieve success, which helps improve their performance.
- motivational function - feedback also serves as a reward for achieved results, motivating employees to continue to achieve goals, as they are clearly linked to possible rewards.

Conclusion

When the achieved result does not reach the set standard and when there is a significant deviation from the target performance, and assuming that the resources and circumstances were normal and that the standard was set realistically, the performance is considered inadequate. In this case, it is necessary to develop a performance improvement plan in order to achieve the desired levels. The improvement plan can be implemented at different levels: organization, business process or individual job positions. For effective management of performance improvement, the plan should be: documented (to ensure transparency and enable control of progress), systematically implemented (which implies undertaking defined actions aimed at improving performance) and constantly monitored (to monitor progress towards goals and evaluate effects of activities undertaken).

If the performance improvement goals are achieved in accordance with the plan, the implementation of the plan can be suspended. Otherwise, the plan continues and corrective actions are taken. If the corrective measures do not lead to the desired results, the plan is revised and adjusted to achieve the desired improvements. Constant monitoring and adjustment of the performance improvement plan is essential to ensure long-term success. Only through a continuous process of monitoring and quick reactions to unmet goals, can an organization successfully improve its performance and ensure sustainable progress.

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PREDICTION OF ACADEMIC SUCCESS BASED ON PERSONALITY CHARACTERISTICS, SELF-EFFICACY AND ACHIEVEMENT MOTIVATION AMONG STUDENTS IN SERBIA

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Pregledni rad

Abstract

The subject of research in this paper is the connection between personality characteristic according to the HEXACO model, self-efficacy and dimensions of achievement motives on the one hand and academic success on the other hand among students in Serbia. The aim is to determine to what extent personality traits, achievement motive and self-efficacy influence academic success. The average in the last year of study, the overall average at the faculty and satisfaction with academic achievement were determined as indicators of the student's academic success. The research sample consisted of 269 respondents; statistical data processing was carried out using the IBM SPSS Statistics 21 program. Descriptive statistics (AS, SD), Pearson's correlation coefficient and multiple linear regression analysis were used in data processing. The results showed statistically significant correlations of honesty, conscientiousness, self-efficacy, all dimensions as well as overall achievement motive on the one hand and indicators of academic achievement on the other hand. This study provides a better understanding of the personality traits, beliefs, and motivations of students that contribute to academic achievement.

Key words: *HEXACO model, academic success, achievement motive, self-efficacy, Serbia.*

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Introduction

Individual variation exists in every aspect of thinking, feeling, and behaving. Modeling the fundamental components of personality structure represented a revolutionary discovery in the study and understanding of individual variation. These theories explain what individual differences are in terms of personality traits and how these differences can be succinctly but thoroughly summarized in terms of basic personality dimensions. In general, personality traits are relatively stable patterns of thinking, mood, and behavior that indicate a tendency to act in a certain way when faced with certain situations (Zettler, et al., 2020).

Predicting students' performance can help identify the students who are at risk of failure and thus management can provide timely help and take essential steps to coach the student to improve his performance. Today academic success of students of any professional Institution has become the major issue for the management. An early prediction of students at risk of poor performance helps the management take timely action to improve their performance through extra coaching and counseling (Mishra, et al., 2014). Predictive modeling, profiling and segmentation, which are tools used for portfolio risk management and targeted marketing in the financial industry, are now utilized to monitor student's academic progress and to customize programs for student academic engagement (Ornelas, Ordonez, 2017).

The general field of educational data mining for predicting student success has drawn considerable attention from the research community. Education's primary aim has always been to boost student academic performance (Gundogan, Radulović: 2023). Many studies have been performed over the years by researchers and educators to assess the factors that affect (positively or negatively) student achievement in their academic track. Early prediction of student success in the correct manner would enhance both student retention and the assessment methods used by the students. This approach would also support educators and education officials by providing them with more knowledge about their students' learning abilities as well as how to better assist students who are falling behind in a given set (Viswanathan, Vengatesh, 2021).

Models of basic personality structure are among the most widely used frameworks in psychology and beyond, and have significantly advanced the understanding of individual differences in a host of consequential outcomes. Over the past decades, two such models have become most widely used: the Five Factor Model (FFM) or Big Five, respectively, and the HEXACO Model of Personality (Thielmann, et al., 2021). Since 2004, when the first version of the HEXACO model was published (Lee & Ashton, 2004), the number of studies using the HEXACO model has grown rapidly (de Vries, et al., 2019).

