

**CENTAR ZA EKONOMSKA FINANSIJSKA ISTRAŽIVANJA
BEOGRAD**



ODITOR

Časopis za menadžment, finansije pravo

14.

Časopis je kategorizovan za 2023. godinu kao M24 od strane Ministarstva nauke, tehnološkog razvoja i inovacija Republike Srbije, indeksiran na ERIH PLUS HEINONLINE listi časopisa

Časopis ODITOR
(M24, ERIH C – nacionalni časopis međunarodnog značaja)

Beograd, Vol. X, Br. 01/2024.

Izdavač – Publisher
CENTAR ZA EKONOMSKA FINANSIJSKA ISTRAŽIVANJA
Lomina br. 2, 11000 Beograd
Tel. +381694979205
<https://oditor.rs/>
<http://vsem.edu.rs/oditor/>

Suizdavači:

Univerzitet za poslovne studije, Banja Luka, Republika Srpska, Bosna
Hercegovina
Institut primenjenih nauka Beograd, Republika Srbija
Visoka škola za menadžment ekonomiju Kragujevac, Republika Srbija
Visoka škola modernog biznisa, Beograd, Republika Srbija
Univerzitet MB, Poslovni pravni fakultet, Beograd, Republika Srbija

ISSN 2217- 401X
ISSN 2683-3476 (Online)

PRESEDNIK SAVETA – PUBLISHING COUNCIL PRESIDENT

Prof. dr Dragomir Đorđević

GLAVNI ODGOVORNI UREDNIK – EDITOR IN CHIEF

Prof. dr Slavko Vukša

Izdavački savet – Publishing Council

*prof. dr Dragomir Đorđević, Fakultet za ekonomiju inženjerski menadžment, Novi
Sad, R. Srbija*

prof. dr Čedomir Ljubojević, Visoka škola modernog biznisa, Beograd, R. Srbija

*prof. dr Duško Jovanović, Visoka škola za menadžment ekonomiju, Kragujevac,
R. Srbija*

*prof. dr Radovan Klincov, Univerzitet za poslovne studije, Banja Luka, R. Srpska,
BiH*

prof. dr Aleksandar Prnjat, Univerzitet Alfa BK, Beograd, R. Srbija

prof. dr Milija Bogavac, Poslovni pravni fakultet, Mladenovac, R. Srbija

*prof. dr Branislav Jakić, Fakultet za primenjeni menadžment ekonomiju finansije,
Beograd, R. Srbija*

Međunarodni recenzentski redakcijski odbor – International Review Editorial Board

prof. dr Slavko Vukša, Visoka škola za menadžment ekonomiju, Kragujevac, R. Srbija

Prof. dr Bogdan Ilić, Ekonomski fakultet, Univerzitet Beogradu, R. Srbija

Prof. dr Rosa Andžić, Institut primenjenih nauka, Beograd, R. Srbija

prof. dr Dragomir Đorđević, Pravni fakultet za privredu pravosuđe, Novi Sad, R. Srbija

prof. dr Branislav Jakić, Fakultet za primenjeni menadžment, ekonomiju finansije, Beograd, R. Srbija

prof. dr Svetlana Ignjatijević, Fakultet za ekonomiju inženjerski menadžment, Novi Sad, R. Srbija

Ph.D Nikola Gradojevic, associate professor Department of Economics and Finance, University of Guelph, Canada

Prof. dr Bojan Savić, Poljoprivredni fakultet, Univerziteta Beogradu, R. Srbija

prof. dr Drago Cvijanović, Fakultet za hotelijerstvo turizam, Vrnjačka Banja, R. Srbija

prof. dr Ljubiša Dabić, Visoka škola za menadžment ekonomiju, Kragujevac, R. Srbija

prof. dr Snežana Krstić, Vojna akademija, Beograd, R. Srbija

prof. dr Predrag Jovićević, Fakultet za primenjeni menadžment ekonomiju finansije, Beograd, R. Srbija

Ph. D., Goran Buturac, Full professor and Scientific Adviser, Zagreb, School of Economics and Management, Croatia, Institute of Economics, Zagreb, Croatia

Ph. D., Cristina Pocol, Associate Professor, University of Agricultural Sciences and Veterinary Medicine of Cluj Napoca, Romania

doc. dr Nemanja Pantić, Fakultet za hotelijerstvo turizam, Vrnjačka Banja, R. Srbija

Ph. D., Daniele Cavicchioli, Assistant Professor, Università degli Studi di Milano, Department of Economics, Milano, Italy

prof. dr Vidoje Moračanin, Poslovni pravni fakultet, Beograd, R. Srbija

doc. dr Milan Mihajlović, Vojna akademija, Beograd, R. Srbija

prof. dr Gordana Ljubojević, Visoka škola modernog biznisa, Beograd, R. Srbija

doc. dr Miljan Leković, Fakultet za hotelijerstvo turizam, Vrnjačka Banja, R. Srbija

prof. dr Jozefina Beke Trivunac, Univerzitet Alfa BK, Beograd, R. Srbija

doc. dr Marjan Mirčevski, Vojnomedicinska akademija, Beograd, R. Srbija

prof. dr Anđelka Aničić, Visoka poslovna škola „Čačak“, Beograd, R. Srbija

prof. dr Ilija Šušić, Univerzitet za poslovne studije, Banja Luka, R. Srpska, Bosna Hercegovina

doc. dr Andrej Mićović, Fakultet za hotelijerstvo turizam, Vrnjačka Banja, R. Srbija

doc. dr Nikola Milenković, Visoka škola za menadžment ekonomiju, Kragujevac, R. Srbija

doc. dr Marija Knežević, Visoka škola EPOHA, Beograd, R. Srbija

Lektor – Proofreader

Slobodan Vukoje, Beograd, R. Srbija

Tehnički urednik - Technical editor

Branislav Jovanović, Kragujevac, R. Srbija

SADRŽAJ ČASOPISA BROJ 01/2024

FORMA HARTIJA OD VREDNOSTI PRAVNO-EKONOMSKA ANALIZA Gordana Mrdak, Milija Bogavac, Mile Rajković, Miljan Žižić	1
FORM OF SECURITIES LEGAL AND ECONOMIC ANALYSIS Gordana Mrdak, Milija Bogavac, Mile Rajković, Miljan Žižić.....	10
MEĐUZAVISNOST VOLATILNOSTI CENE NAFTE I DEVIZNOG KURSA RUBLJE TOKOM KRIZE U UKRAJINI Suzana Balaban Vladimir Pavićević Milica Simić	19
INTERDEPENDENCE OF OIL PRICE VOLATILITY AND RUBLE EXCHANGE RATE DURING THE CRISIS IN UKRAINE Suzana Balaban Vladimir Pavićević Milica Simić.....	38
INOVACIONI MAKROMENADŽMENT U EKONOMIJI ZNANJA Srđan Milićević, Vladimir Kostić Maja Stošković	57
INNOVATIVE MACROMANAGEMENT IN THE KNOWLEDGE ECONOMY Srdjan Milićević , Vladimir Kostić, Maja Stošković.....	71
DETERMINANTE RAZVOJA KARIJERE OFICIRA VOJSKE SRBIJE Vladimir Ristić, Anita Pešić, Dragan Bojanić.....	85
DETERMINANTS OF THE CAREER DEVELOPMENT OF SERBIAN ARMY OFFICERS Vladimir Ristić , Anita Pešić , Dragan Bojanić.....	102
THE CAPABILITY OF THE PUBLIC INTERNAL AUDIT FUNCTION IN SERBIA TO EFFECTIVELY CARRY OUT ITS ROLE Jozefina Beke Trivunac, Gordana Vukelić, Stefan Milojević	119
RAZVOJ MODERNIH DEMOKRATSKIH DRŽAVA I NJIHOVIH POLITIČKIH SISTEMA SA OSVRTOM NA POLITIČKI SISTEM REPUBLIKE SRBIJE Slobodan Petrović, Ratko Ljubojević, Andrija Blanuša.....	133
DEVELOPMENT OF MODERN DEMOCRATIC STATES AND THEIR POLITICAL SYSTEMS WITH REFERENCE TO THE POLITICAL SYSTEM OF	

THE REPUBLIC OF SERBIA Slobodan Petrović , Ratko Ljubojević , Andrija
Blanuša145

ZAŠTITA TV FORMATA PUTEM AUTORSKOG PRAVA – MOGUĆNOSTI I
DILEME Milica Njegovan, Iva Šiđanin157

TV FORMAT PROTECTION THROUGH COPYRIGHT - OPPORTUNITIES AND
DILEMMA Milica Njegovan , Iva Šidjanin174

ANALIZA ODNOSA INDEKSA DIGITALNIH VEŠTINA I RAZVOJA
EKONOMIJE Dragana Stefanović, Ignjatijević Svetlana, Ivan Božović191

ANALYSIS OF THE RELATIONSHIP INDEX OF DIGITAL SKILLS AND
ECONOMIC DEVELOPMENT Dragana Stefanović, Ignjatijević Svetlana, Ivan
Božović.....218

PRAVILA TEHNIČKE PRIPREME RADOVA247

RULES FOR TECHNICAL PREPARATION OF ARTICLES252

FORMA HARTIJA OD VREDNOSTI PRAVNO-EKONOMSKA ANALIZA

Gordana Mrdak¹, Milija Bogavac², Mile Rajković³, Miljan Žižić⁴

doi: 10.59864/Oditor12401M

Originalni naučni rad

UDK: 336.763:34

Apstrakt

Nezaobilazno je pitanje da utvrdimo da li postoje i kakvog je značaja za ocenu pravne prirode hartija od vrednosti promena bitne forme, i tačnije, napuštanje hartije od vrednosti kao pismene isprave u formu bestelesne skripturalne evidencije, bez obzira da li se ovo načelo (nazovimo ga načelom upisa), realizovalo u registru računovodstvene ili računarske tehnike.

Ovde se susrećemo sa nepreciznošću do sada usvojene formulacije koja nije dolazila do izražaja u uslovima nepostojanja konkurencije formi kod hartija od vrednosti. Naime, mi smo pravni odnos iz hartije od vrednosti poistovetili sa njegovim pojavnim oblikom kao bitne forme. U nameri da ispitujemo pravnu prirodu, ne hartija od vrednosti kao forme (koja ne može imati pravnu prirodu u navedenom smislu), već prava oličenog u takvoj formi, jasno je da govorimo i utvrđujemo postojanje eventualnih uticaja promena forme u kojoj je inkorporisano, odnosno predstavljeno (na dematerijalizovan način) isto pravo.

Ključne reči: forma, hartije od vrednosti, pravni režim.

JEL: K22, K29

Uvod

Pravni režim hartija od vrednosti, upravo zbog njihove proliferacije, kako po vrstama tako i po prometu, bez obzira da li se radi o kratkoročnim ili dugoročnim hartijama, pa i zbog problematike koja se nameće obaveznom formom i neminovnom promenom izazvanom dematerijalizacijom takvih hartija, ponovno aktuelizira razmišljanje o njihovoj pravnoj prirodi. Mišljenja smo naime, da se u procesu rasprave o formi, teško može ignorisati onaj deo celine koji se odnosi na sadržinu pravnog odnosa, jer od toga zavisi i zaključak o pravnoj prirodi hartija od

¹ Docent, dr Gordana Mrdak, Univerzitet Alfa BK, Beograd, Srbija, E-mail: gordana.mrdak@alfa.edu.rs

² Redovni profesor, dr Milija Bogavac, Univerzitet MB, Beograd, Srbija, E-mail: info@mbuniverzitet.edu.rs

³ Docent dr Mile Rajković, Visoka škola akademskih studija "Dositej", Beograd, Srbija, E-mail: mile.rajkovic@vsdositej.edu.rs

⁴ Miljan Žižić, doktorant, Poslovni i pravni fakultet, Univerzitet MB, Beograd, Srbija, E-mail: zizicmiljan90@gmail.com

vrednosti(Galjak, 2022). Teško je u domenu rasprave o pravnoj problematici dematerijalizacije, izbeći sve relevantne elemente hartija od vrednosti, budući da se posledični lanac uticaja dematerijalizacije proteže, i to suštinski, na svaki bitan element postojećeg sistema hartija od vrednosti(Ilić Popov & Popović, 2023). Druga je stvar, ali ipak povezana sa iznetim problemom, kako se naš zakonodavac po ovim pitanjima odnosi i opredeljuje u svojim sadašnjim ili budućim praktičnim rešenjima.

U našem obligacionom pravu, odsek koji se odnosi na regulativu hartija od vrednosti, nalazi se u odeljku koji reguliše jednostranu izjavu volje kao posebnom izvoru obligacija, različitu dakle od ugovora, kao jednog od klasičnih izvora ovog dela građanskog prava, uz druge izvore, kao što su na primer: naknada štete, posloводство bez naloga i dr(Dimitrijević, 2023). Ovakva sistematizacija hartija od vrednosti u našem zakonodavstvu je bez sumnje posledica opredeljenja po kojem je jednostrana izjava volje posebni izvor obligacija u odnosu na ugovor i ostale izvore, čime su hartije od vrednosti zauzele svoje posebno mesto, kako u odnosu na ugovor, tako naravno, i u odnosu na druge izvore obligacija.

Bez obzira na iznetu činjenicu o tome kako se naš zakonodavac opredelio na ovaj način po pitanju pravne prirode hartija od vrednosti, razumljivo je da, kako u teoriji, tako i u praksi, o pravnoj prirodi hartija od vrednosti ima različitih pristupa i shvatanja. Očigledno je da njihovo polazište i osnova za shvatanja, svoj koren imaju u tome da li prihvataju ili ne prihvataju, pored ugovora i jednostranu izjavu volje kao jedan od izvora obligacija. Ako se negira jednostrana izjava volje kao izvor obligacija, tada neminovno ne može biti druge polazne osnove za opredeljenje o pravnoj prirodi hartija od vrednosti od one ugovorne(Majstorović, 2021; Savić, 2022). Odatle i polazište ugovorne teorije o pravnoj prirodi ovih hartija po kojoj obaveza iz hartija od vrednosti ne može nastati pre ispunjenja onih uslova koji su relevantni za postojanje ugovora - a to su, u prvom redu, saglasnost dužnika i poverioca o bitnim elementima takvog ugovornog odnosa (Rstić, 2022). Prema tome, ugovorna teorija, negirajući da hartije od vrednosti predstavljaju poseban izvor obligacija, jer obaveza iz takvih hartija može da nastane samo zaključenjem ugovora između izdavaoca i primaoca (kupca), u stvari samu sebe ograničava shvatanjem, da izvora, kada se radi o hartijama od vrednosti, u jednostranoj izjavi volje nema, odnosno ne može biti (Schär, 2021). Drugim rečima, prema ovakvoj teoriji, hartija od vrednosti bi predstavljala ispravu koja je u suštini ugovor između dužnika - izdavača takve hartije, i poverioca - savesnog imaoca hartije, stečene dakle na zakoniti način. (Dašić et al., 2023, Dašić, 2023).

Ovakvo shvatanje nesumnjivo svoju slabu stranu ima u realnosti i činjenici da, kod kreiranja hartija od vrednosti, bez obzira na zaista potrebno prisustvo volje njenog izdavaoca za formiranjem pravne veze na osnovu režima takvih hartija, prema uslovima iz hartija, ove uslove nije ugovarao sa bilo kime, a najmanje sa

poznatim kupcem, u budućim obligacionim odnosima koje bi se, takvim sporazumom stvorili na način na koji ugovorno pravo predviđa. Ne bi se naime, ovakvom teorijom moglo objasniti kako to, da bez ugovora, izdavalac hartije na donosioca, mora da ispuni obavezu iz hartije savesnom imaocu sa kojim nikada nije sklopljen ugovor određene sadržine.

Pravna priroda hartija od vrednosti

Mišljenja smo da je bilo sasvim razumno napustiti shvatanje koje zastupa ugovorna teorija i pravnu prirodu hartija od vrednosti objasniti posebnim izvorom obligacija koje predstavlja jednostrana izjava volje, kako to čini posredno i naš zakonodavac. Međutim, ni time nije sve rešeno jer, uprkos takvom opredeljenju, ostaje dilema o tome, kada nastaje obaveza iz hartije od vrednosti - njenim nastajanjem u odgovarajućoj formi, ili tek njenim puštanjem u promet kao dodatnim uslovom?

Odatle i dva shvatanja koja se pojavljuju, ne samo kao teorijska već i kao praktično opredeljenje u zakonskoj praksi.

Naime, bez sumnje je jednostranoj izjavi volje, kao posebnog izvora obligacija, najbliži institut ponude za zaključenje ugovora, ali ova sličnost nosi u sebi privid koji je bitan. Ponuda za zaključenje ugovora je uvek upućena poznatom ili prepoznatljivom licu (Sobiech et al., 2021). Izvesno je da hartije od vrednosti mogu da glase na ime, ali to ime je redovno upisano nakon što imenovani pristane da stupi u odnos čija je sadržina naznačena u hartiji. Pitanje je ipak, da li obaveza iz hartije nastaje i pre nego što je hartija od vrednosti dospela u ruke imenovanog vlasnika ili savesnog imaoca, bez obzira da li je u pitanju hartija na ime ili na donosioca. Može se sigurno desiti da izdavalac hartije ovu izgubi, bude mu ukradena a da dođe u ruke savesnog imaoca ili imenovanog vlasnika iz hartije. U tom slučaju izdavalac ne bi mogao uspešno isticati prigovor koji je moguć prema prvom sticaocu ili nesavesnom sticaocu, već mora ispuniti obavezu iz hartije. Očigledno je da nikakav ugovor nije osnov ovako nastalog pravnog odnosa između izdavaoca i savesnog imaoca, pa stoga ne bi trebalo niti bi bilo moguće na ovakvom običnom primeru, braniti ne samo ugovornu teoriju kao ispravnu, već ni teoriju po kojoj obaveza za izdavaoca nastaje samim stvaranjem hartije od vrednosti (Vuković, et al., 2023). Ako ona ne bude stavljena u promet, nesumnjivo je da nema još nikoga ko bi stekao pravo na ispunjenje obaveze iz takve hartije, odnosno to pravo ostvariti, pre svega zato što hartiju ne može prezentirati dužniku. Takva teorija o, uslovno rečeno, potencijalnoj obavezi, pod nazivom kreacione teorije, prisutna je i u praksi, ali se njome teško može objasniti postojanje dužnika bez poverioca, pa time ni opravdano prihvatiti postojanje pravnog odnosa pre nego što hartija od vrednosti dospe u ruke savesnog imaoca, kao poverioca.

Izjava volje od strane jednog lica u svrhu stvaranja jednostrane obaveze određene sadržine, u našem pravu je relevantna, bez obzira da li se u trenutku izjave zna ili se ne zna određeno (ukoliko nije imenovan) ko je titular prava na ispunjenje jednostrane obaveze. On će se, za razliku od ugovora kao izvora obligacija, tek kasnije legitimisati u svojstvu poverioca. Treba ipak imati u vidu da kod ugovora pravni odnos po ovom osnovu nastaje istovremeno usaglašavanjem izjavama, dok kod jednostrano izjavljene volje, pravo se "rađa" kasnije sa pojavom lica, koje ispunjava uslove iz takve jednostrano izjavljene volje, tj. tada prihvata uslove po kojima postaje poverilac odnosno, kod hartija od vrednosti, te uslove prihvata, kada postane savesni sticalac hartije.

Naš zakonodavac očigledno nije bio opterećen protivrečnostima koje u pogledu pravne prirode hartija od vrednosti imaju u sebi ugovorna i kreaciona teorija. On se opredelio za onu koja logički najbolje odgovara našim sledstvenim rešenjima koja se tiču prometa tih hartija, a to je trenutak kada hartiju od vrednosti njen izdavalac preda njenom korisniku (Nikolić, 2023).

Prihvatanjem ovakvog rešenja, otpadaju potencijalne mogućnosti da obaveze iz takve hartije nastanu pre njenog stavljanja u promet od strane njenog izdavaoca, Time, za naše pravno područje, ova teorija, koju nazivamo emisionom, rešava mnoga praktična pitanja, između kojih je za nas značajno i pitanje forme kao bitnog sastojka hartija od vrednosti.

Naime, kada je reč o formi, za ugovornu teoriju, morali bi da važe oni propisi koji se odnose na valjanost ugovora sa stanovišta takvog teorijskog i praktičnog pristupa, dok sa stanovišta onih koji za pravnu prirodu hartija od vrednosti prihvataju jednostranu izjavu volje kao izvor obligacionog odnosa, ostaje da razmotrimo u kojem pojavnom obliku (formi) takva izjava mora da bude izražena da bi bila relevantna za ocenu valjanosti takve hartije (Bremus et al., 2020). Ovo bez obzira da li se radi o teoriji kreacije ili emisije, mada je za nas ova poslednja interesantnija upravo zbog njenog prihvatanja u našoj zakonodavnoj praksi.

Pravni režim forme hartija od vrednosti

Izuzimajući Zakone o menici i čeku, koji su materiju ovih posebnih hartija od vrednosti regulisali prema međunarodnim merilima od samog početka sredinom 20. veka na jedinstven način, ideološki pogledi, Ustavni akt i sledstveni pravni propisi naše zemlje, koji su se odnosili na koncept svojine, a u vezi sa time kako sadržana tako i forme hartija od vrednosti, su u načelu bili zapostavljeni sve do kodifikacije obligacionog prava. Zakon o obligacionim odnosima je u opštim odredbama usvojio klasičnu koncepciju forme i bitnih sastojaka hartije od vrednosti kao pismene isprave (Bučalina & Pejović, 2022). Definisanje hartije od vrednosti kao pismene isprave, jasno ukazuje na materijalizovanu ispravu u pismenoj formi u kojoj je inkorporisano ono pravo koje poverilac (zakoniti imalac), može ostvariti samo uz prezentiranje same hartije.

Tako je ostalo sve do skora uprkos odredbi samog zakona, po kojoj je moguće na obligacione odnose koji se određuju drugim zakonom, primeniti drugačije rešenje (Bevanda et al., 2021), i uprkos činjenici da je zakonodavac, koristeći ovo pravo, donosio poseban zakon o hartijama od vrednosti, koji se odnosi na uslove, način izdavanja i prenos deonice, obveznica, blagajničkih zapisa, sertifikata i komercijalnih zapisa (Juelsrud & Wold, 2020). Naime i u smislu zakona, pod hartijom od vrednosti se podrazumeva pismena isprava koja glasi na ime ili donosioca, ali i njihove dematerijalizacije u trgovini bezgotovinskim načinom zaduživanjem ili odobravanjem računa. Naše pravo, drugim rečima, kada su u pitanju hartije od vrednosti, teško odstupa od njihove materijalne osobine. Drugo je pitanje, što bi u današnjim uslovima sve moglo da se podrazumeva pod navedenim pojmom, tj. da li je materijalizovani oblik hartija u vidu isprava, uvek identičan sa njenim pojavnim oblikom ili ne.

Uticao opšteg tehnološkog napretka, sredstava i njihovih mogućnosti na pravo je nesumnjivo i istorijski potvrđeno upravo kroz formu pravnih akata. Ovo naročito na one akte koje se u današnjem smislu reči smatraju masovnim, kakav je upravo slučaj sa hartijama od vrednosti i njihovim prometom u uslovima postojanja organizovanih i specijalizovanih tržišta, kakva je upravo berza. Ova masovnost ima još jedan odraz na obligaciono pravo (Fraisie et al., 2020). Bez obzira na kod nas usvojeno načelo jedinstvenog regulisanja pravnih odnosa iz ove oblasti, izuzimajući naravno izuzetke, činjenica je da se upravo tehnika meša u specifičnosti i potrebe za posebnošću regulative tipične za privredno pravo (De Jonghe et al., 2020). Pravni instituti rezervisani za ostale učesnike u obligacionim odnosima koji nemaju osobine subjekta koji obavljaju privrednu delatnost, imaju karakteristične individualnosti koje u klasičnom obliku čini vidljivom sve faze i forme procesa pregovaranja, zaključenja i ispunjenja ugovora. Hteli mi to ili ne, ova različitost, ne samo subjekata već i metoda pri zaključenju pravnih poslova, sama po sebi nameće specifičnosti koje se u oblasti privrednih odnosa odražavaju na potrebu posebnog regulisanja (Klincov et al., 2022). Nekadašnja, skoro bez izuzetka prisutnost ugovorenih strana, danas je, barem u privrednom pravu, po pravilu izuzetak, jer se obavlja između odsutnih ugovarača, koji se, u procesu zaključenja posla neretko nalaze veoma udaljeni u vlastitoj, ali i u drugoj zemlji, što izaziva i međunarodne implikacije. Odatle i shvatanje da je skripturalna forma u ovakvoj situaciji neophodna, ali je, sve više, zamenjuje elektronika svojim znacima (Milenković et al., 2023). Složenost i nepoznavanje na profesionalnom nivou specifičnosti uslova i postupaka trgovine u pojedinim slučajevima, uvodi u međuprostor posrednike-specijaliste koji sada međusobno, umesto onih za čiji račun se pojavljuju na tržištu, sklapaju poslovne aranžmane. Ova pojava je upravo karakteristična za poslovanje hartijama od vrednosti na berzama.

Evolucija pojava oblika novca, banaka i drugih finansijskih institucija, omogućava stvaranje žiralnog novca, pa u poslednje vreme i skripturalnog

pojavnog oblika, evidencije i dugovno-potražnih salda iz osnova prometa i izdavanja hartija od vrednosti(Biswas et al., 2022).

Ovaj oblik skripturalnog uspostavljanja režima hartija od vrednosti zastupljen je i u našem pravu. To samo po sebi potvrđuje da se pravni instituti javljaju u skladu za potrebama njihovog korišćenja. Uz pravilo da je potreba pravi podsticaj inovaciji, treba dodati i da to važi za njenu primenu(Cvetković, 2023). U našem pravu, međutim, nema potrebe za apsolutno novim, već u prilagođavanju onog što u svetu već postoji i funkcioniše, istina u uslovima koji se u mnogome razlikuju od naših, ali ipak ne takvim da način dematerijalizovanih hartija koji se kod nas koristi ne bi bio kompatibilan. Pitanje se ipak može postaviti u nešto izmenjenom obliku, tj., da li kada i kako, u našim uslovima primeniti, nazovimo ga uslovno, novi dematerijalizovani pojavni oblik za sve ili samo za posebne vrste hartija od vrednosti i u vezi sa time, kako promeniti kod nas vladajuću doktrinu o inkorporisanosti prava u hartijama od vrednosti kada tih hartija u fizičkom smislu nema(Ilić et al., 2022; Milanović, 2023). Drugim rečima, treba rešavati problem uspostavljanja pravnog režima hartija od vrednosti bez hartija i sledstveno tome, takvog prometa koji će u procesnom smislu biti automatizovan u takvoj meri, da izražavanje volje prodavca-vlasnika hartije, umesto u klasičnom smislu, bude modifikovano tako, da samo početak, u vidu naloga, pruži sve potrebne elemente za odvijanje procesa po unapred predviđenim pravilima i postupcima koji u krajnjoj konsekvenci dovode do promene vlasništva na „hartijama“ i sledstvenog plaćanja, što uspostavlja imovinsku ravnotežu učesnika u tom postupku, obuhvatajući, pri tome, ne samo prodavca i kupca, već i posrednike.

Da bi mogli ovom zadatku udovoljiti, neophodno je prići suštini problema koji se prvenstveno sastoji u tome da sagledamo bitne materijalne i procesne elemente stvaranja (emisije), prometa i realizacije prava iz hartija od vrednosti, a zatim utvrditi promene koje su nužne u pretpostavljenim novim uslovima, kako bi se mogao provesti odnosno uspostaviti novi pravni režim, koji se nadograđuje na stari kao njegov nastavak, bez prekida nužnog kontinuiteta(Vladislavljević et al., 2023).

Jedna od bitnih osobina hartija od vrednosti (isprava, imovinsko pravo i inkorporacija) upravo obavezna forma temelj je za ostale, jer su njome omogućene, nesumnjivo je da bi izlaganje o mogućnosti i potrebi njene zamene bio nemoguće, ako se o pitanju sadašnje forme ne priđe sa svih razloga koji se u pravnom prometu pojavljuju, ne samo u građanskoj već i upravnoj grani prava(Meier et al., 2021).

Zaključak

Prema izloženom, dakle, ostaje nam da razmotrimo svrhu i vrste forme, kao bitnog faktora u oceni potrebe njenog prilagođavanja tehničkim mogućnostima i potrebama prometa. U tu svrhu neophodno je, po našem mišljenju, razmotriti one

pojavnne oblike forme u ugovornom pravu za izjave volje i shodno ih primeniti na situacije u kojoj se taj oblik treba pojavljivati za slučajeve jednostrane izjave volje i, u vezi sa time, o relevantnoj formi hartija od vrednosti i potrebi, da baš takva forma kod ovakvog jednostranog akta volje, bude zastupljena. Pri tome, naravno, ovakav metod nikako ne znači da prihvatamo ugovornu teoriju kod objašnjenja pravne prirode hartija od vrednosti, već koristimo samo shodnu primenu onih objašnjenja koja se odnose na formu izjave volje, a koja bi, po našem mišljenju, odgovarala svrsi.

Rasprava o formi kod hartija od vrednosti je značajna ako hoćemo da sadašnji vid te forme podvrgnemo reviziji, naročito iz razloga što je ta forma kod ovakvih akata bitna za njihovu valjanost, a služi i sprovođenju načela inkorporacije i prezentacije, te poboljšava negocijabilnost. Bilo koja promena u regulativi koja se odnosi na obaveznost forme, trebala bi biti u funkciji privredne i prometne svrsishodnosti hartija od vrednosti i pravnih odnosa koji će ovu svrsishodnost podržavati.

Interesantno je da naša nauka, kada je u pitanju forma, svoju pažnju zadržava uglavnom na onom izvoru obligacionih odnosa koji su oduvek bili kao takvi nesporni, a proizilaze iz volje učesnika u pravnom prometu. Radi se o ugovoru, koji je kao izvor obligacionih odnosa, bio uvek u centru pažnje kada se radi i o njegovoj formi, odnosno formi izjava volje na osnovu kojih je ugovorni odnos nastao. Da li je problematika forme kod drugih izvora prava bila tako beznačajna da nije zavedela pažnje, ili je problem bio u tome koji su sve izvori obligacija priznavani, ostavljajući po strani naknadu štete kod koje se, po prirodi stvari, ovaj problem ne nameće? Nesumnjivo je stoga, da sa stanovišta obaveze forme u onim obligacionim odnosima koji nastaju izjavama (izjavom) volje, ta problematika, barem kada su u pitanju hartije od vrednosti, uvek ostaje aktuelna ili barem aktuelizirana u situaciji kada pitanje promene (ne)adekvatnog oblika forme postane dominantno. Značaj forme priznajemo u onim obligacionim odnosima koji svoj izvor imaju u ugovoru, nema nikakve smetnje, već naprotiv, postoji potreba, da se pitanju forme, kada je više subjekata u pitanju sa ciljem pravnog obavezivanja, da saznanja iz ove oblasti, shodno razmotrimo i za druge slučajeve izvora obligacija i to upravo kod jednostrane izjave volje i hartija od vrednosti kao jednog od načina stvaranja obligacionog pravnog odnosa.

Literatura

1. Bevanda, V., Macura, R., & Blanuša, A. (2021). Uloga i značaj ekonomike poslovanja u razvoju savremenih preduzeća i organizacija. *Društveni horizonti*, 1(1), 107-125. <https://doi.org/10.5937/DruHor2101107B>
2. Biswas, S., Horváth, B.L., Zhai, W., (2022). Eliminating the tax shield through allowance for corporate equity: Cross-border credit supply effects. *J. Money Credit Bank*. 54(6), 1803–1837.

3. Bremus, F., Schmidt, K., Tonzer, L. (2020). Interactions between bank levies and corporate taxes: How is bank leverage affected? *J. Bank. Financ.* 118, 105874.
4. Bučalina, M. A., & Pejović, B. (2022). Teorijska konceptuelizacija preduzetništva. *Društveni horizonti*, 2(4), 235-253. <https://doi.org/10.5937/drushor2204235B>
5. Cvetković, M. (2023). Kripto kao predmet ugovorne obligacije prema Uredbi o tržištima kripto imovine (MICA) i Zakonu o digitalnoj imovini. *Zbornik radova Pravnog fakulteta u Nišu*, 62(100), 159-187. <https://doi.org/10.5937/zrpfno-48243>
6. Dimitrijević, M. (2023). Monetarni kredibilitet kao društvena vrednost u savremenom monetarnom pravu i pravu centralnih banaka. *Zbornik radova Pravnog fakulteta u Nišu*, 62(99), 97-118. <https://doi.org/10.5937/zrpfno-45419>
7. Dašić, B. (2023) Financing sports from the budget of the republic of Serbia. *Sports, media and business*, 9(2), 183-194. <https://doi.org/10.58984/smb2302183d>
8. Dašić, B., Župljanić, M. & Pušonja, B. (2023). Uloga regulatornog okvira na prilive stranih direktnih investicija. *Akcionarstvo*, 29(1), 95-112
9. De Jonghe, O., Dewachter, H., Ongena, S. (2020). Bank capital (requirements) and credit supply: Evidence from pillar 2 decisions. *J. Corp. Finance*, 60, 101518.
10. Fraisse, H., Lé, M., Thesmar, D. (2020). The real effects of bank capital requirements. *Manage. Sci.* 66 (1), 5–23.
11. Galjak, I. (2022). Pravno uređenje investiranja u javnom sektoru. *Revija prava – javnog sektora*, 2(1), 27-44.
12. Ilić Popov, G., & Popović, D. (2023). Od činjenica do istine u poreskom postupku. *Zbornik radova Pravnog fakulteta u Nišu*, 62(98), 15-35. <https://doi.org/10.5937/zrpfni-45264>
13. Ilić, B., Milojević, I., & Miljković, M. (2022). Uloga akcionarskog društva u održivosti razvoja kapitala. *Održivi razvoj*, 4(1), 19-28. <https://doi.org/10.5937/OdrRaz2201019I>
14. Juelsrud, R.E. & Wold, E.G. (2020). Risk-weighted capital requirements and portfolio rebalancing. *J. Financial Intermediation* 41, 100806
15. Klincov, R., Marjanović, N., Trnavac, D., Novović, M. & Obućinski, D. (2022). Shvatanje ekonomskih zakona u savremenoj ekonomskoj teoriji. *Akcionarstvo*, 28(1), 99-114
16. Majstorović, A. (2021). Pravni okvir savremenog budžetskog računovodstva. *Finansijski savetnik*, 26(1), 7-24
17. Meier, S., Gonzalez, M.R., Kunze, F. (2021). The global financial crisis, the EMU sovereign debt crisis and international financial regulation: lessons from a systematic literature review. *Int. Rev. Law Econ.* 65, 105945.
18. Milanović, N. (2023). Menadžment finansijske održivosti neprofitnih

organizacija. *Održivi razvoj*, 5(1), 7-17.
<https://doi.org/10.5937/OdrRaz2301007M>

19. Milenković, N., Radosavljević, M., & Vladislavljević, V. (2023). Korišćenje aplikacija sa otvorenom licencom u razvoju programa poslovnog preduzeća. *Održivi razvoj*, 5(2), 35-49. <https://doi.org/10.5937/OdrRaz2302035M>
20. Nikolić, L. (2023). Savremene finansijske tehnologije i tradicionalno bankarstvo. *Zbornik radova Pravnog fakulteta u Nišu*, 62(100), 125-142. <https://doi.org/10.5937/zrpfno-47158>
21. Rstić, M. (2022). Menadžerski stavovi kao problemi u odlučivanju sportskih organizacija. *Menadžment u sportu*, 13(1), 25-31
22. Savić, B. (2022). Značaj integrisanog izveštavanja za funkcionisanje tržišta kapitala. *Akcionarstvo*, 28(1), 7-20
23. Schär, F. (2021) Decentralized Finance: On Blockchain-and Smart Contract-Based Financial Markets. *Federal Reserve Bank of St. Louis Review*, Vol. 103, No. 2.
24. Sobiech, A.L., Chronopoulos, D.K. & Wilson, J.O. (2021). The real effects of bank taxation: Evidence for corporate financing and investment. *J. Corp. Finance* 69, 101989
25. Vladislavljević, V., Milenković, N., Simić, M., Radosavljević, M. & Mičić, S. (2023). Elektronsko plaćanje u savremenom poslovanju sportskih kompanija. *Menadžment u sportu*, 14(1), 63-74.
26. Vuković, M., Urošević, S., Dašić, D. (2023) Threats to objectivity in the social science research. *Sports, media and business*, 9(2), 143-158. <https://doi.org/10.58984/smb2302143v>

Datum prijema (Date received): 04.02.2024.

Izvršena prva korekcija (The first correction was made): 11.03.2024.

Datum prihvatanja (Date accepted): 17.03.2024.

FORM OF SECURITIES LEGAL AND ECONOMIC ANALYSIS

Gordana Mrdak⁵, Milija Bogavac⁶, Mile Rajković⁷, Miljan Žižić⁸

Abstract

Unavoidable question to determine whether there are and what is the significance for the assessment of the legal nature of securities of changes in essential form, and more precisely, the abandonment of a security as a written document in the form of an incorporeal scriptural record, regardless of whether this principle (let's call it by the principle of registration), realized in the register of accounting or computer techniques.

This is where we encounter the inaccuracy of the formulation adopted until now, which did not come to the fore in the conditions of non-existence of competition in the form of securities. Namely, we identified the legal relationship from the security with its apparent form as an essential form. In order to examine the legal nature, not of a security as a form (which cannot have a legal nature in the aforementioned sense), but of the right embodied in such a form, it is clear that we are talking about and establishing the existence of possible effects of changes in the form in which it is incorporated, i.e. presented (in a dematerialized way) the same right.

Keywords: *form, securities, legal regime.*

JEL: *K22, K29.*

Introduction

The legal regime of securities, precisely because of their proliferation, both by types and by circulation, regardless of whether they are short-term or long-term securities, and also because of the problems imposed by the mandatory form and the inevitable change caused by the dematerialization of such securities, is being re-actualized thinking about their legal nature. Namely, we are of the opinion that in the process of discussing the form, it is difficult to ignore that part of the whole that refers to the content of the legal relationship, because the conclusion about the legal nature of securities also depends on it (Galjak, 2022). It is difficult in the domain of discussion on the legal issue of dematerialization to avoid all

⁵ Docent, dr Gordana Mrdak, Univerzitet Alfa BK, Beograd, Srbija, E-mail: gordana.mrdak@alfa.edu.rs

⁶ Redovni profesor, dr Milija Bogavac, Univerzitet MB, Beograd, Srbija, E-mail: info@mbuniverzitet.edu.rs

⁷ Docent dr Mile Rajković, Visoka škola akademskih studija "Dositej", Beograd, Srbija, E-mail: mile.rajkovic@vsdositej.edu.rs

⁸ Miljan Žižić, doktorant, Poslovni i pravni fakultet, Univerzitet MB, Beograd, Srbija, E-mail: zizicmiljan90@gmail.com

relevant elements of securities, since the resulting chain of influence of dematerialization extends, essentially, to every essential element of the existing system of securities (Ilić Popov & Popović, 2023) . It is another matter, but still related to the presented problem, how our legislator deals with these issues and decides in his current or future practical solutions.

In our law of obligations, the section related to the regulation of securities is found in the section that regulates the unilateral declaration of will as a special source of obligations, different from contracts, as one of the classical sources of this part of civil law, along with other sources, such as are, for example: compensation for damages, management without a warrant, etc. (Dimitrijević, 2023) . This systematization of securities in our legislation is without a doubt a consequence of the determination according to which a unilateral declaration of will is a special source of obligations in relation to the contract and other sources, which gave securities their special place, both in relation to the contract and, of course, in compared to other sources of bonds.

Regardless of the stated fact about how our legislator decided in this way regarding the legal nature of securities, it is understandable that, both in theory and in practice, there are different approaches and understandings about the legal nature of securities. It is obvious that their starting point and the basis for understanding have their roots in whether or not they accept, in addition to contracts, a unilateral declaration of will as one of the sources of obligations. If a unilateral declaration of will is denied as a source of obligations, then inevitably there can be no other basis for determining the legal nature of securities than the contractual one (Majstorović, 2021; Savić, 2022) . Hence the starting point of the contractual theory about the legal nature of these securities, according to which the obligation from the securities cannot arise before the fulfillment of those conditions that are relevant for the existence of the contract - namely, in the first place, the agreement of the debtor and the creditor on the essential elements of such a contractual relationship. Therefore, the contract theory, denying that securities represent a special source of obligations, because the obligation from such securities can only arise by concluding a contract between the issuer and the recipient (buyer), in fact it limits itself by understanding that, when it comes to securities, there is no source in a unilateral declaration of will , that is, it cannot be (Schär, 2021) . In other words, according to this theory, the security would represent a document that is essentially a contract between the debtor - the issuer of such security, and the creditor - the bona fide owner of the security, thus acquired in a legal manner (Dašić et al., 2023, Dašić, 2023).