Literature review

In the last two decades of the 20th century, the Big Five model developed into a dominant theoretical and research paradigm when it comes to the structure of basic personality traits (Goldberg, 1990; John, Naumann, Soto, 2008; Costa, McCrae, 2008, Mata et al., 2021). According to this model, personality is structured from five basic, mutually orthogonal traits: neuroticism, extraversion, openness, cooperation and conscientiousness. However, studies conducted in the late 1990s provided indications that a six-factor structure of latent dimensions should be examined. Probably the best-known operationalization of the revised lexical model of personality is the HEXACO structure (Ashton, Lee, 2007; Lee, Ashton, 2008; Ashton, Lee, De Vries, 2014; De Raad, et., al 2014; Anglim, et al., 2018), whose name is an acronym for the dimensions represented in it: H – Honesty/Humility, E – Emotionality, X – eXtraversion, A – Agreeableness, C – Conscientiousness and O – Openness.

The trait of honesty is characterized by qualities such as honesty, modesty and avoidance of greed as opposed to conceit and greed. People with a high level of this dimension are not prone to cheating and manipulation, nor are they motivated by material gain or social status. Conversely, individuals who are low on the honesty dimension tend to break the rules, are motivated by material gain, and have a strong sense of self-confidence (Camps, et al., 2016). Timidity, anxiety, dependence on others, and sentimentality versus fearlessness, independence, and unemotionality are the basic descriptions of the dimension of emotionality. Highly emotional people are more likely to experience fear and anxiety, and have a need for close relationships and for receiving emotional support. On the other hand, people with low emotionality have no worries or fears, even in stressful or dangerous situations, and they do not share their emotions with others (Pilch, 2023). The extraversion characteristics of this dimension are sociability, liveliness, social boldness and self-esteem as opposed to shyness and passivity. People with high extraversion feel positive in their own skin, enjoy company and interactions with people, and experience positive feelings of enthusiasm and energy. Conversely, people on the opposite side of the dimension feel uncomfortable in social situations, that is, they are more shy and passive in their relationships with others and are indifferent to social activities and feel less optimistic (Li, et al., 2022). Patience, gentleness, flexibility and forgiveness are associated with agreeableness. Gentle nature and tolerance is specific for individuals who have a high expression of agreeableness, as well as willingness to compromise and cooperate with others, and temper control. The opposite sex is characterized by a sudden temperament, irritability, criticality and a tendency to argue. The traits that define conscientiousness are diligence, organization, prudence, and perfectionism versus sloppiness, carelessness, irresponsibility, and laziness. Dedication to work, striving for perfection and caution when making decisions are characteristics of a person with a high degree of conscientiousness

(Shu, et al., 2017; Anglim, O'conno, 2019). On the other hand, people with a low level of conscientiousness avoid difficult and demanding tasks, and make decisions impulsively or with little thought. The dimension of openness to experiences consists of curiosity, appreciation of aesthetics, creativity and unconventionality as opposed to unimaginativeness and conventionality. Creativity, imagination, originality and intellectual curiosity and interest in unusual people and ideas are specific to people who have a high degree of openness to experiences. People with a low expression of this dimension are not intellectually curious, so they are not attracted to unconventional ideas (Hakimi, et al., 2011).

The concept of self-efficacy was constructed by Albert Bandura in the seventies of the 20th century. Bandura (1977) defined self-efficacy as an individual's belief about his own abilities to organize and perform certain activities that are essential in order to realize a set goal. Self-efficacy represents the subjective experience of personal competencies related to the achievement of various tasks (Miletić, 2022). According to this theory, self-efficacy increases with success, vicarious experience, verbal persuasion, and emotional arousal. It is important to emphasize that success is the most important of the mentioned factors. Success raises expectations of future success, and failure lowers those expectations. When a strong sense of self-efficacy is developed after repeated successes, occasional failures will have no significant impact (Kpolovie, et al., 2014; Sokić, et al., 2021).

The achievement motive is reflected in a person's need to achieve significant success in an activity and to excel in relation to other people. Murray (1938) defines the achievement motive as a complex need that manifests itself in the desire to achieve something that is difficult to achieve; to master things, people and ideas; to overcome obstacles and achieve something that is highly valued; to compete with others, to excel in front of others and to surpass others; to make a great effort to achieve something that is difficult. Therefore, the motive for achievement represents a complex motive consisting of several simple ones, among which the motive for fighting, the motive for dominance, the motive for prestige, self-actualization, the level of aspiration, etc. stand out. The achievement motive represents a person's constant attempts to compete with "standards of excellence" such as success, victory, overcoming existing results (other people's results, own, imagined).

Material and Method

Sample and research instruments

The research sample consisted of 269 respondents, of which 89 were male students and 180 female students, with an average age of 21.38 years ($SD=2.17$). Students from the Faculty of Sport, Faculty of Law, Security and Management in

Niš, University of "UNION-Nikola Tesla", Faculty of Political Sciences of the University of Belgrade (majoring in communication), Faculty of Philosophy, University of Belgrade, and Faculty of Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac were interviewed. The sample consisted of students attending the second (109 respondents), third (58) and fourth (102) years of study. Most of the respondents come from complete families (233), while 30 respondents live only with their mother (30), and 6 only with their father.

HEXACO basic personality traits were measured with the HEXACO-60 instrument (Ashton & Lee, 2009). That instrument, which is an operationalization of the HECACO model of personality structure, measures six broad personality domains: honesty, extraversion, emotionality, agreeableness, conscientiousness, and openness to experience. The HEXACO-60 questionnaire contains a total of 60 statements that measure those 6 domains (10 for each factor). Respondents on a scale of 1 to 5 (from do not agree at all to completely agree) express their degree of agreement with each of the 60 statements. Examples of items of measured dimensions are: for the dimension of honesty "I would never accept a bribe, even a very large one", for emotionality "Sometimes I can't help but worry about little things", for the dimension of extraversion "I prefer jobs that involve contact with people rather jobs where I would work alone", for pleasantness "I usually don't get angry with people, even those who hurt me badly", for the dimension of conscientiousness "I plan in advance and organize myself in order to avoid finishing something at the last minute" and end for openness "I like people who have unconventional views." The calculated reliabilities (Krombach's alpha coefficient) on the scale of this instrument are high (honesty $\alpha=0.81$; emotionality $\alpha=0.76$; extraversion $\alpha=0.80$; agreeableness $\alpha=0.64$; conscientiousness $\alpha=0.81$; openness $\alpha=0.73$).

The General Self-Efficacy Scale (GSE, Schwarzer, Jerusalem, 1995) questionnaire was used to examine self-efficacy. The questionnaire contains 10 items ("Even when I'm in trouble, I can usually think of a solution"). Respondents indicate their agreement with a certain statement on a four-point Likert-type scale. The coefficient of internal consistency is 86.

MOP 2002 (Franceško, Mihić and Bala, 2002) is intended to measure achievement motives. The instrument consists of 55 statements with five-point Likert-type answering scales. This instrument consists of four subscales that measure general achievement motive factors. These are, first of all, competition with others, a factor that is determined by statements that point to a person's tendency to stand out in front of others and be more successful than others (an example of the statement is: "Competition with others is the biggest incentive for me"). The second subscale is persistence in achieving goals, i.e. a factor determined by statements describing persistence (an example of a statement is: "At any cost, I must achieve success in the activities I am engaged in"). The third

subscale is the achievement of goals as a source of satisfaction, which consists of statements related to the tendency to achieve goals, the fulfillment of which is perceived as a reward (an example of the statement is: "A successfully completed job is the greatest reward for me"). The fourth subscale is orientation towards planning, and it is determined by statements that describe a person's tendency to plan activities in order to fulfill set goals (an example statement is: "I plan everything in advance in order to achieve better results"). In this paper, the internal consistency reliability for the scale as a whole is $\alpha=0.95$. The reliability of the subscale competition with others is $\alpha=0.92$, the subscale persistence in achieving goals $\alpha=0.89$, the subscale achievement of goals as a source of satisfaction $\alpha=0.87$ and the subscale orientation towards planning $\alpha=0.87$.

For the purposes of this research, a questionnaire was created that contained the following variables: gender, age, year of study, faculty the student attends, parents' education, work status (employed or unemployed) of the parents, completeness of the family in which the student grows up (whether the respondent lives only with one or both parents), satisfaction with academic achievement, the average in the last year of study as well as the overall average at the university. The research was conducted in November and December 2023. Respondents were informed about the purpose of the research, anonymity and the method of data use. Filling out the questionnaire took an average of 25 minutes. Statistical data processing was carried out using the IBM SPSS Statistics 21 program. Descriptive statistics (AS, SD), Pearson's correlation coefficient and multiple linear regression analysis were used in data processing.