This understanding undoubtedly has its weak side in reality and the fact that, when creating securities, regardless of the really necessary presence of the will of its issuer to form a legal relationship based on the regime of such securities, according to the conditions of the securities, these conditions were not contracted

with anyone , and at least with a known customer, in the future obligation relations that would be created by such an agreement in the way that contractual law provides. Namely, such a theory could not explain how, without a contract, the issuer of a bearer bond must fulfill the obligation from the bond to a bona fide holder with whom no contract of a certain content was ever concluded.

Legal nature of securities

Of the opinion that it was quite reasonable to abandon the understanding advocated by the contract theory and to explain the legal nature of securities by a special source of obligations represented by a unilateral declaration of will, as indirectly done by our legislator. However, even that did not solve everything because, despite such determination, the dilemma remains as to when the obligation from the security arises - when it is created in the appropriate form, or only when it is put into circulation as an additional condition?

Hence the two understandings that appear, not only as a theoretical but also as a practical determination in legal practice.

Namely, without a doubt, the closest institution to the unilateral declaration of will, as a special source of obligations, is the offer to conclude a contract, but this similarity carries with it an appearance that is important. An offer to conclude a contract is always addressed to a known or recognizable person (Sobiech et al., 2021) . It is certain that securities can be registered in a name, but that name is regularly entered after the nominee agrees to enter into the relationship whose content is indicated in the document. The question is, however, whether the obligation from the security arises even before the security has reached the hands of the named owner or bona fide holder, regardless of whether it is a registered or bearer security. It can certainly happen that the issuer of the document loses it, it is stolen from him, and it ends up in the hands of the conscientious holder or the named owner of the document. In that case, the issuer would not be able to successfully assert a possible objection against the first acquirer or a negligent acquirer, but must fulfill the obligation from the paper (Vuković, et al., 2023). It is obvious that no contract is the basis of such a legal relationship between the issuer and the bona fide owner, and therefore it should not and would not be possible in such an ordinary example to defend not only the contractual theory as correct, but also the theory according to which the obligation for the issuer arises by the very creation securities. If it is not put into circulation, there is no doubt that there is still no one who would acquire the right to fulfill the obligation from such a paper, that is, exercise that right, primarily because the paper cannot be presented to the debtor. Such a theory about, conditionally speaking, a potential obligation, called the creation theory, is also present in practice, but it is difficult to explain the existence of a debtor without a creditor, so it is not justified to accept the

existence of a legal relationship before the security reaches the hands of the conscientious owner. , as a creditor.

A declaration of will by one person for the purpose of creating a unilateral obligation of a certain content is relevant in our law, regardless of whether at the time of the declaration it is known or unknown (if not named) who is the holder of the right to fulfill the unilateral obligation. He, unlike the contract as a source of obligations, will be legitimized as a creditor only later. However, it should be borne in mind that in the case of a contract, the legal relationship on this basis is created at the same time by agreed statements, while in the case of a unilaterally declared will, the right is "born" later with the appearance of a person who fulfills the conditions of such a unilaterally declared will, i.e. then he accepts the conditions according to which he becomes a creditor, that is, in the case of securities, he accepts the same conditions when he becomes a bona fide acquirer of securities.

Our legislator was obviously not burdened by the contradictions that the contractual and creation theory have in terms of the legal nature of securities. He opted for the one that logically best corresponds to our subsequent decisions regarding the circulation of those securities, which is the moment when the security is handed over by its issuer to its user (Nikolić, 2023).

By accepting such a solution, there is no potential possibility that obligations from such paper arise before it is put into circulation by its issuer. Thus, for our legal area, this theory, which we call emission, solves many practical issues, among which the question form as an essential ingredient of securities.

Namely, when it comes to the form, for the contract theory, those regulations that relate to the validity of the contract would have to apply from the point of view of such a theoretical and practical approach, while from the point of view of those who, for the legal nature of securities, accept a unilateral declaration of will as a source of binding relationship, it remains to consider in which form such a statement must be expressed in order to be relevant for the evaluation of the validity of such a document (Bremus et al., 2020). This is regardless of whether it is the theory of creation or emission, although for us the latter is more interesting precisely because of its acceptance in our legislative practice.

Legal regime of the form of securities

Excluding the Bill and Check Laws, which regulated the subject matter of these special securities according to international standards from the very beginning in the middle of the 20th century in a unique way, the ideological views, the Constitutional Act and the subsequent legal regulations of our country, which related to the concept of property, and in connection with it both contained and forms of securities, were in principle neglected until the codification of the obligation rights (Bučalina & Pejović, 2022). The Law on Obligations is in the

general provisions adopted the classic conception of the form and essential ingredients of a security as a written document (Bevanda et al., 2021). The definition of a security as a written document clearly indicates a materialized document in written form in which is incorporated the right that the creditor (legal owner) can exercise only with the presentation of the document itself.

It remained so until recently, despite the provision of the law itself, according to which it is possible to apply a different solution to the obligation relations determined by another law, and despite the fact that the legislator, using this right, passed a special law on securities, which refers to the conditions, method of issuance and transfer of shares, bonds, treasury bills, certificates and commercial bills (Juelsrud & Wold, 2020). Namely and in terms of the law, a security is understood as a written document that is in the name of the bearer, but also their dematerialization in cashless trade by debiting or approving accounts. Our law, in other words, when it comes to securities, hardly deviates from their material nature. The second question is, what could be meant by the mentioned term in today's conditions, i.e. whether the materialized form of papers in the form of documents is always identical to its apparent form or not.

The impact of general technological progress, means and their possibilities on law is undoubted and historically confirmed precisely through the form of legal acts. This applies especially to those acts which in today's sense of the word are considered mass, which is exactly the case with securities and their circulation in the conditions of the existence of organized and specialized markets, such as the stock exchange. This massiveness has another reflection on obligation law (Fraisse et al., 2020). Regardless of the adopted principle of uniform regulation of legal relations in this area, excluding exceptions of course, the fact is that the technique interferes with the specificity and need for specificity of regulations typical of commercial law (De Jonghe et al., 2020). Legal institutes reserved for other participants in contractual relationships that do not have the characteristics of entities that perform economic activity, have characteristic individualities that in a classic form make visible all phases and forms of the process of negotiation, conclusion and fulfillment of contracts. Whether we like it or not, this diversity, not only of subjects but also of the method of concluding legal transactions, in itself imposes specificities that in the field of economic relations are reflected in the need for special regulation (Klinčov et al., 2022). The former, almost without exception, the presence of contracted parties is today, at least in commercial law, an exception as a rule, because it is performed between absent contractors, who, in the process of concluding the deal, are often very far away in their own country, as well as in another country, which causes international implications. Hence the understanding that the scriptural form is necessary in such a situation, but it is increasingly being replaced by electronics with its own signs (Milenković et al., 2023). The complexity and lack of knowledge on a professional level of the specifics of trade conditions and procedures in some cases, introduces into the

intermediate space specialist mediators who now conclude business arrangements with each other, instead of those on whose behalf they appear on the market. This phenomenon is precisely characteristic of dealing with securities on the stock exchanges.

The evolution of forms of money, banks and other financial institutions, enables the creation of giratical money, and lately also scriptural forms, records and accounts receivable balances from the basis of circulation and issuance of securities (Biswas et al., 2022) .

This form of scriptural establishment of the securities regime is also represented in our law. This in itself confirms that legal institutes appear in accordance with the needs of their use. Along with the rule that need is the real incentive for innovation, it should also be added that this applies to its application (Cvetković, 2023) . In our law , however, there is no need for an absolutely new one, but in the adaptation of what already exists and functions in the world, true in conditions that differ in many ways from ours, but still not in such a way that the way of dematerialized papers that used by us would not be compatible. The question can still be asked in a slightly modified form, i.e., when and how, in our conditions, to apply, let's call it conditionally, a new dematerialized appearance form for all or only for special types of securities, and in connection with that, how to change the code our ruling doctrine on the incorporation of rights in securities when those securities do not exist in the physical sense (Ilić et al., 2022 ; Milanović, 2023) . In other words, it is necessary to solve the problem of establishing a legal regime of securities without papers and, consequently, such turnover, which will be automated in the procedural sense to such an extent that the expression of the will of the seller-owner of the paper, instead of in the classic sense, is modified so that only the beginning, in the form of an order, provides all the necessary elements for the process to proceed according to predetermined rules and procedures, which ultimately lead to the change of ownership of the " papers " and the consequent payment, which establishes the property balance of the participants in that procedure, including, at the same time, not only seller and buyer, but also intermediaries .

In order to be able to fulfill this task, it is necessary to approach the essence of the problem, which primarily consists in looking at the essential material and process elements of the creation (issue), circulation and realization of rights from securities, and then determine the changes that are necessary in the assumed new conditions , in order to be able to implement or establish a new legal regime, which builds on the old one as its continuation, without breaking the necessary continuity(Vladisavljević et al., 2023).

One of the important features of securities (deed, property rights and incorporation), the mandatory form is the foundation for the others , because they are enabled by it, there is no doubt that an exposition on the possibility and

necessity of its replacement would be impossible , if the issue of the current form is does not approach with all the reasons that appear in legal transactions, not only in the civil but also in the administrative branch of law (Meier et al., 2021) .

Conclusion

According to what has been stated, therefore, it remains for us to consider the purpose and types of the form, as an important factor in assessing the need to adapt it to the technical possibilities and needs of traffic. For this purpose, it is necessary, in our opinion, to consider those appearing forms of form in contract law for declarations of will and accordingly apply them to situations in which this form should appear for cases of unilateral declaration of will and, in connection with that, about the relevant form of documents of value and necessity, that just such a form should be represented in such a unilateral act of will. At the same time, of course, this method does not mean that we accept the contract theory when explaining the legal nature of securities, but we only use the appropriate application of those explanations that refer to the form of the declaration of will, which, in our opinion, would suit the purpose.

The discussion about the form of securities is important if we want to revise the current form of that form, especially for the reason that the form of such acts is important for their validity, and serves to implement the principles of incorporation and presentation, and improves negotiability. Any change in the regulation that refers to the mandatory form should be in function of the economic and traffic expediency of the securities and the legal relations that will support this expediency.

It is interesting that our science, when it comes to form, focuses its attention mainly on the source of obligation relations, which have always been indisputable as such, and arise from the will of the participants in the legal transaction. It is about the contract, which, as a source of contractual relations, has always been in the center of attention when it comes to its form, that is, the form of declarations of will on the basis of which the contractual relationship was created. Was the problem of form with other sources of law so insignificant that it did not deserve attention, or was the problem in which all sources of obligations were recognized, leaving aside compensation for damages where, by the nature of things, this problem does not arise? There is no doubt, therefore, that from the point of view of the obligation of form in those obligation relationships that arise from declarations (declaration) of will, this problem, at least when it comes to securities, always remains current or at least actualized in a situation where the issue of changing the (in)adequate form of the form become dominant. We recognize the importance of form in those obligation relationships that have their source in the contract, there is no obstacle, but on the contrary, there is a need to consider the matter of form, when several subjects are involved with the aim of

legal obligation, to consider knowledge from this area accordingly. for other cases of the source of obligations, namely in case of a unilateral declaration of will and securities as one of the ways of creating an obligatory legal relationship.

Literature

1. Bevanda, V., Macura, R., & Blanuša, A. (2021). The role and importance of business economics in the development of modern companies and organizations. *Društveni horizonti*, 1(1), 107-125. <https://doi.org/10.5937/DruHor2101107B>
2. Biswas, S., Horváth, BL, Zhai, W., (2022). Eliminating the tax shield through allowance for corporate equity: Cross-border credit supply effects. *J. Money Credit Bank* . 54(6), 1803–1837.
3. Bremus, F., Schmidt, K., Tonzer, L. (2020). Interactions between bank levies and corporate taxes: How is bank leverage affected? *J. Bank. Finance* 118, 105874.
4. Bučalina, M. A., & Pejović, B. (2022). Theoretical conceptualization of entrepreneurship. *Društveni horizonti*, 2(4), 235-253. <https://doi.org/10.5937/drushor2204235B>
5. Cvetković, M. (2023). Crypto as the subject of a contractual obligation under the Markets in Crypto Assets Regulation (MICA) and the Digital Assets Act. *Proceedings of the Faculty of Law in Nis* , 62 (100), 159-187. <https://doi.org/10.5937/zrpfno-48243>
6. Dašić, B. (2023) Financing sports from the budget of the republic of Serbia. *Sports, media and business*, 9(2), 183-194. <https://doi.org/10.58984/smb2302183d>
7. Dimitrijević, M. (2023). Monetary credibility as a social value in contemporary monetary law and the law of central banks. *Proceedings of the Faculty of Law in Nis* , 62 (99), 97-118. <https://doi.org/10.5937/zrpfno-45419>
8. Dašić , B., Župljanić, M. & Pušonja, B. (2023). The role of the regulatory framework on foreign direct investment inflows. *Aksionarstvo* , 29(1), 95-112
9. De Jonghe, O., Dewachter, H., Ongena, S. (2020). Bank capital (requirements) and credit supply: Evidence from pillar 2 decisions. *J. Corp. Finance* , 60, 101518.
10. Fraise, H., Lé, M., Thesmar, D. (2020). The real effects of bank capital requirements. *Manage. Sci.* 66 (1), 5–23.
11. Galjak, I. (2022). Legal regulation of investments in the public sector. *Review of law - public sector* , 2(1), 27-44.
12. Ilić Popov, G., & Popović, D. (2023). From facts to truth in the tax procedure. *Proceedings of the Faculty of Law in Nis* , 62 (98), 15-35. <https://doi.org/10.5937/zrpfno1-45264>
13. Ilić, B., Milojević, I., & Miljković, M. (2022). The role of the joint stock company in the sustainability of capital development. *Sustainable*

- Development* , 4 (1), 19-28. <https://doi.org/10.5937/OdrRaz2201019I>
14. Juelsrud, RE & Wold, EG (2020). Risk-weighted capital requirements and portfolio rebalancing. *J. Financial Intermediation* 41, 100806
 15. Klincov, R., Marjanović, N., Trnavac, D., Novović, M. & Obućinski, D. (2022). Understanding economic laws in modern economic theory. *Shareholding*, 28(1), 99-114
 16. Majstorović, A. (2021). Legal framework of modern budget accounting. *Financial Advisor*, 26(1), 7-24
 17. Meier, S., Gonzalez, MR, Kunze, F. (2021). The global financial crisis, the EMU sovereign debt crisis and international financial regulation: lessons from a systematic literature review. *Int. Rev. Law Econ.* 65, 105945.
 18. Milanović, N. (2023). Management of financial sustainability of non-profit organizations. *Sustainable Development* , 5 (1), 7-17. <https://doi.org/10.5937/OdrRaz2301007M>
 19. Milenković, N., Radosavljević, M., & Vladislavljević, V. (2023). Using open-license applications in business enterprise program development. *Sustainable Development* , 5 (2), 35-49. <https://doi.org/10.5937/OdrRaz2302035M>
 20. Nikolić, L. (2023). Modern financial technologies and traditional banking. *Proceedings of the Faculty of Law in Nis* , 62 (100), 125-142. <https://doi.org/10.5937/zrpfno-47158>
 21. Rstić, M. (2022). Menadžerski stavovi kao problemi u odlučivanju sportskih organizacija. *Menadžment u sportu*, 13(1), 25-31
 22. Savić, B. (2022). The importance of integrated reporting for the functioning of the capital market. *Shareholding* , 28(1), 7-20
 23. Schär, F. (2021) Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets. *Federal Reserve Bank of St. Louis Review* , Vol. 103, No. 2.
 24. Sobiech, AL, Chronopoulos, DK, Wilson, JO (2021). The real effects of bank taxation: Evidence for corporate financing and investment. *J. Corp. Finance* 69, 101989
 25. Vladislavljević, V., Milenković, N., Simić, M., Radosavljević, M. & Mičić, S. (2023). Elektronsko plaćanje u savremenom poslovanju sportskih kompanija. *Menadžment u sportu*, 14(1), 63-74.
 26. Vuković, M., Urošević, S., Dašić, D. (2023) Threats to objectivity in the social science research. *Sports, media and business*, 9(2), 143-158. <https://doi.org/10.58984/smb2302143v>

MEĐUZAVISNOST VOLATILNOSTI CENE NAFTE I DEVIZNOG KURSA RUBLJE TOKOM KRIZE U UKRAJINI

Suzana Balaban⁹ Vladimir Pavićević¹⁰ Milica Simić¹¹

doi: 10.59864/Oditor12402B

Originalni naučni rad
UDK: 336.74
339.13.025:327.5(477)"2022"

Apstrakt

Predmet istraživanja ovog rada je uticaj krize u Ukrajini na volatilnost rublje i nafte, kao i korelacija ovih vrednosti međusobno. Kako bi istražili uticaj krize u Ukrajini, kao eksternog šoka na volatilnost rublje i sirove nafte analizirane su promene odnosa njihovih vrednosti na dnevnom nivou, u posmatranom periodu tokom 2022. godine i prva četiri meseca 2023. godine. Analizom vremenskih serija, a potom i komparativnom analizom navednih podataka i korišćenjem GARCH modela utvrđena je određena divergentnost u samoj prirodi ponašanja i kretanja rublje i nafte neposredno pre početka i tokom trajanja krize u Ukrajini, u toku posmatranog perioda. Nema sumnje da su se tržišta ruske valute i sirove nafte u ovom periodu ponašala mnogo volatilnije, što implicira i značajno veći uticaj na ekonomske aktivnosti, imajući u vidu nestabilnost vrednosti rublje i nafte kao značajnih činilaca uticaja na ukupna ekonomska kretanja u svetu.

Ključne reči: rublja, sirova nafta, komparativna analiza, GARCH, korelacija

JEL: C58 G15 M24

Uvod

Predmet ovog istraživanja su vrednosti valutnog para RUB/EUR i sirove nafte kao robe koja u značajnoj meri utiče na vrednost valuta i ostalih roba, odnosno analiza uticaja krize u Ukrajini na volatilnost rublje i cene sirove nafte. Istraživanje je sprovedeno u kontekstu analize promene vrednosti ruske rublje i nafte u periodu od 01.01.2022. do 30.04.2023. Centralni problem koji se razmatra je volatilnost vrednosti rublje i nafte pod uticajem aktuelne krize u Ukrajini, te njihova korelacija u navedenom periodu. Obzirom da su pomenuta politička i ekonomska dešavanja značajno uticala na vrednost posmatranih varijabli, primarni cilj ovog istraživanja je dobijanje odgovora na pitanje kolike i kakve su po prirodi promene

⁹ Docent, dr Suzana Balaban, Alfa BK Univerzitet, Palmira Toljatija 3, Beograd, Srbija, e-mail: suzana.balaban@alfa.edu.rs

¹⁰ Doktorand, mr Vladimir Pavićević, Alfa BK Univerzitet, Fakultet za finansije, bankarstvo i reviziju, Palmira Toljatija 3, Beograd, Srbija, e-mail: vladimirpavicevic@gmail.com

¹¹ Docent, dr Milica Simić, Alfa BK Univerzitet, Palmira Toljatija 3, Beograd, Srbija, e-mail: milica.simic@alfa.edu.rs

vrednosti rublje i nafte i priroda njihovog međusobnog odnosa u posmatranom periodu. Shodno tome zadaci istraživanja su:

- utvrđivanje promena vrednosti valutnog para RUB/EUR i odnosa OIL/EUR pod uticajem krize u Ukrajini u periodu od šesnaest meseci;
- upoređivanje odnosno komparacija vrednosti rublje i nafte u odnosu na evro u navedenom periodu;
- izračunavanje i obrazloženje vrednosti korelacione matrice odnosno koeficijenta korelacije r između uslovnih varijansi varijabli: RUB/EUR i OIL/EUR, dobijenih korišćenjem GARCH modela.

Polazna hipoteza koja je testirana u istraživanju glasi: ruska rublja i nafta su se tokom krize u Ukrajini, u posmatranom periodu, pokazale kao vrednosti koje su umereno međusobno povezane. Kroz vremenske serije dnevnih podataka upoređene su vrednosti rublje i nafte u odnosu na evro, i uočene su sličnosti i razlike. Obe posmatrane serije podataka predstavljene su odvojeno, zbog tačnijeg prikaza rezultata analize.