Objectives of the Study

- 1) Examine the connection between HEXACO personality traits, self-efficacy and dimensions and the overall achievement motive on the one hand and the average in the last year of studies on the other hand
- 2) Examine the connection between HEXACO personality traits, self-efficacy and dimensions and the overall achievement motive on the one hand and the overall average at the university on the other hand
- 3) Examine the connection between HEXACO personality traits, self-efficacy and dimensions and the overall achievement motive on the one hand and satisfaction with academic achievement on the other hand
- 4) Examine the prediction of the average prediction in the last year of studies based on HEXACO personality traits, self-efficacy and achievement motive dimensions
- 5) Examine the prediction of the overall average at the university based on HEXACO personality traits, self-efficacy and achievement motive dimensions

- 6) Examine the prediction of academic achievement satisfaction based on HEXACO personality traits, self-efficacy and achievement motive dimensions.

Result and discussion

The paper first presents the results of descriptive statistics, then the correlations of the basic research variables (HEXACO personality traits, self-efficacy and dimensions and overall achievement motive) on the one hand and the average in the last year of study on the other hand for the entire sample. The established correlations of the basic research variables (HEXACO personality traits, self-efficacy and dimensions and overall achievement motive) on the one hand and the overall average at the faculty on the other hand are also shown. It is important to note that the mentioned correlations were obtained on a sample of third and fourth year students. Therefore, these correlations were not obtained in the sample of second-year students because they only have the average in the last year of study as an indicator of academic achievement. Then the correlations of basic variables and satisfaction with academic achievement are presented. The results of a linear regression analysis, which was carried out with the aim of predicting the average in the last year of studies based on HEXACO personality traits, self-efficacy and achievement motive dimensions, are presented for the entire sample. Then the results of the regression analysis are presented, in which the criterion is the overall average at the university and the HEXACO predictors are personality traits, self-efficacy and the dimensions of the achievement motive on a sample of third- and fourth-year students. Finally, the results of a linear regression analysis were presented, which was conducted with the aim of predicting satisfaction with academic achievement based on HEXACO personality traits, self-efficacy and achievement motive dimensions on the entire sample.

Table 1. Descriptive statistics of basic variables

	AS	SD
Honesty	3.64	.73
Extraversion	3.31	.77
Emotionality	3.23	.73
Pleasantness	3.11	.62
Conscientiousness	3.68	.73
Openness experiences	to 3.65	.69
Self-efficacy	3.20	.55
Perseverance achieving goals	in 3.83	.70
Competing with others	3.10	.82

Achieving goals as a source of satisfaction	4.17	.62
Orientation towards planning	3.45	.92
Overall achievement motive	3.60	.62
Satisfaction with academic achievement	3.97	.96
Average grade in the last year of study	8.30	.80
Overall average grade for previous studies	8.25	.75

Table 1 presents the determined correlations of the basic research variables (HEXACO personality traits, self-efficacy and dimensions and overall achievement motive) on the one hand and the average in the last year of studies on the other hand.

Table 2. Correlations of the basic research variables on the one hand and the average in the last year of studies on the other hand

	Average in the last year of study	
		P
Honesty	.201**	.001
Extraversion	.099	.104
Emotionality	-.009	.878
Pleasantness	.091	.135
Conscientiousness	.392**	.000
Openness to experiences	.112	.068
Self-efficacy	.249**	.000
Perseverance in achieving goals	.277**	.000
Competing with others	.126*	.040
Achieving goals as a source of satisfaction	.224**	.000
Orientation towards planning	.225**	.000
Overall achievement motive	.242**	.000

* p < 0.05; ** p < 0.01; *** p < 0.001.

Based on the results in Table 2, we observe statistically significant positive correlations of the traits of honesty and conscientiousness on the one hand and the average in the last year of studies on the other hand. The traits of extraversion, emotionality, agreeableness and openness to new experiences are not related to the average in the last year of study. Furthermore, there is a statistically significant positive correlation of self-efficacy and average in the last year of studies. Statistically significant positive correlations of all dimensions as well as the overall motive of achievement on the one hand and the average in the last year of studies on the other hand were established.

Table 3. Correlations of the basic variables of the research on the one hand and the overall average on the studies on the other hand

	Total average during studying	
		P
Honesty	.187**	.009
Extraversion	.047	.512
Emotionality	-.050	.487
Pleasantness	.075	.296
Conscientiousness	.410**	.000
Openness to experiences	.005	.947
Self-efficacy	.289**	.000
Perseverance in achieving goals	.276**	.000
Competing with others	.201**	.005
Achieving goals as a source of satisfaction	.218**	.002
Orientation towards planning	.142*	.049
Overall achievement motive	.256**	.000

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Note: the correlations in Table 3 were obtained on a sample of third- and fourth-year students, given that the average in the last year of second-year students is the same as the total average in the studies.

The data in Table 3 indicate that statistically significant positive correlations were found between the traits of honesty and conscientiousness on the one hand and the overall average across the studies on the other hand. Furthermore, the traits of extraversion, emotionality, agreeableness and openness to new experiences are not related to the overall average in the studies. The results showed a statistically significant positive correlation of self-efficacy and the overall average in studies.

Statistically significant positive correlations of all dimensions as well as the overall motive of achievement on the one hand and the overall average on the studies on the other hand were also determined.

Table 4. Correlations of basic research variables and satisfaction with academic achievement

	Satisfaction with academic achievement	
		P
Honesty	.345**	.000
Extraversion	.291**	.000
Emotionality	-.007	.904
Pleasantness	.066	.279
Conscientiousness	.369**	.000
Openness to experiences	.043	.480
Self-efficacy	.362**	.000
Perseverance in achieving goals	.413**	.000
Competing with others	.118*	.050
Achieving goals as a source of satisfaction	.377**	.000
Orientation towards planning	.227**	.000
Overall achievement motive	.317**	.000

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

The results showed statistically significant positive correlations of the traits of honesty, extraversion and conscientiousness on the one hand and satisfaction with academic achievement on the other. The traits of emotionality, agreeableness, and openness to new experiences are not related to satisfaction with academic achievement. Furthermore, there is a statistically significant positive correlation of self-efficacy and satisfaction with academic achievement. Statistically significant positive correlations of all dimensions as well as the overall motive of achievement on the one hand and satisfaction with academic achievement on the other hand were established.

In the continuation of this paper, the results of three regression analyzes are presented. First, a multiple regression analysis was presented, which was carried out with the aim of predicting the average in the last year of studies based on a set of predictors of personality traits, self-efficacy and achievement motive dimensions on the entire sample. Then the results of the prediction of the overall average at the university based on a set of predictors (HEXACO personality traits, self-efficacy and achievement motive dimensions) were presented. It is important

to note that the second regression analysis was performed on a sample of third- and fourth-year students. This analysis did not include second-year students because they only had the average in the last year of study as an indicator of academic achievement. And finally, the results of the third linear regression analysis, which was carried out with the aim of predicting satisfaction with academic achievement based on HEXACO personality traits, self-efficacy and dimensions of achievement motives on the entire sample, are presented.

Table 5. Prediction of the average in the last year of studies based on a set of predictors of personality traits, self-efficacy and achievement motive dimensions

Prediction of the average in the last year of study	B	T	Sig.
Honesty	.087	1.199	.231
Extraversion	-.112	-1.517	.131
Emotionality	.036	.570	.569
Pleasantness	.116	1.885	.061
Conscientiousness	.342	3.688	.000
Openness to experiences	.078	1.339	.182
Self-efficacy	.168	1.865	.063
Perseverance in achieving goals	.010	.077	.938
Competing with others	.081	1.007	.315
Achieving goals as a source of satisfaction	-.093	-.862	.390
Orientation towards planning	.006	.076	.940

The multiple correlation coefficient ($R = 0.445$) is statistically significant ($F(11) = 5.713$; $Sig = .000$). It was found that 19% of the variability ($R^2 = 0.198$) of the average in the last year of studies can be explained on the basis of a set of predictors of personality traits, self-efficacy and achievement motive dimensions. The results showed that the only statistically significant predictor of the average in the last year of studies is conscientiousness. Other predictors are not statistically significant.