Rezultati istraživanja su prezentovani deskriptivno, zatim kroz nekoliko tabela i grafikona sa uporednim rezultatima. Korišćenjem GARCH modela ocenjena je volatlnost posmatranih varijabli i na kraju je izračunata njihova korelacija.

Pregled literature

Devizni kursevi većine privredno razvijenih zemalja sveta svakodnevno više ili manje osciliraju, a posebno su interesantni dugoročni trendovi, važni prilikom ugovaranja dugoročnih komercijalnih i finansijskih poslova (Obradović et al., 2018). Volatilnost predstavlja raspon i brzinu kretanja cena i kao takva daje mogućnost merenja rizika određenih ekonomskih parametara. Kod kretanja vrednosti valutnog para RUB/EUR imamo volatilnija kretanja, i to iz vrlo logičnog i poznatog razloga. Pre svega, kriza u Ukrajini je direktno vezana za involviranost Rusije i u političkom i u ekonomskom pogledu. Početkom ukrajinske krize, došlo je do povećanja cena energenata, a samim tim i stope inflacije gotovo u svim državama sveta, te bi pažnju trebalo obratiti na agilne metode upravljanja u cilju prilagođavanja promenljivim uslovima na tržištu (Balaban, Đurašković, 2021).

Očigledno je da su porast cena energenata i hrane na svetskim tržištima od početka ukrajinske krize, snažno uticali na jačanje rublje kao valute jedne od država sa najvećim učešćem u proizvodnji i izvozu energenata i hrane na svetu. Rusija proizvodi oko 18% non-OPEC proizvodnje i 12% ukupne svetske proizvodnje u 2021. godini (Onour, Abdo, 2022).

Kako bi što studioznije ispitali uticaj krize u Ukrajini na promene vrednosti rublje i nafte, izvršićemo analizu volatlnosti ovih vrednosti u posmatranom periodu.

Ovo iz razloga što jedna od osnovnih karakteristika plivajućih deviznih kurseva jeste visoka volatilnost koja se ispoljava na nekoliko načina (Balaban, 2019), i pomoću nje možemo na kvalitetan način meriti promene navedenih vrednosti. U poslednjih nekoliko decenija, pogotovu posle kolapsa Breton-Vudskog sporazuma o fiksnim kursovima, volatilnost deviznih kurseva je dobila posebnu pažnju kod makroekonomske analize, obzirom da pod uticajem globalizacije svetske ekonomije utiče na brojne makroekonomske faktore.

Sa druge strane, cene nafte i devizni kursevi su povezani sa ekonomijom. Zapravo, obe ove serije podataka pomno prate učesnici na finansijskim tržištima i kreatori politika. U literaturi postoje različiti teorijski modeli koji povezuju cene nafte i devizne kurseve. Seminarski radovi Krugmana i Goluba, oba napisana 1983. godine, pružaju teorijske modele koji čine temelj mnogih empirijskih rezultata (Anjum, 2019). Oni tvrde da zemlje izvoznice nafte imaju povećanje bogatstva u kratkom roku kada cene nafte rastu, što dovodi do poboljšanja bilansa tekućeg računa, odnosno apresijacije deviznog kursa valute zemlje izvoznice nafte.

Analiza promene apsolutnih vrednosti RUB/EUR i OIL/EUR

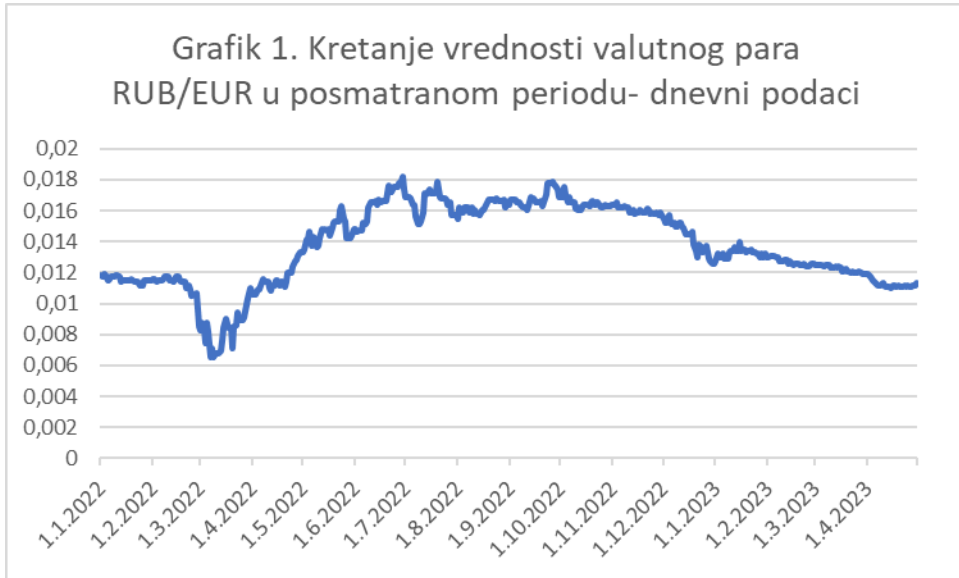
U cilju poređenja vrednosti ruske rublje sa naftom kao robom široke potrošnje na globalnom tržištu analizirane su vremenske serije podataka za rusku rublju i vrednosti barela nafte u odnosu na evro tokom posmatranog perioda,

Analizom grafika 1, uočava se nekoliko ključnih tačaka dnevnih preseka. Upravo te ključne tačke razlikuju kretanje vrednosti ruske rublje prema evru u odnosu na bilo koju drugu nacionalnu valutu čije bi kretanje vrednosti posmatrali u analiziranom periodu. Minimalna vrednost valutnog para RUB/EUR u posmatranom periodu bila je 07. marta odnosno 09. marta 2022. godine i iznosila je 0,0065 evra za jednu rublju. Kao što možemo videti, odmah nakon početka krize u Ukrajini, vrednost ovog valutnog para je oslabila sa 0,0109 evra za jednu rublju na zatvaranju 23. februara 2022. godine na 0,0065 evra za jednu rublju, na zatvaranju tržišta 07. marta 2022. godine, što je pad rublje od 40,37% u prvih dvanaest dana od početka rata u Ukrajini.

Međutim, vlasti Ruske federacije donose odluku o pegovanju vrednosti rublje za vrednost unce zlata, a krajem marta i odluku o prodaji energenata: gasa i nafte isključivo u rubljama, definisanu po unapred određenoj šemi za plaćanje (Pavićević, 2022). Takve ekonomsko-političke odluke ruskih vlasti su dovele do gotovo konstantnog rasta rublje u odnosu na evro od tih događaja. Tako već 31. marta 2022. godine, kad se već znalo da će Rusija energente prodavati samo za sopstvenu valutu, odnos valutnog para RUB/EUR je bio blizu onoga sa početka ukrajinske krize i iznosio je 0,011 evra za 1 rublju. Trend je nastavljen i tokom aprila, maja i juna meseca, pa maksimalnu vrednost valutnog para RUB/EUR imamo 29. juna, kada vrednost iznosi 0,0182 evra za jednu rublju, što je

povećanje od 180,00% u odnosu na minimalnu vrednost od 07. marta i 09. marta 2022. godine, tek petnaestak dana od početka krize u Ukrajini.

Grafik 1. Kretanje vrednosti rublje u periodu od 01.01.2022. do 30.04.2023.



Izvor: kalkulacija autora na osnovu podataka dostupnih na <https://exchangerates.org.uk/>

Poput analize promene vrednosti ruske nacionalne valute u datom periodu, i za potrebe ove analize za referentnu vrednost uzet je evro, kako bi komparativna analiza što kvalitativnije odslikavala odnos izabranih varijabli. Iako se cena nafte na berzama izražava u dolarima, ovde je kao odgovarajući paritet uzet odnos OIL/EUR.

Na osnovu analize Grafika 2 uočava se uvećana volatilitnost tržišta kod naftnog tržišta, nego li je to obično slučaj kod volatilitnosti nacionalnih valuta. Ako pogledamo minimalnu i maksimalnu vrednost nafte na dnevnom nivou na zatvaranju tržišta, izraženu u evrima u posmatranom periodu, uočićemo koliko su procentualno iznosile promene vrednosti nafte. Jedna od minimalnih vrednosti nafte u posmatranom periodu bila je 66,42371 EUR, 01. januara 2022. godine, a maksimalna vrednost u istom posmatranom periodu iznosila je 116,70415 EUR, na dan 06. mart 2022. godine, desetak dana nakon početka ratne krize u Ukrajini. Dakle, maksimalna vrednost nafte je bila veća od njene minimalne vrednosti za 75,70%.

Grafik 2. Kretanje vrednosti barela nafte u periodu od 01.01.2022. do 30.04.2023.



Izvor: kalkulacija autora na osnovu podataka dostupnih na <https://exchangerates.org.uk/>

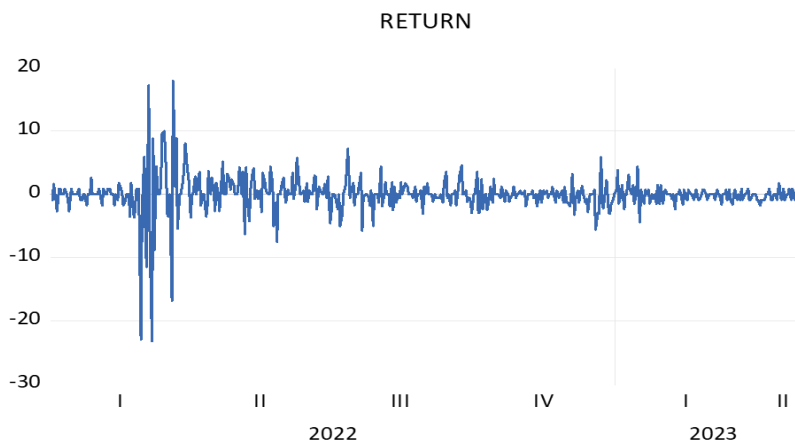
Treba imati u vidu da je nakon pika na grafiku, vrednost nafte, uz manje oscilacije, uglavnom opadala, što znači da je nagli porast cene u roku od oko dva meseca, dominantno bio špekulativnog karaktera. Tome, ide u prilog činjenica, da je dana 18. marta 2023. godine, dok još traje kriza Ukrajini, vrednost nafte iznosila 61,71406 EUR, što je manje od vrednosti na početku 2022. godine. Volatilitnost nafte kao mera rizika, ovim odnosom pokazuje veći rizik od investiranja u naftu.

Volatilitnost valutnog para RUB/EUR tokom krize u Ukrajini

Analiza volatilitnosti valutnog para RUB/EUR pre i tokom još aktuelne krize u Ukrajini, je podrazumevala analizu 485 podataka, tačnije logaritmovanih dnevnih stopa prinosa valutnog para RUB/EUR u periodu od šesnaest meseci. Autori su u prvom koraku analizirali grupisanje volatilitnosti pomenute vremenske serije.

Grafik 3 jasno pokazuje da postoji grupisanje volatilitnosti stopa prinosa valutnog para RUB/EUR. Kako su ekstremne vrednosti vremenske serije valutnog para RUB/EUR uočljive u I kvartalu 2022. godine, i grupisanje volatilitnosti vremenske serije logaritmovanih dnevnih stopa prinosa valutnog para RUB/EUR pokazuje identičan slučaj, što je rezultat početka ratne krize u Ukrajini.

Grafik 3. Grupisanje volatilnosti – valutni par RUB/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

U drugom koraku autori uz pomoć Bai-Perron testa ocenjuju da li je poznati egzogeni događaj, početak krize u Ukrajini, delovao na pojavu strukturnog loma u posmatranoj vremenskoj seriji podataka. Na osnovu rezultata testa zaključujemo da kod posmatrane vremenske serije nema strukturnog loma (*Tabela 1*).

Tabela 1. Rezultat Bai-Perron testa – valutni par RUB/EUR

Bai-Perron test of L+1 vs. L sequentially determined breaks			
Uključeno 484 uzorka			
Sequential F-statistic determined breaks: 0			
Break test	F-statistic	Scaled F-statistic	Critical Value
0 vs. 1	1.677169	1.677169	8.58
Significant at the 0,05 level.			

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Primenom ADF i KPSS testova jediničnog korena ocenjena je stacionarnost posmatrane vremenske serije. ADF test polazi od H_0 da posmatrana serija ima jedan jedinični koren, i u tom slučaju nije stacionarna. Obzirom da je vrednost verovatnoće $p < 0,05$ u oba slučaja, posmatrana serija nema jedinični koren (*Tabela 2*), odnosno stacionirana je, što je od temeljne važnosti za nastavak istraživanja.

Tabela 2. Rezultati ADF testa – valutni par RUB/EUR

Exogenous: Constant		
	t-statistic	Prob.*

Augmented Dickey-Fuller test statistic	-24.96920	0.0000
Exogenous: Constant, Linear Trend		
Augmented Dickey-Fuller test statistic	-24.98543	0.0000

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

U cilju provere dobijenih rezultata primenjen je KPSS test koji polazi od hipoteze H_0 da je posmatrana vremenska serija stacionarna. Stacionarnost posmatrane vremenske serije potvrđuje i rezultat KPSS testa obzirom da je $p > 0,05$ u oba slučaja (Tabela 3).

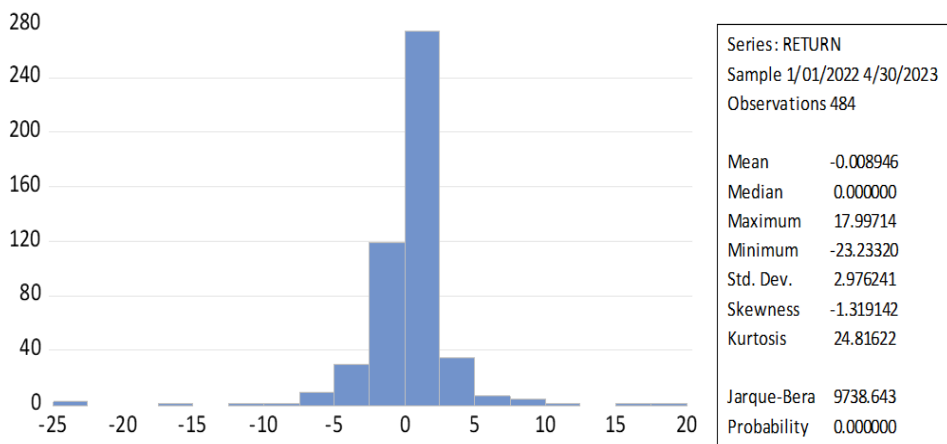
Tabela 3. Rezultat KPSS testa – valutni par RUB/EUR

Exogenous: Constant	
	LM-Stat.
Kwiatkowski-Philips-Scmidt-Shin test statistic	0.166746
Exogenous: Constant, Linear Trend	
Kwiatkowski-Philips-Scmidt-Shin test statistic	0.068106

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Za detaljniju analizu posmatrane vremenske serije korišljena je deskriptivna statistika (Grafik 4). Na osnovu dobijenih rezultata Jarque-Bera testa može se zaključiti da posmatrana vremenska serija nema normalnu distribuciju, što je i uočljivo na Quantile-Quantile (QQ) histogramu (Grafik 5). Koeficijent asimetrije je manji od 0 što znači da posmatrana vremenska serija ima negativnu asimetriju, dok koeficijent spljoštenosti iznad 3 pokazuje da je posmatrana serija podataka izdužena. Vrednost koeficijenta asimetrije je negativna: -3,817822, što pokazuje da se radi o izraženoj negativnoj asimetriji. Koeficijent spljoštenosti sa iznosom od 47,59308 apsolutno odgovara izduženosti koja je prikazana na histogramu (Grafik 4.) i koja je značajno veća od one koja je karakteristična za normalnu distribuciju.

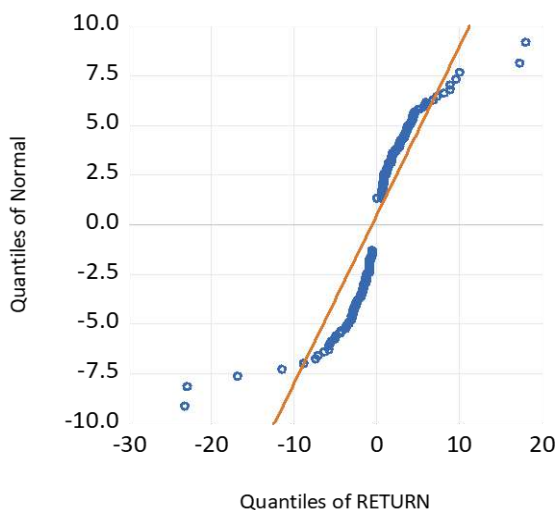
Grafik 4. Deskriptivna statistika – valutni par RUB/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Kao što je već navedeno, nalaz da posmatrana serija podataka nema normalnu distribuciju potvrđen je i sledećim grafikom:

Grafik 5. QQ histogram – valutni par RUB/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

U daljem radu autori istražuju autokorelaciju u podacima posmatrane vremenske serije. Kada je u pitanju autokorelacija i u ovom analiziranom slučaju poći će se od hipoteze H_0 da u posmatranoj vremenskoj seriji podataka ne postoji autokorelacija.

Tabela 4. Rezultati testa za detektovanje autokorelacije – valutni par RUB/EUR

Q	AC	PAC	Q-Stat	Prob
(1)	0,003	0,003	0,0032	
(10)	-0,052	-0,092	31,828	0,0000
(20)	0,046	-0,007	59,701	0,0000
(30)	-0,027	-0,004	69,038	0,0000

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Posmatrajući dobijene rezultate o autokorelaciji, parcijalnoj korelaciji, te Q-statistici i verovatnoći, a prateći verovatnoću na Q (10), Q (20) i Q (30), vrlo jednostavno se može primetiti da je u svim slučajevima $p < 0,05$, što znači da polazna hipoteza nije potvrđena i da autokorelacija postoji. Shodno tome, utvrđena je adekvatna ARMA specifikacija na bazi najniže vrednosti Schwarz criterion (SIC) - MA (1) kako bi se otklonila autokorelacija i sproveo test heteroskedastičnosti.

Heteroskedastičnost pokazuje činjenicu da je varijansa neke slučajne greške različita za različite vrednosti određene nezavisne promenljive, odnosno da ne prati konstantnu vrednost. U tom smislu autori ispituju da li postoji ARCH efekat, kako bi videli da li se javlja heteroskedastičnost, što je veoma važno sa aspekta nastavka istraživanja.

Tabela 5. Rezultati ARCH testa – valutni par RUB/EUR

Heteroskedasticity Test: ARCH			
F-statistic	19,46771	Prob. F (1,481)	0,0000
Obs*R-Squared	18,78823	Prob. Chi-Square (1)	0,0000

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Na osnovu rezultata (Tabela 5) može se uočiti da postoji ARCH efekat, odnosno da je $p < 0,05$. Korišćenjem najnižeg SICa izabran je odgovarajući GARCH model, što je u ovom slučaju FIGARCH (1,1).

Kako bi se utvrdilo da li postoji značajna autokorelacija u rezidualima, prikazane su vrednosti Q (1), Q (10), Q (20) i Q (30) na korelogramu reziduala. U slučaju da te vrednosti u više slučajeva iznose $p > 0,05$, onda bi mogli zaključiti da je posmatrani model dobar i da nema značajne autokorelacije u rezidualima. Nakon što je utvrđeno da li ima autokorelacije u rezidualima, ispitano je da li je prisutan ARCH efekat u rezidualima posmatrane serije podataka.

Tabela 6. Korelogram standardizovanih reziduala – stopa povrata RUB/EUR

Q	AC	PAC	Q-Stat	Prob*
(1)	-0,008	-0,008	0,0346	0,853
(10)	-0,006	-0,005	5,9895	0,816
(20)	0,029	0,030	6,8213	0,997
(30)	-0,012	-0,010	7,2056	1,000

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Na osnovu posmatranih vrednosti verovatnoće u uzorku možemo zaključiti da je model dobar i da nema značajne autokorelacije u rezidualima posmatrane serije podataka (*Tabela 6*).

Na osnovu tabele koja sledi (*Tabela 7*) može se na osnovu dobijene verovatnoće zaključiti da ne postoji ARCH efekat u rezidualima posmatrane vremenske serije podataka, odnosno da je odgovarajući model adekvatno specifikovan.

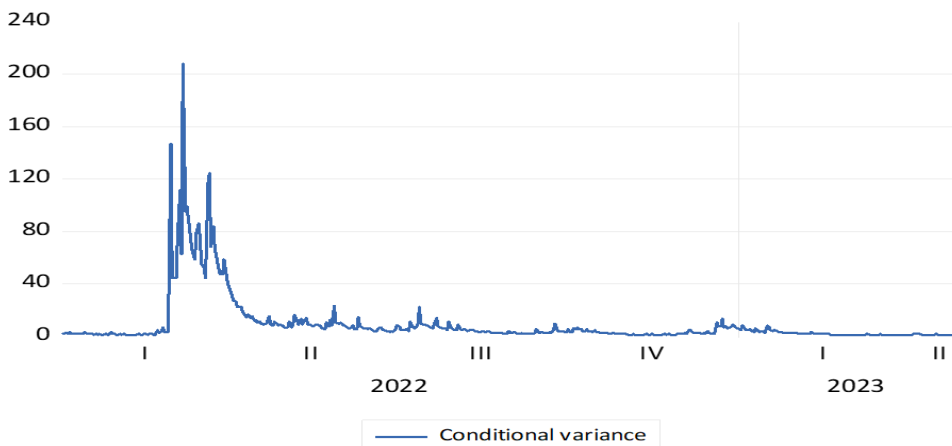
Tabela 7. Testiranje ARCH efekta u rezidualima – valutni par RUB/EUR

Heteroskedasticity Test: ARCH			
F-statistic	0,034141	Prob. F (1,481)	0,8535
Obs*R-Squared	0,034281	Prob. Chi-Square (1)	0,8531

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Na grafiku 6 prikazana je uslovna varijansa derivirana iz FIGARCH (1,1) modela koja prikazuje volatilnost vremenske serije logaritmovanih dnevnih stopa prinosa valutnog para RUB/EUR, što je uslov za izračunavanje korelacije između volatilnosti ruske rublje i volatilnosti cena nafte, a što je predmet istraživanja rada.

Grafik 6. Uslovna varijansa derivirana iz FIGARCH (1,1) modela - par RUB/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Volatilnost cene nafte tokom krize u Ukrajini

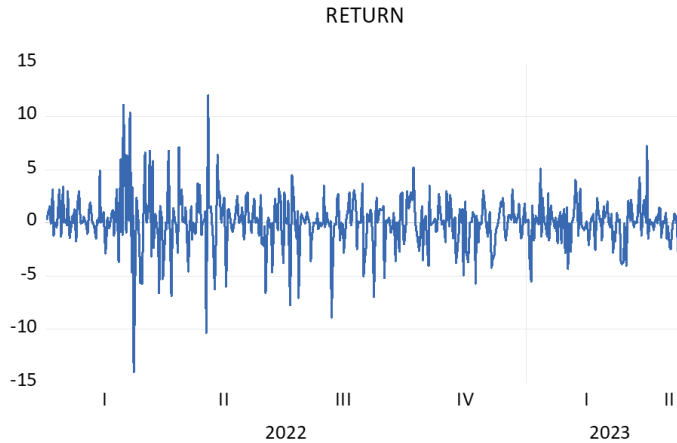
Analiza promene vrednosti sirove nafte izražene u eurima OIL/EUR, pre i tokom aktuelne krize u Ukrajini, podrazumeva logaritmovanu dnevnu stopu prinosa. U skladu sa tim, analiziran je uzorak od 485 podataka. Kao jedna od karakteristika, analizirano je grupisanje volatilnosti vremenske serije logaritmovanih dnevnih stopa vrednosti nafte izražene u eurima, što nije uobičajeno, kako bi taj odnos mogao da se adekvatno uporedi sa valutnim parom RUB/EUR.

Kao što se vidi na grafiku 7, kod malih promena vrednosti stopa prinosa uočavaju se male promene vrednosti posmatrane serije OIL/EUR, dok kod većih promena vrednosti stopa prinosa date vremenske serije imamo velike promene posmatrane serije vrednosti OIL/EUR. Takođe, ekstremne vrednosti vremenske serije OIL/EUR uočavaju se u I i II kvartalu 2022., što je pokazalo i grupisanje volatilnosti vremenske serije logaritmovanih dnevnih stopa prinosa vrednosti sirove nafte, što je posledica započete ratne krize u Ukrajini.

Uz pomoć testa strukturnih lomova, korišćenjem Bai-Perron procedure ispitano je da li je posmatrani egzogeni događaj, odnosno početak ratne krize u Ukrajini, delovao na pojavu strukturnog loma u posmatranoj vremenskoj seriji podataka. Na osnovu rezultata testa (*Tabela 8*) zaključeno je da kod posmatrane vremenske serije podataka nema definisanih strukturnih lomova, izazvanih egzogenim događajem, odnosno u ovom slučaju početkom krize u Ukrajini.

Evo grafičkog prikaza grupisanja volatilnosti za OIL/EUR:

Grafik 7. Grupisanje volatilnosti – OIL/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Kako je prethodno navedeno, sledi test strukturnih lomova, korišćenjem Bai-Perron procedure:

Tabela 8. Rezultat Bai-Perron testa – OIL/EUR

Bai-Perron test of L+1 vs. L sequentially determined breaks			
Uključeno 484 podatka			
Sequential F-statistic determined breaks: 0			
Break test	F-statistic	Scaled F-statistic	Critical Value
0 vs. 1	1.677169	1.677169	8.58
Significant at the 0,05 level.			

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Kao i u prethodnom slučaju, primenom ADF i KPSS testova jediničnog korena autori proveravaju da li je posmatrana vremenska serija podataka stacionarna.

Na osnovu dobijenih rezultata ADF testa (*Tabela 9*) možemo zaključiti da je posmatrana serija logaritmovanih dnevnih stopa prinosa vrednosti OIL/EUR stacionarna.

Tabela 9. Rezultati ADF testa – OIL/EUR

Exogenous: Constant		
	t-statistic	Prob.*
Augmented Dickey-Fuller test statistic	-22.29421	0.0000
Exogenous: Constant, Linear Trend		
Augmented Dickey-Fuller test statistic	-22.35367	0.0000

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Na osnovu dobijenih rezultata KPSS testa može se, kao i kod prethodne primene ADF testa, zaključiti da je posmatrana vremenska serija podataka stacionirana (Tabela 10).

Tabela 10. Rezultati KPSS testa – OIL/EUR

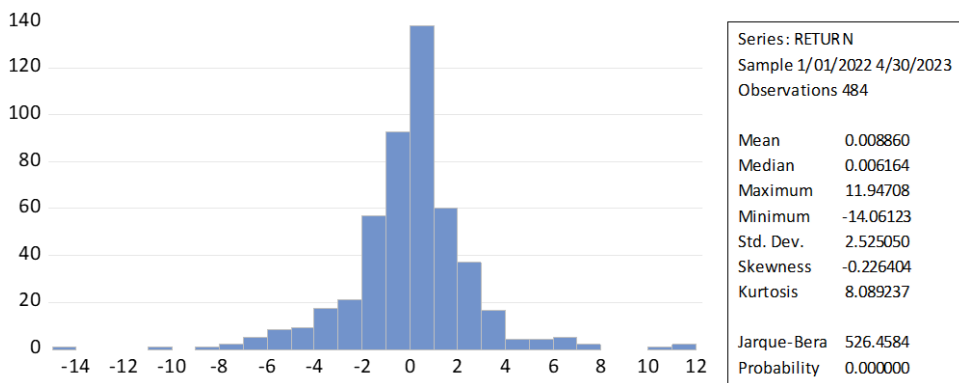
Exogenous: Constant	
	LM-Stat.
Kwiatkowski-Philips-Schmidt-Shin test statistic	0.242345
Exogenous: Constant, Linear Trend	
Kwiatkowski-Philips-Schmidt-Shin test statistic	0.065226

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

U cilju što boljeg opisa podataka posmatrane vremenske serije, predstavljena je deskriptivna statistika. Putem Jarque-Bera statistike testira se normalnost distribucije.

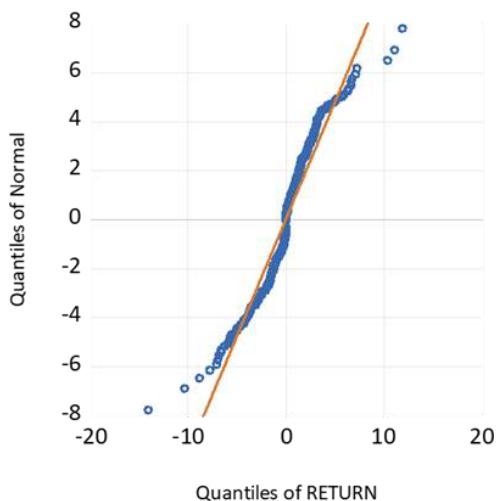
Na osnovu dobijenih rezultata (Grafik 8) može se videti da je vrednost $p < 0,05$, što implicira da posmatrana serija podataka OIL/EUR nema normalnu distribuciju i da značajno odstupa od srednje vrednosti, što potvrđuje i QQ histogram (Grafik 9). Koeficijent asimetrije iznosi -0,226404, te posmatranu vremensku seriju podataka karakteriše negativna asimetrija, dok prema istoj tabeli koeficijent spljoštenosti iznosi 8,089237. Ovoliki njegov iznos znači da je posmatrana serija podataka izdužena, jer je koeficijent spljoštenosti znatno veći od 3.

Grafik 8. Deskriptivna statistika – OIL/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program
Sledi i QQ histogram, koji potvrđuje da nema normalne distribucije.

Grafik 9. QQ histogram – OIL/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Kada je u pitanju autokorelacija i u ovom slučaju se polazi od hipoteze H_0 : u posmatranoj vremenskoj seriji reziduala ne postoji korelacija. Na osnovu dobijenih podataka o autokorelaciji, parcijalnoj korelaciji, Q statistici i verovatnoći, a prateći verovatnoću na Q(1), Q(10), Q(20) i Q(30) uzorku, vrlo jednostavno se može primetiti da je u svim posmatranim slučajevima $p > 0,05$, što znači da je polazna hipoteza potvrđena i da nema autokorelacije u posmatranoj vremenskoj seriji podataka (Tabela 11). Primenom LM testa serijske korelacije dobijen je isti rezultat (Tabela 12). Može se tvrditi da ne postoji autokorelacija u posmatranoj vremenskoj seriji podataka obzirom da je verovatnoća $p > 0,05$.

Tabela 11. Rezultati testa za detektovanje autokorelacije – OIL/EUR

Q	AC	PAC	Q-Stat	Prob
(1)	-0,0016	-0,0016	0,1321	0,716
(10)	-0,021	-0,014	9,7774	0,460
(20)	0,034	-0,033	25,576	0,180
(30)	-0,002	-0,033	40,034	0,104

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Tabela 12. Rezultati LM testa za detektovanje autokorelacije – OIL/EUR

Breusch-Godfrey Serial Corellation LM Test			
H0: No serial correlation at up to 2 lags			
F-Statistic	0,225217	Prob. F (2,481)	0,7984
Obs*R-Squared	0,452819	Prob. Chi-Square (2)	0,7974

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Sledeći korak koji se sprovodi je testiranje heteroskedastičnosti. Na osnovu dobijenih rezultata (*Tabela 13*) možemo uočiti da postoji ARCH efekat, budući da je $p < 0,05$.

Tabela 13. Rezultati ARCH testa – OIL/EUR

Heteroskedasticity Test: ARCH			
F-statistic	5,499866	Prob. F (1,481)	0,0194
Obs*R-Squared	5,460300	Prob. Chi-Square (1)	0,0195

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Na osnovu izračunate vrednosti najnižeg SIC kriterijuma izabran je GARCH (1,1) model. U cilju utvrđivanja adekvatnosti izabranog modela, testirano je postojanje autokorelacije i heteroskedastičnosti u rezidualima ocenjenog modela. Na bazi posmatranih vrednosti zaključujemo da nema autokorelacije u rezidualima (*Tabela 14*):

Tabela 14. Korelogram standardizovanih reziduala posmatrane serije podataka

Q	AC	PAC	Q-Stat	Prob*
(1)	0,046	0,046	1,0263	0,311
(10)	-0,052	-0,054	23,546	0,009
(20)	-0,003	-0,004	33,169	0,032
(30)	0,033	0,017	37,563	0,161

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Nakon toga, testirano je postojanje ARCH efekat u rezidualima:

Tabela 15. Testiranje postojanja ARCH efekta u rezidualima

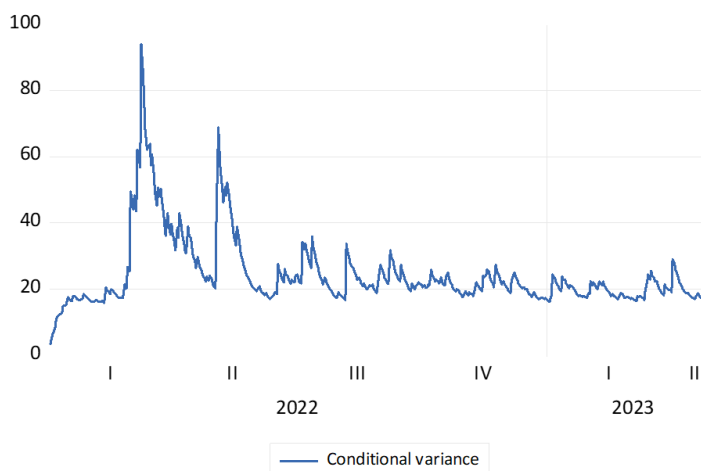
Heteroskedasticity Test: ARCH			
F-statistic	1,016474	Prob. F (1,481)	0,3139
Obs*R-Squared	1,018548	Prob. Chi-Square (1)	0,3129

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Prema vrednostima iskazanim u tabeli 15, ne postoji ARCH efekat u rezidualima posmatrane vremenske serije podataka, jer je $p > 0,05$.

Na grafiku 10 je uslovna varijansa derivirana iz GARCH (1,1) modela:

Grafik 10. Uslovna varijansa derivirana iz GARCH (1,1) modela – OIL/EUR



Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Korelacija volatilnosti rublje i cene nafte na svetskom tržištu

Na osnovu korelacije uslovnih varijansi rublje i nafte deriviranih iz GARCH modela, možemo izvesti odgovarajući zaključak o promenama volatilnosti deviznog kursa rublje pod uticajem volatilnosti sirove nafte tokom krize u Ukrajini. Kako bismo analizirali taj uticaj, prvo smo izračunali nivo korelacije dobijenih vrednosti uslovne varijanse:

Tabela 16. Korelacija uslovnih varijansi rublje i nafte u posmatranom periodu

	RUB/EUR	OIL/EUR
RUB/EUR	1	
OIL/EUR	0,580305	1

Izvor: kalkulacija autora na osnovu podataka <https://exchangerates.org.uk/>, EViews program

Kao što se može videti iz tabele 16 prisutna je pozitivna korelacija između volatilnosti deviznog kursa rublje i volatilnosti nafte. Na osnovu vrednosti koeficijenta korelacije možemo zaključiti da je u pitanju umerena veza (Evans, 1996; Hinkle et al., 2003) uslovnih varijansi RUB/EUR i OIL/EUR, što je dokaz da je volatilnost rublje pozitivnom korelacijom umerene jačine povezana sa volatilnošću nafte u posmatranom šesnaestomesečnom periodu, tokom kog je otpočela i trajala kriza u Ukrajini, zaključno sa 30. aprilom 2023. godine.

Zaključak

Na osnovu posmatranih vremenskih serija podataka, njihove ekonometrijske analize primenom GARCH modela i izračunavanjem korelacije uslovnih varijansi deriviranih iz odgovarajućih GARCH modela, jasno je da postoji pozitivna i umerena, skoro čvrsta korelacija, između promena volatilnosti nafte i volatilnosti deviznog kursa rublje. Stoga, ovaj istraživački rad je potvrdio ono što smo i pretpostavljali, da vrednost ruske rublje ima pozitivnu i umerenu, ka čvrstoj, povezanost sa vrednošću nafte, čiji je Rusija jedan od vodećih svetskih izvoznika.

Čini se da je upravo u vreme uticaja jednog takvog egzogenog šoka, kakav je ratna kriza u Ukrajini, do srži ogoljena činjenica da ruska ekonomija, odnosno u ovom slučaju valuta rublja kao reprezent ruske ekonomije, jeste u značajnom odnosu međuzavisnosti sa naftom kao prirodnim resursom Rusije, koji se eksploatiše i izvozi u velikim količinama.

Literatura

1. Anjum, H. 2019. Estimating volatility transmission between oil prices and the US Dollar exchange rate under structural breaks. *Journal of Economics and Finance* 43: 750;
2. Bagchi, B., Biswajit, P. 2023. Effects of Crude Oil Price Shocks on Stock Markets and Currency Exchange Rates in the Context of Russia-Ukraine Conflict: Evidence from G7 Countries. *Journal of Risk and Financial Management* 16: 64;
3. Balaban, S. 2019. Impact of an unexplained component of real exchange rate volatility on FDI: Evidence from transition countries, *Economic systems*, 43(3-4): 100719. <https://doi.org/10.1016/j.ecosys.2019.100719>
4. Balaban, S., Đurašković, J. 2021. Agile project management as an answer to changing environment, *European Project Management Journal*, 11(1): 12-19. <https://doi.org/10.18485/epmj.2021.11.1.2>
5. Evans, H. R. 1996. An Analysis of Criterion Variable Reliability in Conjoint Analysis, *SAGE Journals*, 82, (3)
6. Gomez-Gonzales, J. Hirs-Garzon, J. Uribe, J. 2020. Giving and Receiving: Exploring the predictive causality between oil prices and exchange rates. *International Finance* 23: 175-194;
7. Haug, A. Abul Basher, S. 2019. Exchange rates of oil exporting countries and global oil price shocks: a nonlinear smooth-transition approach. *Applied Economics* 51, (48): 5282-5296;
8. Hinkle, D. E., Wiersma, W. Jurs, S. G. 2003. *Applied Statistics for the Behavioral Sciences*. Boston, MA: Houghton Mifflin Company
9. <https://exchangerates.org.uk/>
10. Karlsson, H. Mansson, K. Sjolander, P. 2020. Unveiling the Time-dependent Dynamics between Oil Prices and Exchange Rates: A Wavelet-based Panel Analysis. *The Energy Journal* 41, (6): 87-106;
11. Ji, Q. Shahzad, S. Bouri, E. Suleman, M. 2020. Dynamic structural impact of oil shocks on exchange rates: lessons to learn. *Economic structures* 9:20;
12. Obradović, B. Aureo, B. Miljković, M. 2018. VaR analiza u cilju identifikovanja finansijskih rizika. *Oditor* 4, (3): 41-61
13. Onour, I. Abdo, M. 2022. Sensitivity of crude oil price change to major global factors and to Russian-Ukraine war crisis. <http://dx.doi.org/10.2139/ssrn.4187797>);
14. Pavićević, V. 2022. Uticaj ukrajinske krize na vrijednosti valutnih parova EUR/USD, CNY/USD, RUB/USD i bitkoina. *Glasnik za društvene nauke* 14: 205-226;
15. Polbin, A. Skrobotov, A. Zubarev, A. 2020. How the oil price and other factors of real exchange rate dynamics affect real GDP in Russia. *Emerging Markets Finance & Trade* 56: 3732-3745;

16. Salisu, A. Cunado, J. Isah, K. Gupta, R. 2021. Oil Price and Exchange Rate Behaviour of the BRICS. *Emerging Markets Finance and Trade* 57 (7): 2042-2051;

Datum prijema (Date received): 12.11.2023.

Datum prihvatanja (Date accepted): 14.02.2024.

INTERDEPENDENCE OF OIL PRICE VOLATILITY AND RUBLE EXCHANGE RATE DURING THE CRISIS IN UKRAINE

Suzana Balaban¹²Vladimir Pavićević¹³Milica Simić¹⁴

Abstract

The subject of research in this paper is the impact of the crisis in Ukraine on the volatility of the ruble and oil, as well as the correlation of these values with each other. In order to investigate the impact of the crisis in Ukraine as an external shock on the volatility of the ruble and crude oil, changes in the ratio of their values were analyzed on a daily basis, in the observed period during 2022 and the first four months of 2023. The analysis of time series, and then the comparative analysis of the mentioned data and the use of the GARCH model determined a certain divergence in the very nature of the behavior and movement of the ruble and oil immediately before the beginning and during the crisis in Ukraine, during the observed period. There is no doubt that the Russian currency and crude oil markets behaved much more volatile in this period, which implies a significantly greater impact on economic activities, bearing in mind the instability of the value of the ruble and oil as significant factors affecting the overall economic trends in the world.