Table 6. Prediction of the overall average in the studies based on a set of predictors of personality traits, self-efficacy and achievement motive dimensions

Prediction of the overall average in the studies	B	T	Sig.
Honesty	.052	.616	.539
Extraversion	-.225	-2.541	.012
Emotionality	.059	.813	.417
Pleasantness	.164	2.331	.021
Conscientiousness	.483	4.408	.000
Openness to experiences	-.038	-.575	.566
Self-efficacy	.250	2.296	.023
Perseverance in achieving goals	.048	.320	.749
Competing with others	.196	2.058	.041
Achieving goals as a source of satisfaction.	-.191	-1.460	.146
Orientation towards planning	-.179	-1.827	.069

Note: the correlations in Table 3 were obtained on a sample of third- and fourth-year students, given that the average in the last year of second-year students is the same as the overall average in the studies

The results showed that the coefficient of multiple correlation ($R = .514$) is statistically significant ($F(11) = 5.910$; $Sig = 0.000$). Of the total variability of the criteria, 26% of the variability ($R^2 = 0.26$) can be explained on the basis of a set of predictors of personality traits, self-efficacy and achievement motive dimensions. By looking at the partial standardized regression coefficients, it is concluded that extraversion, agreeableness, conscientiousness, self-efficacy and competition with others have a statistically significant partial contribution to the explanation of individual differences in the overall average of the studies. Other predictors are not statistically significant.

Table 7. Prediction of satisfaction with academic success based on a set of predictors of personality traits, self-efficacy and achievement motive dimensions

Prediction of satisfaction with academic success	B	T	Sig.
Honesty	.297	4.382	.000
Extraversion	.120	1.725	.086
Emotionality	.044	.734	.464
Pleasantness	.008	.145	.885
Conscientiousness	.072	.828	.408

Openness to experiences	-.048	-.864	.389
Self-efficacy	.208	2.455	.015
Perseverance in achieving goals	-.004	-.034	.973
Competing with others	-.040	-.535	.593
Achieving goals as a source of satisfaction	.175	1.736	.084
Orientation towards planning	-.026	-.325	.746

The multiple correlation coefficient ($R = 0.541$) is statistically significant ($F(11) = 9.617$; $Sig = .000$). It was found that 26% of the variability ($R^2 = 0.263$) of satisfaction with academic success can be explained based on a set of predictors of personality traits, self-efficacy and achievement motive dimensions. The results showed that honesty and self-efficacy are statistically significant predictors of satisfaction with academic success. Other predictors are not statistically significant.

The obtained findings are significant, not only for researchers in order to better understand the academic achievement of students, but also for psychologists, pedagogues, professors, and students themselves. The research results show that personality traits, achievement motive and self-efficacy are significant predictors of academic achievement, which suggests that they must be taken into account when creating interventions to increase academic success. It is important that psychologists, pedagogues and professors in their work with students get to know their characteristics, beliefs and motives and based on that develop ways and strategies to increase academic achievement. This study provided a better understanding of the personality traits, beliefs, and motives of students that contribute to academic achievement.

Conclusion

In this paper, statistically significant positive correlations of the traits of honesty and conscientiousness on the one hand and indicators of academic success on the other hand were established. The correlation between the trait of conscientiousness and academic success has been consistently shown in numerous studies (Conard, 2006, Wan, Liu, Wang, Wang, 2023; John, John, Zia-ur-Rehman Rao, 2020). Students who have a pronounced trait of conscientiousness are characterized by self-control, discipline, and effort in achieving goals. Such students put a lot of effort into learning, which results in greater confidence in their own abilities and greater success. On the other hand, students with lower conscientiousness are to a greater extent irresponsible, unscrupulous, lazy and do not invest continuous effort in their development, do not believe in their competence and do not have high self-confidence and achieve lower academic

success. Furthermore, the results showed statistically significant correlations between honesty and indicators of academic performance. Students with a more pronounced dimension of honesty are fairer and more virtuous as well as more academically successful. In contrast, students who tend to break the rules, are greedy, and are motivated solely by material gain have less achievement in college. Furthermore, the traits of extraversion, emotionality, agreeableness, and openness to new experiences are not related to indicators of academic success.