Keywords: *ruble, crude oil, comparative analysis, GARCH, correlation*

JEL: *C58 G15 M24*

Introduction

The subject of this research is the value of the RUB/EUR currency pair and crude oil as a commodity that significantly affects the value of currencies and other commodities, i.e. the analysis of the impact of the crisis in Ukraine on the volatility of the ruble and crude oil prices. The research was conducted in the context of the analysis of changes in the value of the Russian ruble and oil in the period from January 1, 2022. until 30.04.2023. The central problem under consideration is the volatility of the value of the ruble and oil under the influence of the current crisis in Ukraine, and their correlation in the specified period. Given that the aforementioned political and economic events significantly influenced the value of the observed variables, the primary goal of this research is to obtain an answer to the question of how much and what are the changes in the value of the

¹²Docent, Dr. Suzana Balaban, Alfa BK University, Palmira Toljatića 3, Belgrade, Serbia, e-mail: suzana.balaban@alfa.edu.rs

¹³Doctoral student, Vladimir Pavićević, MSc, Alfa BK University, Faculty of Finance, Banking and Auditing, Palmira Toljatića 3, Belgrade, Serbia, e-mail: vladimirvpavicevic@gmail.com

¹⁴ Docent, Dr. Milica Simić, Alfa BK University, Palmira Toljatića 3, Belgrade, Serbia, e-mail: milica.simic@alfa.edu.rs

ruble and oil and the nature of their mutual relationship in the observed period. Accordingly, the research tasks are:

- determination of changes in the value of the RUB/EUR currency pair and the OIL/EUR ratio under the influence of the crisis in Ukraine over a period of sixteen months;
- comparing the value of the ruble and oil in relation to the euro in the specified period;
- calculation and explanation of the value of the correlation matrix, i.e. the correlation coefficient r between the conditional variances of the variables: RUB/EUR and OIL/EUR, obtained using the GARCH model.

The initial hypothesis that was tested in the research is as follows: during the crisis in Ukraine, in the observed period, the Russian ruble and oil proved to be moderately correlated values. Through the time series of daily data, the values of ruble and oil were compared against the euro, and similarities and differences were observed. Both observed series of data are presented separately, for a more accurate presentation of the results of the analysis.

The research results are presented descriptively, then through several tables and graphs with comparative results. Using the GARCH model, the volatility of the observed variables was assessed and finally their correlation was calculated.

Literature review

Exchange rates of most economically developed countries of the world fluctuate more or less every day, and long-term trends are especially interesting, important when contracting long-term commercial and financial deals (Obradović et al., 2018). Volatility represents the range and speed of price movement and as such gives the possibility of measuring the risk of certain economic parameters. We have more volatile movements in the value of the RUB/EUR currency pair, for a very logical and well-known reason. First of all, the crisis in Ukraine is directly related to Russia's involvement in both political and economic terms. At the beginning of the Ukrainian crisis, there was an increase in energy prices, and thus the inflation rate in almost all countries of the world, and attention should be paid to agile management methods in order to adapt to changing market conditions (Balaban, Đurašković, 2021).

It is obvious that the rise in the prices of energy and food on world markets since the beginning of the Ukrainian crisis strongly influenced the strengthening of the ruble as the currency of one of the countries with the largest participation in the production and export of energy and food in the world. Russia produces about 18% of non-OPEC production and 12% of total world production in 2021 (Onour, Abdo, 2022).

In order to examine the impact of the crisis in Ukraine on the changes in the value of the ruble and oil as studiously as possible, we will perform an analysis of the volatility of these values in the observed period. This is because one of the basic characteristics of floating exchange rates is high volatility, which manifests itself in several ways (Balaban, 2019), and with it we can qualitatively measure changes in the specified values. In the last few decades, especially after the collapse of the Bretton-Woods agreement on fixed exchange rates, the volatility of exchange rates received special attention in macroeconomic analysis, given that under the influence of the globalization of the world economy, it affects numerous macroeconomic factors.

On the other hand, oil prices and exchange rates are linked to the economy. In fact, both of these data series are closely watched by financial market participants and policymakers. There are various theoretical models in the literature that link oil prices and exchange rates. The seminal papers of Krugman and Golub, both written in 1983, provide theoretical models that form the basis of many empirical results (Anjum, 2019). They argue that oil exporting countries experience an increase in wealth in the short term when oil prices rise, leading to an improvement in the current account balance, i.e. an appreciation of the exchange rate of the oil exporting country's currency.

Analysis of changes in the absolute values of RUB/EUR and OIL/EUR

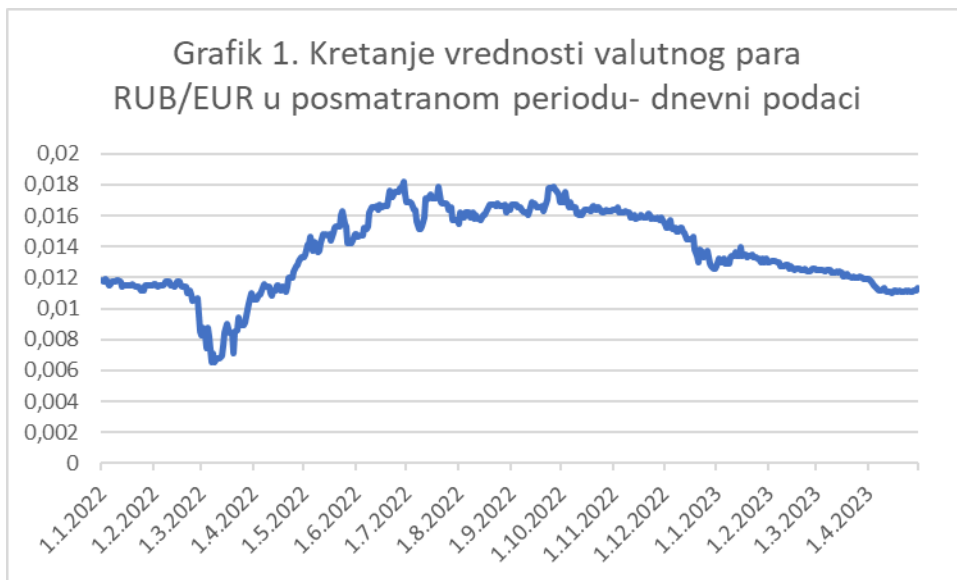
In order to compare the value of the Russian ruble with oil as a consumer good on the global market, time series data for the Russian ruble and the value of a barrel of oil in relation to the euro were analyzed during the observed period.

Analyzing graph 1, several key points of the daily sections can be observed. It is precisely these key points that distinguish the movement of the value of the Russian ruble against the euro in relation to any other national currency whose value movement would be observed in the analyzed period. The minimum value of the RUB/EUR currency pair in the observed period was on March 7, i.e. March 9, 2022, and was 0.0065 euros for one ruble. As we can see, immediately after the beginning of the crisis in Ukraine, the value of this currency pair weakened from 0.0109 euros for one ruble at the close of February 23, 2022 to 0.0065 euros for one ruble at the close of the market on March 07, 2022. , which is a 40.37% fall of the ruble in the first twelve days since the beginning of the war in Ukraine.

However, the authorities of the Russian Federation make a decision to peg the value of the ruble to the value of an ounce of gold, and at the end of March, a decision to sell energy products: gas and oil exclusively in rubles, defined according to a predetermined payment scheme (Pavićević, 2022). Such economic and political decisions of the Russian authorities have led to an almost constant growth of the ruble against the euro since those events. So already on March 31, 2022, when it was already known that Russia would sell energy products only for

its own currency, the ratio of the RUB/EUR currency pair was close to that at the beginning of the Ukrainian crisis and amounted to 0.011 euros for 1 ruble. The trend continued during the months of April, May and June, so we have the maximum value of the currency pair RUB/EUR on June 29, when the value is 0.0182 euros for one ruble, which is an increase of 180.00% compared to the minimum value of March 7 and March 9, 2022, just fifteen days after the beginning of the crisis in Ukraine.

Graph 1. Movement of the value of the ruble in the period from 01.01.2022. until 30.04.2023.



Source: author's calculation based on data available at <https://exchangerates.org.uk/>

Like the analysis of the change in the value of the Russian national currency in the given period, for the purposes of this analysis, the euro was taken as the reference value, in order for the comparative analysis to reflect the relationship of the selected variables as qualitatively as possible. Although the price of oil on the stock exchanges is expressed in dollars, here the ratio OIL/EUR is taken as the appropriate parity.

Based on the analysis of Graph 2, increased market volatility can be observed in the oil market, than is usually the case in the volatility of national currencies. If we look at the minimum and maximum value of oil on a daily level at the closing of the market, expressed in euros in the observed period, we will see the percentage changes in the value of oil. One of the minimum values of oil in the observed period was EUR 66.42371, on January 1, 2022, and the maximum value in the same observed period was EUR 116.70415, on March 6, 2022, ten days after the start of the war. crisis in Ukraine. Therefore, the maximum value of oil was higher than its minimum value by 75.70%.

Graph 2. Movement of the value of a barrel of oil in the period from 01.01.2022. until 30.04.2023.



Source: author's calculation based on data available at <https://exchangerates.org.uk/>

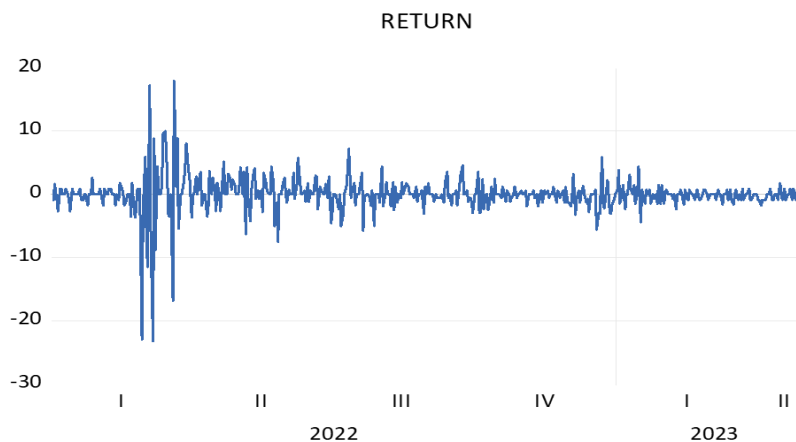
It should be borne in mind that after the peak on the graph, the value of oil, with minor oscillations, mostly decreased, which means that the sudden increase in the price within about two months was predominantly of a speculative nature. This is supported by the fact that on March 18, 2023, while the crisis in Ukraine is still ongoing, the value of oil amounted to EUR 61.71406, which is less than the value at the beginning of 2022. The volatility of oil as a measure of risk, with this ratio, shows a higher risk than investing in oil.

Volatility of the currency pair RUB/EUR during the crisis in Ukraine

The analysis of the volatility of the currency pair RUB/EUR before and during the current crisis in Ukraine included the analysis of 485 data, more precisely the logarithmic daily rates of return of the currency pair RUB/EUR over a period of sixteen months. In the first step, the authors analyzed the volatility grouping of the mentioned time series.

Chart 3 clearly shows that there is a clustering of the volatility of the yield rates of the currency pair RUB/EUR. As the extreme values of the time series of the currency pair RUB/EUR are noticeable in the 1st quarter of 2022, the clustering of the volatility of the time series of logarithmic daily rates of return of the currency pair RUB/EUR shows an identical case, which is the result of the beginning of the war crisis in Ukraine.

Chart 3. Grouping of volatility - currency pair RUB/EUR



Source: author's calculation based on data from EViews program

In the second step, with the help of the Bai-Perron test, the authors evaluate whether a known exogenous event, the beginning of the crisis in Ukraine, had an effect on the appearance of a structural break in the observed time series of data. Based on the test results, we conclude that there is no structural break in the observed time series (*Table 1*)

Table 1. Bai-Perron test result - currency pair RUB/EUR

Bay-Perron test of L+1 vs. L sequentially determined breaks			
484 samples included			
Sequential F-statistic determined breaks: 0			
Break test	F-statistic	Scaled F-statistic	Critical Value
0 vs. 1	1.677169	1.677169	8.58
Significant at the 0.05 level.			

Source: author's calculation based on data from EViews program

Using ADF and KPSS unit root tests, the stationarity of the observed time series was assessed. The ADF test assumes H_0 that the observed series has one unit root, in which case it is not stationary. Given that the probability value is $p < 0.05$ in both cases, the observed series does not have a unit root (*Table 2*) i.e. it is stationary, which is of fundamental importance for the continuation of the research.

Table 2. Results of ADF test - currency pair RUB/EUR

Exogenous: Constant		
	t-statistic	Prob.*
Augmented Dickey-Fuller test statistic	-24.96920	0.0000
Exogenous: Constant, Linear Trend		
Augmented Dickey-Fuller test statistic	-24.98543	0.0000

Source: author's calculation based on data from EViews program

In order to verify the obtained results, the KPSS test was applied, which starts from the hypothesis H_0 that the observed time series is stationary. The stationarity of the observed time series is also confirmed by the results of the KPSS test, given that $p > 0.05$ in both cases (*Table 3*)

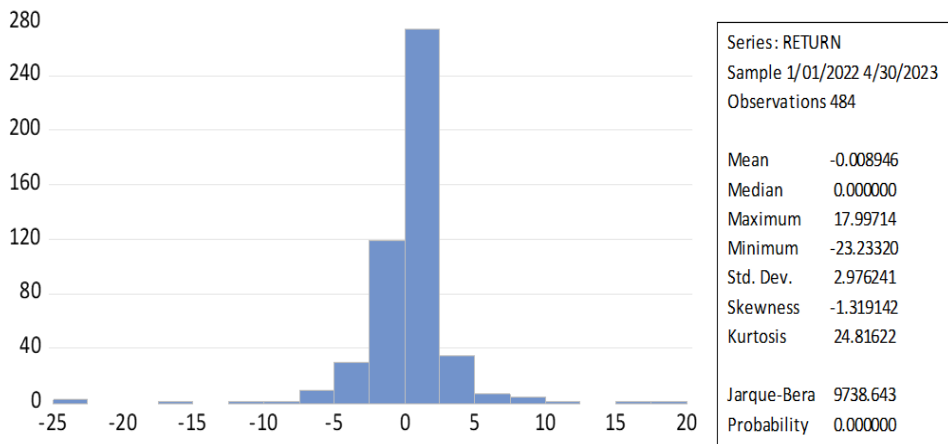
Table 3. Result of KPSS test - currency pair RUB/EUR

Exogenous: Constant	
	LM-Stat.
Kwiatkowski-Philips-Schmidt-Shin test statistic	0.166746
Exogenous: Constant, Linear Trend	
Kwiatkowski-Philips-Schmidt-Shin test statistic	0.068106

Source: author's calculation based on data from EViews program

For a more detailed analysis of the observed time series, descriptive statistics were used (Graph 4). Based on the obtained results of the Jarque-Bera test, it can be concluded that the observed time series does not have a normal distribution, which is visible on the Quantile-Quantile (QQ) histogram (Graph 5). The coefficient of asymmetry is less than 0, which means that the observed time series has a negative asymmetry, while the coefficient of flattening above 3 shows that the observed data series is elongated. The value of the asymmetry coefficient is negative: -3.817822, which shows that it is a pronounced negative asymmetry. The flattening coefficient with the amount of 47.59308 absolutely corresponds to the elongation shown on the histogram (Graph 4) and which is significantly higher than that which is characteristic of a normal distribution.

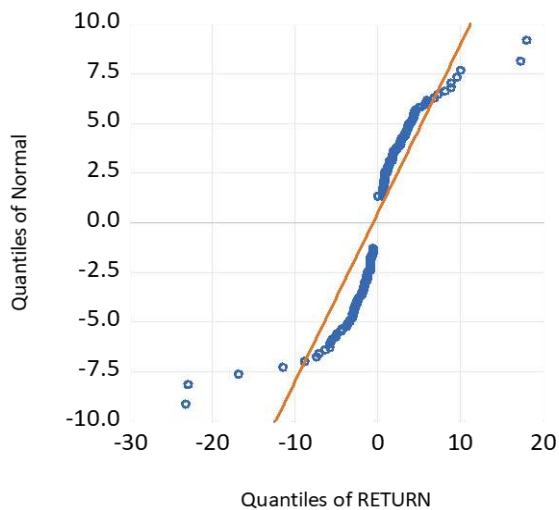
Graph 4. Descriptive statistics - currency pair RUB/EUR



Source: author's calculation based on data from EViews program

As already stated, the finding that the observed data series does not have a normal distribution is confirmed by the following graph:

Graph 5. QQ histogram - currency pair RUB/EUR



Source: author's calculation based on data from EViews program

In further work, the authors investigate autocorrelation in the data of the observed time series. When it comes to autocorrelation and in this analyzed case, we will start from the hypothesis H_0 that there is no autocorrelation in the observed time series of data.

Table 4. Results of the autocorrelation detection test - currency pair RUB/EUR

Q	AC	PAC	Q-Stat	Prob
(1)	0.003	0.003	0.0032	
(10)	-0.052	-0.092	31,828	0.0000
(20)	0.046	-0.007	59,701	0.0000
(30)	-0.027	-0.004	69,038	0.0000

Source: author's calculation based on data from EViews program

Looking at the obtained results on autocorrelation, partial correlation, and Q-statistics and probability, and following the probability on Q (10), Q (20) and Q (30), it can be very simply noticed that in all cases $p < 0.05$ which means that the starting hypothesis is not confirmed and that autocorrelation exists. Accordingly, an adequate ARMA specification was determined based on the lowest value Schwarz criterion (SIC) - MA (1) in order to eliminate autocorrelation and perform the heteroskedasticity test.

Heteroskedasticity shows the fact that the variance of a random error is different for different values of a certain independent variable, that is, it does not follow a constant value. In this sense, the authors examine whether there is an ARCH effect, in order to see whether heteroskedasticity occurs, which is very important from the aspect of continuing the research.

Table 5. Results of the ARCH test - currency pair RUB/EUR

Heteroskedasticity Test: ARCH			
F-statistic	19.46771	Prob. F (1,481)	0.0000
Obs*R-Squared	18.78823	Prob. Chi-Square (1)	0.0000

Source: author's calculation based on data from EViews program

Based on the results (*Table 5*), it can be seen that there is an ARCH effect, that is, that $p < 0.05$. Using the lowest SICa, the appropriate GARCH model was selected, which in this case is FIGARCH (1,1).

In order to determine whether there is significant autocorrelation in the residuals, the values of Q (1), Q (10), Q (20) and Q (30) are shown on the correlogram of the residuals. In the event that these values in several cases amount to $p > 0.05$, then we could conclude that the observed model is good and that there is no significant autocorrelation in the residuals. After determining whether there is autocorrelation in the residuals, it was examined whether the ARCH effect is present in the residuals of the observed data series.

Table 6. Correlogram of standardized residuals - rate of return RUB/EUR

Q	AC	PAC	Q-Stat	Prob*
(1)	-0.008	-0.008	0.0346	0.853
(10)	-0.006	-0.005	5.9895	0.816
(20)	0.029	0.030	6.8213	0.997
(30)	-0.012	-0.010	7.2056	1,000

Source: author's calculation based on data from EViews program

Based on the observed probability values in the sample, we can conclude that the model is good and that there is no significant autocorrelation in the residuals of the observed data series (*Table 6*)

Based on the following table (*Table 7*), it can be concluded based on the obtained probability that there is no ARCH effect in the residuals of the observed time series of data, that is, that the corresponding model is adequately specified.

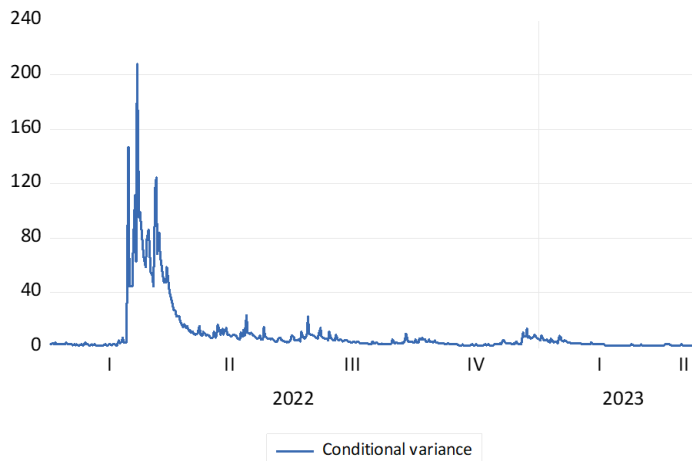
Table 7. Testing the ARCH effect in the residuals – currency pair RUB/EUR

Heteroskedasticity Test: ARCH			
F-statistic	0.034141	Prob. F (1,481)	0.8535
Obs*R-Squared	0.034281	Prob. Chi-Square (1)	0.8531

Source: author's calculation based on data from EViews program

Graph 6 shows the conditional variance derived from the FIGARCH (1,1) model, which shows the volatility of the time series of logarithmic daily rates of return of the currency pair RUB/EUR, which is a condition for calculating the correlation between the volatility of the Russian ruble and the volatility of oil prices, which is the subject research work.

Graph 6. Conditional variance derived from the FIGARCH (1,1) model - pair RUB/EUR



Source: author's calculation based on data from EViews program

Oil price volatility during the crisis in Ukraine

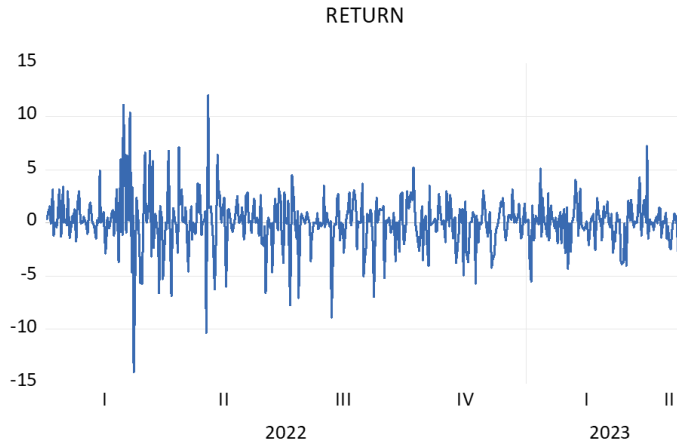
Analysis of the change in the value of crude oil expressed in euros OIL/EUR, before and during the current crisis in Ukraine, implies a logarithmic daily rate of return. Accordingly, a sample of 485 data was analyzed. As one of the characteristics, the grouping of volatility of the time series of logarithmic daily rates of oil value expressed in euros was analyzed, which is not usual, so that this relationship could be adequately compared with the currency pair RUB/EUR.

As can be seen in graphic 7, with small changes in the value of the yield rates, small changes in the value of the observed OIL/EUR series are observed, while with larger changes in the value of the yield rates of the given time series, we have large changes in the observed series of OIL/EUR values. Also, the extreme values of the OIL/EUR time series are observed in the 1st and 2nd quarter of 2022, which was also shown by the grouping of the volatility of the time series of the logarithmic daily yield rates of the crude oil value, which is a consequence of the war crisis in Ukraine.

With the help of the structural break test, using the Bai-Perron procedure, it was examined whether the observed exogenous event, i.e. the beginning of the war crisis in Ukraine, had an effect on the occurrence of structural break in the observed time series of data. Based on the test results (*Table 8*), it was concluded that there are no defined structural breaks in the observed time series of data, caused by an exogenous event, that is, in this case, the beginning of the crisis in Ukraine.

Here is a graphical representation of the volatility grouping for OIL/EUR:

Graph 7. Grouping of volatility - OIL/EUR



Source: author's calculation based on data from EViews program

As previously stated, a structural fracture test follows, using the Bai-Perron procedure:

Table 8. Bai-Perron test result - OIL/EUR

Bay-Perron test of L+1 vs. L sequentially determined breaks			
484 data included			
Sequential F-statistic determined breaks: 0			
Break test	F-statistic	Scaled F-statistic	Critical Value
0 vs. 1	1.677169	1.677169	8.58
Significant at the 0.05 level.			

Source: author's calculation based on data from EViews program

As in the previous case, by applying ADF and KPSS unit root tests, the authors check whether the observed time series of data is stationary.

Based on the obtained results of the ADF test (*Table 9*), we can conclude that the observed series of logarithmic daily return rates of the OIL/EUR value is stationary.

Table 9. Results of the ADF test - OIL/EUR

Exogenous: Constant		
	t-statistic	Prob.*
Augmented Dickey-Fuller test statistic	-22.29421	0.0000
Exogenous: Constant, Linear Trend		
Augmented Dickey-Fuller test statistic	-22.35367	0.0000

Source: author's calculation based on data from EViews program

Based on the obtained results of the KPSS test, it can be concluded, as with the previous application of the ADF test, that the observed time series of data is stationary (*Table 10*)

Table 10. Results of KPSS test - OIL/EUR

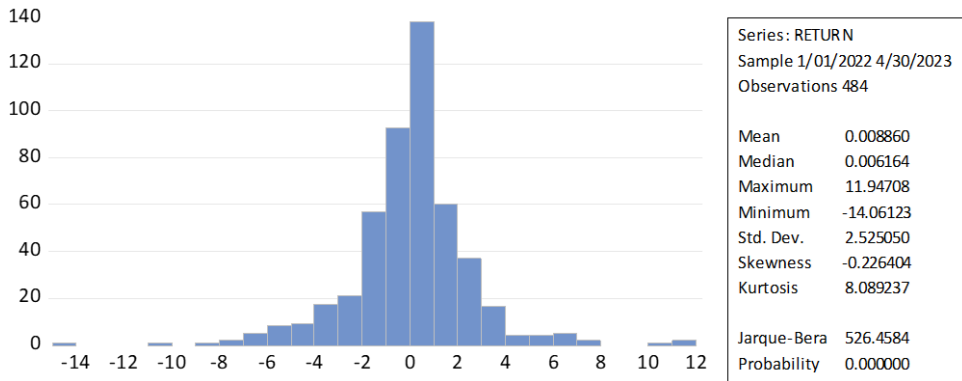
Exogenous: Constant	
	LM-Stat.
Kwiatkowski-Philips-Schmidt-Shin test statistic	0.242345
Exogenous: Constant, Linear Trend	
Kwiatkowski-Philips-Schmidt-Shin test statistic	0.065226

Source: author's calculation based on data from EViews program

In order to better describe the data of the observed time series, descriptive statistics are presented. The Jarque-Bera statistic tests the normality of the distribution.

Based on the obtained results (Graph 8), it can be seen that the value is $p < 0.05$, which implies that the observed OIL/EUR data series does not have a normal distribution and significantly deviates from the mean value, which is also confirmed by the QQ histogram (Graph 9). The coefficient of asymmetry is -0.226404, and the observed time series of data is characterized by negative asymmetry, while according to the same table, the coefficient of flattening is 8.089237. Its large amount means that the observed data series is elongated, because the flattening coefficient is significantly higher than 3.

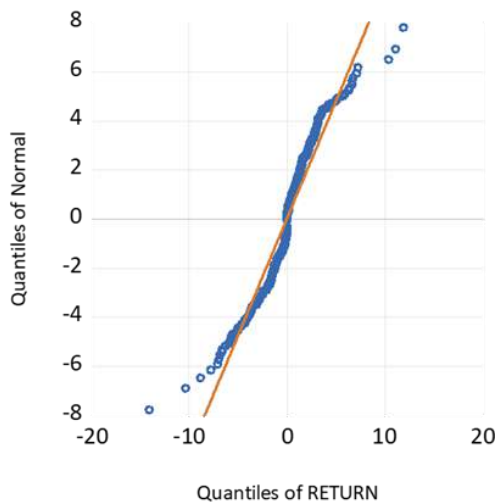
Graph 8. Descriptive statistics - OIL/EUR



Source: author's calculation based on data from EViews program

Next is the QQ histogram, which confirms that there is no normal distribution.

Graph 9. QQ histogram – OIL/EUR



Source: author's calculation based on data from EViews program

When it comes to autocorrelation, in this case too, the hypothesis H_0 is used there is no correlation in the observed time series of residuals. Based on the obtained data on autocorrelation, partial correlation, Q statistics and probability, and following the probability on the Q(1), Q(10), Q(20) and Q(30) sample, it can be very simply observed that in all observed cases $p > 0.05$, which means that the starting hypothesis is confirmed and that there is no autocorrelation in the observed time series of data (Table 11) Using the LM serial correlation test, the same result was obtained (Table 12) It can be argued that there is no autocorrelation in the observed time series of data given that the probability is $p > 0.05$.

Table 11. Results of the autocorrelation detection test - OIL/EUR

Q	AC	PAC	Q-Stat	Prob
(1)	-0.0016	-0.0016	0.1321	0.716
(10)	-0.021	-0.014	9.7774	0.460
(20)	0.034	-0.033	25,576	0.180
(30)	-0.002	-0.033	40,034	0.104

Source: author's calculation based on data from EViews program

Table 12. Results of the LM test for detecting autocorrelation - OIL/EUR

Breusch-Godfrey Serial Correlation LM Test			
H0: No serial correlation at up to 2 lags			
F-Statistic	0.225217	Prob. F (2,481)	0.7984
Obs*R-Squared	0.452819	Prob. Chi-Square (2)	0.7974

Source: author's calculation based on data from EViews program

The next step performed is heteroskedasticity testing. Based on the obtained results (*Table 13*), we can see that there is an ARCH effect, since $p < 0.05$.

Table 13. Results of the ARCH test – OIL/EUR

Heteroskedasticity Test: ARCH			
F-statistic	5.499866	Prob. F (1,481)	0.0194
Obs*R-Squared	5.460300	Prob. Chi-Square (1)	0.0195

Source: author's calculation based on data from EViews program

Based on the calculated value of the lowest SIC criterion, the GARCH (1,1) model was chosen. In order to determine the adequacy of the selected model, the existence of autocorrelation and heteroskedasticity in the residuals of the evaluated model was tested. Based on the observed values, we conclude that there is no autocorrelation in the residuals (*Table 14*)

Table 14. Correlogram of standardized residuals of the observed data series

Q	AC	PAC	Q-Stat	Prob*
(1)	0.046	0.046	1.0263	0.311
(10)	-0.052	-0.054	23,546	0.009
(20)	-0.003	-0.004	33,169	0.032
(30)	0.033	0.017	37,563	0.161

Source: author's calculation based on data from EViews program

After that, the existence of the ARCH effect in the residuals was tested:

Table 15. Testing the existence of the ARCH effect in the residuals

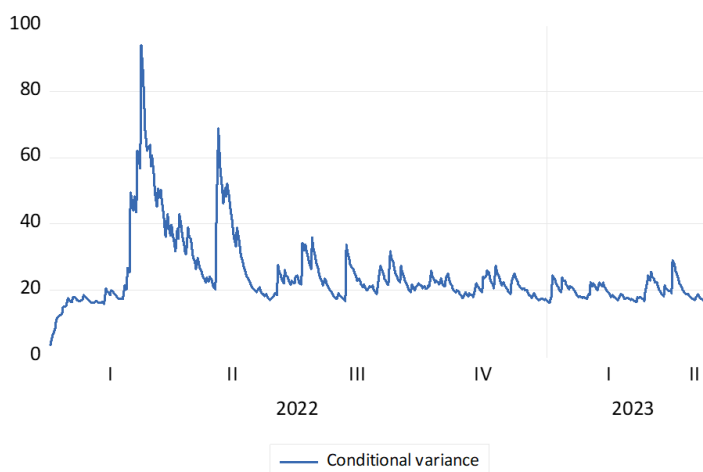
Heteroskedasticity Test: ARCH			
F-statistic	1.016474	Prob. F (1,481)	0.3139
Obs*R-Squared	1.018548	Prob. Chi-Square (1)	0.3129

Source: author's calculation based on data from EViews program

According to the values shown in table 15, there is no ARCH effect in the residuals of the observed time series of data, because $p > 0.05$.

Graph 10 shows the conditional variance derived from the GARCH (1,1) model:

Graph 10. Conditional variance derived from the GARCH (1,1) model – OIL/EUR



Source: author's calculation based on data from EViews program

Correlation of ruble volatility and oil prices on the world market

Based on the correlation of the conditional variances of the ruble and oil derived from the GARCH model, we can draw an appropriate conclusion about the changes in the volatility of the exchange rate of the ruble under the influence of the volatility of crude oil during the crisis in Ukraine. In order to analyze that influence, we first calculated the correlation level of the obtained conditional variance values:

Table 16. Correlation of the conditional variances of the ruble and oil in the observed period

	RUB/EUR	OIL/EUR
RUB/EUR	1	
OIL/EUR	0.580305	1

Source: author's calculation based on data from EViews program

As can be seen from table 16, there is a positive correlation between the volatility of the exchange rate of the ruble and the volatility of oil. Based on the value of the correlation coefficient, we can conclude that there is a moderate connection (Evans, 1996; Hinkle et al., 2003) of the conditional variances of RUB/EUR and OIL/EUR, which is proof that the volatility of the ruble is related to the volatility of oil by a positive correlation of moderate strength. in the observed sixteen-month period, during which the crisis in Ukraine began and lasted, ending on April 30, 2023.

Conclusion

Based on the observed time series of data, their econometric analysis using the GARCH model and the calculation of the correlation of conditional variances derived from the corresponding GARCH models, it is clear that there is a positive and moderate, almost strong correlation between the changes in oil volatility and the volatility of the ruble exchange rate. Therefore, this research paper confirmed what we assumed, that the value of the Russian ruble has a positive and moderate, to strong, connection with the value of oil, of which Russia is one of the world's leading exporters.

It seems that precisely at the time of the influence of such an exogenous shock, such as the war crisis in Ukraine, the fact that the Russian economy, or in this case the ruble currency as a representative of the Russian economy, is in a significant relationship of interdependence with oil as a natural resource of Russia is exposed to the core. which is exploited and exported in large quantities.

Literature

1. Anjum, H. 2019. Estimating volatility transmission between oil prices and the US Dollar exchange rate under structural breaks. *Journal of Economics and Finance* 43: 750;
2. Bagchi, B., Biswajit, P. 2023. Effects of Crude Oil Price Shocks on Stock Markets and Currency Exchange Rates in the Context of Russia-Ukraine Conflict: Evidence from G7 Countries. *Journal of Risk and Financial Management* 16: 64;
3. Balaban, S. 2019. Impact of an unexplained component of real exchange rate volatility on FDI: Evidence from transition countries, *Economic systems*, 43(3-4): 100719. <https://doi.org/10.1016/j.ecosys.2019.100719>
4. Balaban, S., Đurašković, J. 2021. Agile project management as an answer to changing environment, *European Project Management Journal*, 11(1): 12-19. <https://doi.org/10.18485/epmj.2021.11.1.2>
5. Evans, HR 1996. An Analysis of Criterion Variable Reliability in Conjoint Analysis, *SAGE Journals*, 82, (3)
6. Gomez-Gonzales, J. Hirs-Garzon, J. Uribe, J. 2020. Giving and Receiving: Exploring the predictive causality between oil prices and exchange rates. *International Finance* 23: 175-194;
7. Haug, A. Abul Basher, S. 2019. Exchange rates of oil exporting countries and global oil price shocks: a nonlinear smooth-transition approach. *Applied Economics* 51, (48): 5282-5296;
8. Hinkle, DE, Wiersma, W. Jurs, SG 2003. *Applied Statistics for the Behavioral Sciences*. Boston, MA: Houghton Mifflin Company
9. <https://exchangerates.org.uk/>
10. Karlsson, H. Mansson, K. Sjolander, P. 2020. Unveiling the Time-dependent Dynamics between Oil Prices and Exchange Rates: A Wavelet-based Panel Analysis. *The Energy Journal* 41, (6): 87-106;
11. Ji, Q. Shahzad, S. Bouri, E. Suleman, M. 2020. Dynamic structural impact of oil shocks on exchange rates: lessons to learn. *Economic structures* 9:20;
12. Obradović, B. Aureo, B. Miljković, M. 2018. VaR analysis in order to identify financial risks. *Auditor* 4, (3): 41-61
13. Onour, I. Abdo, M. 2022. Sensitivity of crude oil price change to major global factors and to Russian-Ukraine war crisis.
14. Pavićević, V. 2022. The impact of the Ukrainian crisis on the value of currency pairs EUR/USD, CNY/USD, RUB/USD and Bitcoin. *Journal of Social Sciences* 14: 205-226;
15. Polbin, A. Skrobotov, A. Zubarev, A. 2020. How the oil price and other factors of real exchange rate dynamics affect real GDP in Russia. *Emerging Markets Finance & Trade* 56: 3732-3745;

16. Salisu, A. Cunado, J. Isah, K. Gupta, R. 2021. Oil Price and Exchange Rate Behavior of the BRICS. *Emerging Markets Finance and Trade* 57 (7): 2042-2051;

INOVACIONI MAKROMENADŽMENT U EKONOMIJI ZNANJA

Srdan Milićević¹⁵, Vladimir Kostić¹⁶ Maja Stošković¹⁷

doi: 10.59864/Oditor12403M

Originalni naučni rad

UDK: 005.94

001.895

658:[007:004

“Duša ekonomije znanja je neprekidna težnja za inovacijama”.

Li Tein, Akademija društvenih nauka Kine

Apstrakt

U radu se nakon eksplikacije ključnih postulata paradigme ekonomije znanja sagledava značaj objedinjavanja nacionalnih politika naučnog, tehnološkog i industrijskog razvoja u liku inovacionog makromenadžmenta. Učinjen je osvrt na instrumente ponude, tražnje i zaštite pomoću kojih preduzetnička država deluje na unapređenje nacionalne inovativnosti. Autori zastupaju mišljenje da noseći gradivni element inovacionog makromenadžmenta predstavlja koncept nacionalnog inovacionog sistema (NIS), pri čemu platforma objedinjavanja aktivnosti akademske zajednice, privrede, države i društva predstavljaju tzv. spiralni modeli inovacija. Bazu ovih modela čini učenje, komuniciranje i saradnja, kao fundamentalni društveni procesi, s jedne, i rastuća umreženost aktivnosti svih učesnika u stvaranju novih znanja i posebno u komercijalnoj valorizacije znanja u inovacije, s druge strane.

Ključne reči: ekonomija znanja, inovacioni makromenadžment, NIS, spiralni modeli kreiranja znanja i inovacija.

JEL: A13; E14; O30; D02;

Uvod

Teorijsko utemeljenje koncepta makroekonomskog menadžmenta moguće je naći u stavu Pitera Drakera po kome menadžment označava praksu, veštinu, umetnost i nauku upravljanja procesima na različitim nivoima organizovnosti privrede i

¹⁵ Docent dr Srdan Milićević, Univerzitet Metropolitan u Beogradu, Fakultet za menadžment, Tadeuša Koščuška 63, 11185 Beograd, Republika Srbija, Telefon: +381 64 11 62 902, E-mail: srdjan.milicevic@metropolitan.ac.rs

¹⁶ Viši predavač dr Vladimir Kostić, Akademija tehničko vaspitačkih studija Odsek Vranje, Filipa Filipovića br. 20, 17000 Vranje, Republika Srbija, Telefon: +381 17/21-889, E-mail: vladimir.kostic@akademijanis.rs

¹⁷ Dr Maja Stošković, Privredna komora Srbije, Resavska 13 - 15, 11000 Beograd, Republika Srbija, Telefon: +381 11 41 49 624, E-mail: maja.stoskovic@edu.rs

društva (Drucker, 1964). Kao sistem upravljanja proizvodnim entitetima, menadžment se javlja u devetnaestom, dok je svoju punu afirmaciju stekao u dvadesetom veku.

Razvoj menadžmenta tokom poslednjih tridesetak godina prati magistralne promene u privredi i društvu koje se najčešće obuhvaćene izrazom paradigma ekonomije znanja. Ključna karakteristika ekonomije znanja je naglašeno oslanjanje privrednih aktivnosti na kreativne sposobnosti ljudi uz istovremenu sve manju njihovu baziranost na korišćenje fizičkog kapitala i prirodnih resursa (Florida, 2002). U novonastalim uslovima privređivanja, kreatori nacionalnih strategija ekonomskog razvoja posvećuju sve veću pažnju kreiranju i difuziji novih znanja i što je moguće uspešnijoj komercijalnoj valorizaciji znanja u inovacije.