There is a statistically significant positive correlation of self-efficacy and indicators of academic success. Students with higher self-efficacy are more persistent in learning and achieving goals, invest more effort and work in fulfilling their obligations, and also have less violent emotional reactions when faced with difficulties. On the other hand, students who do not believe in their competence and efficiency may avoid putting in effort or experiencing discomfort in case of failure. Therefore, students with lower self-efficacy, in situations where they face difficulties, reduce their efforts and give up quickly, which reflects on their success. These results are consistent with previous research (Honicke, Broadbent, Fuller-Tyszkiewicz, 2023; Hayat, Shateri, Amini, Shokrpour, 2020).

Statistically significant positive correlations of all dimensions as well as the overall achievement motive on the one hand and academic success indicators on the other were established. Students who are persistent in achieving their goals and want to stand out in front of others have higher academic success. Also, students who plan their activities to achieve goals and feel satisfaction when they achieve them have higher academic achievement. On the other hand, students with a low achievement motive, are not persistent in achieving their goals, do not find satisfaction in their fulfillment, and have little academic achievement. It is the same with students who do not plan to fulfill their obligations at the university and do not try to stand out in front of others; they have lower academic performance.

This research also determined the correlations of basic variables and satisfaction with academic achievement. The results showed statistically significant positive correlations of the traits of honesty, extraversion and conscientiousness on the one hand and satisfaction with academic achievement on the other. Research (Lievens, Ones, Dilchert, 2009) established the connection between extraversion and conscientiousness on the one hand and academic achievement on the other. Students who are more social, optimistic and have higher self-esteem achieve higher academic success. Conversely, students who are more pessimistic, shy and passive in their relationships with others have lower academic achievement. Furthermore, the traits of emotionality, agreeableness, and openness to new experiences were not related to satisfaction with academic achievement. Also, there is a statistically significant positive correlation of self-efficacy and satisfaction with academic achievement. Statistically significant positive

correlations of all dimensions as well as the overall motive of achievement on the one hand and satisfaction with academic achievement on the other hand were established.

Three regression analyzes were conducted with the aim of predicting academic success based on HEXACO personality traits, self-efficacy and achievement motive dimensions. In the first, the results showed that 19% of the variability of the average in the last year of studies can be explained on the basis of a set of predictors of personality traits, self-efficacy and achievement motive dimensions. Conscientiousness is the only statistically significant predictor of average in the last year of study. Other predictors are not statistically significant. In the second, an insight into the partial standardized regression coefficients concludes that extraversion, agreeableness, conscientiousness, self-efficacy and competition with others have a statistically significant partial contribution to the explanation of individual differences in the overall average of the studies. Other predictors are not statistically significant. And finally, the third linear regression analysis showed that 26% of the variability of satisfaction with academic success can be explained based on a set of predictors of personality traits, self-efficacy and achievement motive dimensions. Honesty and self-efficacy were found to be statistically significant predictors of satisfaction with academic success.

Recommendations and limitations of this study

One of the shortcomings in the interpretation of research results is the number of respondents. Next, the study sample was convenient because it consisted of students who attend lectures consistently, who are assumed to have more significant academic achievement than those who do not attend classes regularly. Further limitations arise from the sole reliance on self-report. More reliable data on academic performance would be obtained from student services. Analysis of the results of this study allows suggesting future directions of similar research. For example, future research should include a larger number of students from multiple faculties. In the context of predicting academic success, it would be more adequate to use the academic self-efficacy questionnaire, which is intended exclusively for students. Further research in this area could include variables such as intelligence, self-confidence, resilience, academic motivation, anxiety, stress coping strategies, etc. as predictors

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PREDIKCIJA AKADEMSKE USPEŠNOSTI NA OSNOVU OSOBINA LIČNOSTI, SAMOEFIKASNOSTI I MOTIVA POSTIGNUĆA KOD STUDENATA U SRBIJI

Rezime

Predmet istraživanja ovog rada je povezanost osobina ličnosti po HEXACO modelu, samoefikasnosti i dimenzija motiva postignuća sa jedne i akademske uspešnosti sa druge strane kod studenata u Srbiji. Cilj je utvrditi u kojoj meri osobine ličnosti, motiv postignuća i samoefikasnost utiču na akademske uspehe. Kao indikatori akademske uspešnosti studenta određeni su prosek na poslednjoj godini studija, ukupni prosek na fakultetu i zadovoljstvo akademskim postignućem. Uzorak istraživanja je činilo 269 ispitanika, statistička obrada podataka je sprovedena pomoću programa IBM SPSS Statistics 21. U obradi podataka korišćena je deskriptivna statistika (AS, SD), Pirsonov koeficijent korelacije i multipla linearna regresiona analiza. Rezultati su pokazali statistički

značajne korelacije poštenja, savesnosti, samoefikasnosti, svih dimenzija kao i ukupnog motiva postignuća sa jedne i indikatora akademskog postignuća sa druge strane. Ova studija pruža bolje razumevanje osobina ličnosti, verovanja i motiva studenata koje doprinose akademskom postignuću.

Ključne reči: HEXACO model, akademska uspešnost, motiv postignuća, samoefikasnost, Srbija.

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Datum prihvatanja (Date accepted): 08.09.2024.

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ŠABLON: NASLOV RADA (CENTRIRAN, TNR SIZE 12, BOLD, SVA SLOVA VELIKA, MAKSIMALNO DVA REDA)

Nikola Nikolić⁴⁹, Petar Petrović⁵⁰, Marko Marković⁵¹

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Ključne reči: *navesti, maksimalno, pet, ključnih, reči.*

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Tabela 5. Troškovi distribucije dobara iz Subotice u maloprodajne objekte

Indikatori	Period			Ukupno
	Mesec 1	Mesec 2	Mesec 3	
Pređena razdaljina (km)	12.926	11.295	13.208	37.429
Korišćeno gorivo (litar)	3.231	2.823	3.302	9.356
Vrednost korišćenog goriva (RSD)	242.378	211.790	247.653	701.821
Ukupno provedeno vreme u vožnji (sati)	314	266	417	997
Vrednost ukupno provedenog vremena u vožnji (RSD)	47.048	39.890	62.570	149.508
Broj vožnji	98	77	102	277
Ukupna vrednost (RSD)	0	0	0	0
Broj preveženih paleti (komad)	1.179	976	1358	3.513
Ukupna prevežena količina (kg)	602.600	429.225	711.116	1.742.941
Suma (RSD)	974.222	870.864	1.100.813	2.945.899

Izvor: Nikolić, 2010;

Napomena: Vrednosti u tabeli ne sadrže porez na dodatu vrednost (PDV)

Grafike, dendrograme, dijagrame, šeme i slike treba unositi u sam tekst rada (ne koristiti opciju Float over text) i numerisati ih prema redosledu njihovog pojavljivanja. Njihovi nazivi se moraju pozicionirati neposredno iznad grafika, dendrograma, dijagrama, šeme ili slike na koju se odnose. Kod navođenja naslova, izvora i napomena koristiti isti stil koji je predhodno prikazan za formiranje tabela. Tokom pisanja rada u originalnom tekstu treba markirati pozive na određeni grafik, dendrogram, dijagram, šemu ili sliku (Graph 2.). Svi grafici, dendrogrami, dijagrami, šeme i slike u radu se svojom veličinom moraju uklapati u zadati format strane, te moraju biti centralno postavljeni. Fotografije nisu poželjne u predmetnom radu, a ukoliko se one ne mogu izbeći molimo Vas da koristite optimalnu rezoluciju (preniska rezolucija dovodi do pikselacije i krzavih ivica, dok previsoka samo povećava veličinu fajla bez doprinosa čitljivosti rada).

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1. Nikolić N., M. Marković, i P. Petrović. 2016. Poreski bilans. *Oditor* 2, (1): 13-17.

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Nik Holmes⁵², John Peters⁵³

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Table 5. The distribution cost

Indicators	Period			Total
	2013	2014	2015	
Fixed costs	12.926	11.295	13.208	37.429
Variable costs	3.231	2.823	3.302	9.356

Source: Nikolic, 2016;

Graphs, diagrams, schemes and pictures should be entered within the text of article (do not use option Float over text) and numerated according to order of their appearance. Their titles have to be positioned immediately above the graph, diagram, scheme or picture to which they relate. Please, have in mind that all titles, sources and notes have to be written by identical style which was used for tables formatting. During the article writing please mark in the main text all calls to a certain graph, diagram, scheme or picture (*Graph 2.*). All graphs, diagrams, schemes and pictures within the paper have to fit the specified format of the page, as well as they have been centrally positioned.

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1. Vall J. 2014. Accounting theory. Valid, New York.
2. Parks D., W. Robberts. 2016. Macroeconomic indicators. Finance 23, (4): 462-476.

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