U načelu, moguće je praviti razliku između menadžmenta na mikro i menadžmenta na makro nivou. Sadržajna obuhvatnost kategorije mikromenadžmenta se rasprostire na brojne i sve složenije dimenzije upravljanja funkcionisanjem ekonomskih subjekata, dok se sadržaj makromenadžmenta u određenom smislu može poistovetiti sa mnogobrojnim aktivnostima planiranja i upravljanja privrednim tokovima u nacionalnoj ekonomiji. „Pod makroekonomskim menadžmentom treba razumeti skup mera i aktivnosti koje preduzimaju kreatori politike ekonomskog i šire, politike društvenog razvoja, sami ili u sadejstvu sa nekim od mnogobrojnih ekonomskih entiteta u koncipiranju i realizaciji definisanih ciljeva društveno-ekonomskog razvoja“ (Cvetanović & Novaković, 2018: 131). Pritom, ne sme se ni jednog momenta gubiti iz vida činjenica da se ekonomski život odvija u mikroekonomskim entitetima i da je fundamentalna premisa efikasnosti politike upravljanja razvojem nacionalnih privreda uspešnost funkcionisanja njenih preduzeća.

Značaj znanja za ekonomske procese se korenito uvećao tokom poslednjih godina. Njegova komercijalna valorizacija u inovacije promovisana je u esencijalni pokretač rasta produktivnosti rada i unapređenja konkurentnosti na svim nivoima (Atkison & Ezzel, 2014; Nijkamp & Siedschlag, 2011). To je za rezultat imalo afirmaciju intelektualnog kapitala u svojstvu pokretača produktivnosti rada i unapređenja konkurentnosti. Na makroekonomskoj ravni je došlo do afirmacije novih teorijskih koncepata poput nove teorije ekonomskog rasta (Romer, 1986; Lucas, 1988), evoluciono-inovacionog pristupa u istraživanju ekonomskih pojava (Nelson & Winter, 1982), nove koncepcije nacionalnog bogatstva (Shults, 1981), novog javnog menadžmenta (Osborne & Gaebler, 2000). Teorijski postament ovih pristupa je decidan stav njihovih tvoraca da proizvodnja i komercijalna valorizacija znanja predstavlja magistralnu pokretačku snagu razvoja tržišnih privreda (Wickham, 2001).

Zajednička nit svih ovih teorijskih pristupa je osporavanje ključnih polazišta neoklasične ekonomske teorije po pitanju postojanja tržišne ravnoteže,

neminovnosti ispoljavanja zakona opadajućih prinosa faktora proizvodnje, egzogene prirode inovacija (Fagerberg, 2001). Na određen način i sam koncept inovacionog menadžmenta implicite podrazumeva negaciju navedenih teorijskih polazišta neoklasičnih teoretičara. Konkretno, noviji pristupi ističu daleko širu opravdanost državnih intervencija u privredi a ne samo u slučaju neutralisanja tržišnih nedostataka kako su smatrali neoklasični ekonomisti, mogućnosti ispoljavanja neopadajućih prinosa faktora proizvodnje zahvaljujući korišćenju znanja kao praktično neograničenom proizvodnom resursu, endogenoj prirodi inovacija koja implicite i eksplicite opravdava aktivnu ulogu države u planiranju, upravljanju i kontroli inovacionih aktivnosti ekonomskih aktera (Macukato, 2014; Mazzucato & Semieniuk, 2017). Novije teorije ekonomskog razvoja pretpostavljaju da inovacije predstavljaju unutrašnji ishod javnih i privatnih investicija u ljudski kapital, ulaganja u istraživačko-razvojne oblasti proizvodnje, kao i dizajna najšierog društvenog ambijenta u kome ekonomski subjekti funkcionišu (Nelson & Winter, 1982).

Među najvažnijim pokretačima ekonomskog razvoja u savremenim uslovima u literaturi se ističu sistem obrazovanja i sticanja znanja, osnovna i primenjena istraživanja, kompetentnost NIS-a (Friman, 1987; Lundvall, 1992; Nelson, 1993). Ipak, po gotovo nepodeljenom mišljenju analitičara, odlučujuća uloga u oblikovanju uslova koji pogoduju dugoročno održivom rastu i razvoju pojedinih zemalja i njihovih regiona pripada uspešnosti kreiranja i komercijalizacije znanja u inovacije (Švarc, 2009; Leković, 2018). Važnu platformu u procesima kreiranja i komercijalne valoruzacije znanja u inovacije predstavlja NIS-a baziran na spiralnim (engl. *helix*) modelima povezivanja akademske zajednice, proizvodnje, države i društvene zajednice (Ješić, 2015).

Cilj rada i korišćena metodologija

Imajući u vidu prethodno prezentovane konstatacije, ciljevi rada su sledeći: a) objašnjenje ključnih karakteristika ekonomije znanja, b) apostrofiranje integrativnog karaktera inovacionog makromenadžmenta u smislu objedinjavanja sadržaja politika naučnog, tehnološkog i industrijskog razvoja na nivou pojedinih nacionalnih ekonomija, c) ukazivanje na značaj koncepta NIS-a u inovacionom makromenadžmentu i d) analiza mesta spiralnih modela kreiranja znanja i njegove komercijalizacije u inovacije u ekonomiji znanja.

Postavljene su sledeće istraživačke hipoteze:

H1: Inovacioni makromenadžment u uslovima privređivanja koji omeđuju izazovi i dometi ekonomije znanja predstavlja nezaobilazan instrument u realizaciji savremenih strategija ekonomskog razvoja.

H2: Noseći gradivni element inovacionog makromenadžmenta u ekonomiji znanja predstavlja koncept NIS-a.

H3: Platformu međusobne koordinacije aktivnosti aktera NIS-a predstavljaju spiralni modeli kreiranja znanja i njegove komercijalne valorizacije u inovacije.

U radu je pomoću metoda analize i kompilacije prezentovana objedinjavaća dimenzija inovacionog makromenadžmena u smislu povezivanja politika naučnog, tehnološkog i industrijskog razvoja zemalja u ekonomiji znanja. Pomoću deskriptivnog metoda bliže je objašnjena ideja koncepta NIS-a koji je od esencijalne važnosti za razumevanje ne samo suštine inovacionog makromenadžmenta, već i neodrživosti stavova neoklasičnih ekonomskih teoretičara po pitanju egzogene prirode kategorije tehnoloških promena. U cilju izbegavanja detaljnijih deskriptivnih opisa suštine i pojedinih elemenata konstrukcionog dizajna spiralnih modela kreiranja i komercijalizacije znanja u inovacije korišćena je grafička eksplikacija povezanosti njihovih ključnih aktera.

Rezultati rada sa diskusijom

Paradigma ekonomije znanja

Znanje predstavlja „skup činjenica, informacija i veština stečenih obrazovanjem ili iskustvom, sa ciljem teorijskog ili praktičnog razumevanja i rešavanja problema. Ono postaje vredna imovina neophodna u svim sferama odlučivanja. Doprinosi razvoju pojedinca, organizacije i društva” (Drašković, 2010: 84). Paradigma “ekonomije znanja” u ovom veku inspirativna je istraživačka tema u mnogim društvenim naukama. „Ekonomija znanja se formira i širi na bazi korišćenja znanja kao unikalnog, neograničenog i samostalnog faktora proizvodnje, kojeg je nemoguće supstituisati drugim resursima. U njoj se znanje pretvara u ekonomska dobra i dohodak u većini privrednih djelatnosti, a ne samo u onima koje su direktno povezane s najvišim tehnologijama. Organizacije se sve više pretvaraju u inovacione, pri čemu kao predmet inovacije postaju ne samo proizvodi i tehnologije, nego i načini organizacije i uzajamnog djelovanja s kupcima“ (Drašković, 2010: 84). Iako sam koncept još uvek ne predstavlja u potpunosti sadržajno zaokruženu celinu, veliki broj ekonomskih analitičara smatra da je razumevanje njegove suštine i dometa polazište sagledavanja nosećih društvenih i ekonomskih promena u svetu tokom poslednjih dvadesetak godina. (Beraha & Đuričin, 2022).

Počev od 1990. godina, razvoj novih, a pre svega informacionih i telekomunikacionih tehnologija je delovao u pravcu suštinske transformacije strukture svetske privrede. Sredine koje su zakoračile dublje u razvoj privrede temeljene na znanju su iskazale neuporedivo boje makroekonomske performanse u odnosu na zemlje koje su kasnile u složenim procesima diigitalizacije privrede i društva (Huggins & Izushi, 2007).

Afirmacija paradigme ekonomije znanja dovela je do izmenjenog pristupa u ekonomskim istraživanjima do tog vremena dominantno temeljenih na analitičkom instrumentarijumu industrijske ekonomije. Obuhvatnost i karkter ovih

promena prezentovana je u tabeli 1.

Tabela 1: Osnovne premise ekonomske teorije industrijskog društva i ekonomije znanja

Industrijsko društvo	Ekonomija znanja
<i>Teorijski postulati</i>	
<ul style="list-style-type: none"> ▪ egzogena priroda inovacija ▪ opadajući prinosi ▪ tržišna ravnoteža 	<ul style="list-style-type: none"> ▪ endogena priroda inovacija ▪ neopadajući (konstantni ili rastući) prinosi ▪ tržišne neefikasnosti (pozitivne i negativne eksternalije, preliivanja tehnologije i znanja)
<i>Faktori proizvodnje</i>	
<ul style="list-style-type: none"> ▪ fizički kapital (oprema i građevinski objekti) ▪ ljudski rad ▪ zemljište 	<ul style="list-style-type: none"> ▪ obrazovanje ▪ istraživanje i razvoj ▪ tehnologija
<i>Osnova konkurencije na tržištu</i>	
<ul style="list-style-type: none"> ▪ troškovi ▪ cene 	<ul style="list-style-type: none"> ▪ znanje ▪ inovacije
<i>Svrishodnost državnih intervencija</i>	
<ul style="list-style-type: none"> ▪ državne intervencije su u osnovi npotrebne 	<ul style="list-style-type: none"> ▪ svrshodnost makroekonomskog menadžmenta

Izvor: Autori

Ekonomija znanja označila je kombinovanje ekonomskih teorija baziranih na zakonima tržišta i korisnosti dobara sa neopipljivim vrednostima. „U ekonomiji baziranoj na znanju, mnoge kompanije kreiraju, stiču i održavaju konkurentsku prednost na turbulentnom tržištu zahvaljujući inovacijama“ (Miletić, Trajković & Mrdak, 2021: 165). Konkurentska prednost se seli od fizičkih prema neopipljivim i od vidljivih prema nevidljivim činiocima. Znanje valorizovano u inovacije igra odlučujuću ulogu u stvaranju ekonomskih vrednosti. Za razliku od industrijske ekonomije u kojoj je bila upitna državna intervencija na tržištu, u ekonomiji znanja postoji evidentna potreba za makroekonomskim upravljanjem ključnim privrednim promenama.

Integrativni karakter inovacionog makromendžmenta

Sagledavajući aktivnosti i potencijalne domete savremene države u oblastima kreiranja znanja u literaturi je prisutno njihovo identifikovanje nacionlno politikom inovacija, odnosno inovacionim makromenadžmentom. Kombinacija široke palete intervencija savremene države u domenima razvoja nauke, tehnologije i instrijske proizvodnje stvara plodnu inovacionu klimu, koja u

konačnom skorom može biti od značaja u procesu povećanja inovacionog potencijala preduzeća i zemalja.

Inovacioni makromenadžment sve je značajnije sredstvo proaktivnog delovanja države u pravcu povezivanja znanja i preduzetništva, odnosno povezivanja naučnoistraživačkog sektora sa delovima privrede bitnim za proces kapitalizacije znanja. Njime savremena država nastoji da integriše upravljanje naučnim istraživanjima, tehnološkim i industrijskim razvojem u jedinstvenu politiku kreiranja znanja i njegove valorizacije u inovacije.

Teorijski fundus ovako shvaćenog inovacionog makromenadžmenta je evolutivna ekonomska misao. Suprotno porukama neoliberalne ekonomske teorije, evolutivna misao konstatuje da je podržavajuća uloga države u oblasti naučnog, tehnološkog i industrijskog razvoja preko potrebna aktivnost koja se ni izdaleka ne svodi na ublažavanje tržišnih neefikasnosti na čemu su insistirali ekonomisti neoklasične provenijencije. Naprotiv, delovanje države na unapređenje inovativnosti ekonomskih subjekata, pored kreiranja institucionalnog ambijenta koji pogoduje stvaranju znanja i posebno pogoduje njegovoj komercijalizaciji u inovacije podrazumeva integraciju znanja, inovacija i preduzetništva kao ključnih pokretača rasta i razvoja preduzeća i zemalja u ekonomiji znanja. Na dizajn tog ambijenta, pored naučne i tehnološke infrastrukture bitan uticaj imaju „obrazovna politika, politika tržišne konkurencije, informaciono-komunikaciona infrastruktura“ (Švarc, 2009: 23). U ovom kontekstu, inovacioni makromenadžment se može označiti amalgamom politike upravljanja naučnom, tehnološkom i industrijskom politikom pojedinih zemalja.

Veliki je broj instrumenata čijim korišćenjem država nastoji da unapredi inovativnost u nacionalnim razmerama. U načelu, moguće je praviti razliku između instrumenata ponude, tražnje i instrumenata regulacije (Cvetanović, 2002).

Instrumenti ponude se temelje na finansijskoj, materijalnoj i infrastrukturnoj podršci države unapređenju inovacione osposobljenosti pojedinih privrednih subjekata. Primera radi, javni sektor je bio ključan za nesmetano funkcionisanje osnovnih, a ne retko i za mnoga primenjena istraživanja i za obezbeđivanje finansijskih sredstava za pokretanje mnogih visoko rizičnih projekata, posebno u ranoj fazi njihove realizacije. Ulaganja u istraživačke i razvojne aktivnosti podstiču rast inovativnosti i konkretnu primenu inovativnih rešenja (Đuričin & Beraha, 2021).

Instrumenti tražnje se ogledaju u ogromnim javnim kupovinama proizvoda novih tehnologija ne retko u inicijalnim fazama njihovog nastanka. Drugačije kazano, javni sektor je direktno delovao na stvaranje tržišta mnogih inovacionih proizvoda velikim i sigurnim kupovinama proizvoda novih tehnologija (Perez, 2013).

Treća grupa instrumenata inovacionog makromenadžmenta su instrumenti zaštite i

regulacije. Obuhvataju brojna zakonska i regulativna rešenja putem kojih se na indirektan način deluje na stvaranje ambijenta povoljnog za nastanak i najširu difuziju inovacija.

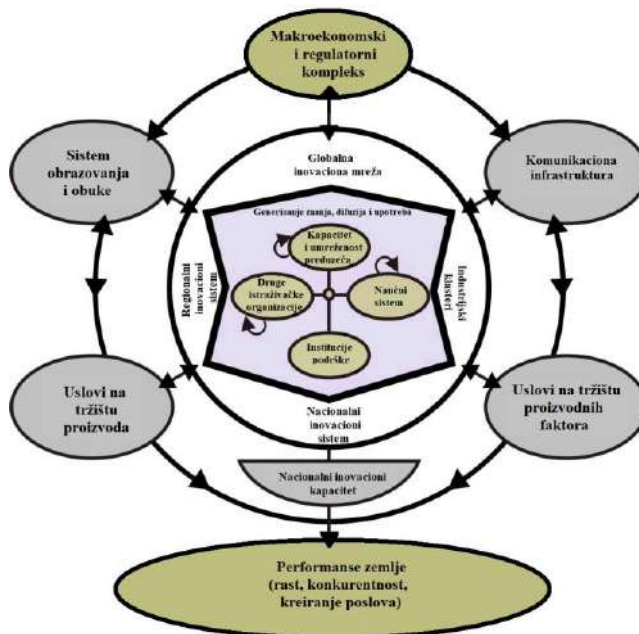
Značaj koncepta NIS-a za savremeni makromenadžment inovacija

U epicentru inovacionog makromenadžmenta nalazi se koncept NIS-a. Nastanak ovog koncepta se vezuje za britanskog ekonomistu Frimana (Freeman, 1987; 1995), švedskog ekonomistu Lundvala (Lundvall, 1992) i američkog neoevolutivnog ekonomistu Nelsona (Nelson, 1993). Ovi istraživači su imali drugačije viđenje nastanka i difuzije inovacija u poređenju sa pristupom neoklasičara (Soete, 2010). Koncept NIS-a apostrofira važnost interakcije između aktera u inovacionom procesu i ukazuje na različite forme inovacionih procesa oblikovanih brojnim društvenim, institucionalnim i političkim činiocima (Fagerberg & Vespagen, 2009). Dometi kvalitetnog NIS-a kao okvira preko koga inovacioni makromenadžment ispoljava svoje delovanje na rastuću komercijalnu valorizaciju znanja u inovacije u suštini su determinisani faktorima endogene prirode. Koncept NIS-a neposredno je povezan sa šumpeterijanskim pristupom sagledavanja preduzetništva kao izražajnog oblika inovativnog ekonomskog ponašanja. Isti apostrofira prisutnost elemenata rizika i neizvesnosti u procesima kreiranja znanja i njegove komercijalizacije inovacije.

Klasični pristupi istraživanju inovacija najviše su se oslanjali na analizu aktivnosti istraživanja i razvoja. Međutim, neoevolutivni ekonomisti sa pravom primećuju da nisu isključivo rezultati istraživanja i razvoja važni za nastanak i difuziju inovacija. Značajna podrška nastanku inovacijama predstavljaju odnosi između proizvođača i potrošača, raspoloživost odgovarajućom opremom, obučenost zaposlenih (Lundval, 1992). Ukratko, inovacije nastaju kako u procesu proizvodnje, tako i u distribuciji i potrošnji (Godin, 2006a; 2006b).

Smatra se da se inovacioni procesi dominantno odvijaju putem interakcije. Interaktivnost apostrofira značaj učenja i prilagođavanja ekonomskih aktera događajućim promenama u okruženju. Uspešni inovacioni sistemi dizajniraju ambijent koji pogoduje procesu stvaranja novih znanja i posebno njegovoj komercijalnoj valorizaciji u inovacije. Takve sisteme odlikuje izražena mobilnost resursa i različitih oblika kapitala (Slika 1).

Slika 1: Veze između ključnih aktera NIS-a



Izvor: Schrepf, Kaplan & Schroeder, 2013: 9.

Efikasnost i efektivnost NIS-a umnogome je funkcija uspešnosti razmene i cirkulacije znanja između pojedinaca, preduzeća i sektora, odnosno proizvodnje i difuzije znanja koje omogućuju njegovu proizvodnu eksploataciju i tržišnu valorizaciju. Premda su dominantni oblici proizvodnje, transfera i iskorišćavanja znanja specifični za svaki nacionalni inovacioni sistem, moguće je u savremenim proizvodnim i društvenim uslovima prepoznati činjenicu da na značaju uspešnosti preduzeća dobijaju ulaganja u aktivnosti istraživanja i razvoja, obrazovanja i sticanja najrazličitijih radnih veština.

Spiralni modeli kreiranja znanja i njegove komercijalizacije u inovacije

Spiralni modeli ukazuju na rastući značaj umrežavanja i međusektorske saradnje svih aktera inovacionog sistema uključenih u proces stvaranja i valorizacije znanja u inovacije (Etzkowitz & Leydesdorff, 2000). Jedan broj autora, čini se sa punim pravom, je mišljenja da spiralni modeli inovacija predstavljaju osnovu savremenih NIS-a (Ješić, 2015). Drugi, pak, ove modele stavljaju u istu ravan sa konceptom NIS-a, napominjući da za razliku od njega u kome dominantnu ulogu i značaj ima privreda, tj. preduzeća, spiralni modeli akcentiraju tesnu povezanost i umreženost sfera akademske zajednice, privrede i države sa podjednakom važnošću u nacionalnoj inovacionoj mreži (Pokrajac, 2016). “U ekonomiji znanja, stvaranje baze znanja zavisi od sinergija ostvarenih između tri glavna aktera u ekonomiji: akademske zajednice, sveta biznisa i vlade. Svaki akter može biti povezan s određenim elementom ekonomije: univerziteti su odgovorni za

stvaranje noviteta, poslovne firme stvaraju ekonomsko bogatstvo, a vlada je odgovorna za upravljanje interakcijama među akterima, ali je i odgovorna za poštovanje društvenih pravila, tj. zakonitost u radu“ (Pokrajac, 2016: 120). Drugim rečima, “model trostruke spirale stimuliše aktere na kooperativnost u radu u otvorenom prostoru cirkulacije invencija, znanja i inovacija. Zbog ogromnog sinergijskog potencijala koji se ostvaruje saradnjom svih aktera, ovaj model se ne retko u stručnoj literaturi sreće pod nazivom uspavani div. Da bi se taj spavajući div probudio svaki akter mora biti osposobljen za efikasne interakcije, što upućuje da slabost nekog od učesnika vodi raspadu i čitavog modela trostruke spirale” (Pokrajac, 2016: 120).

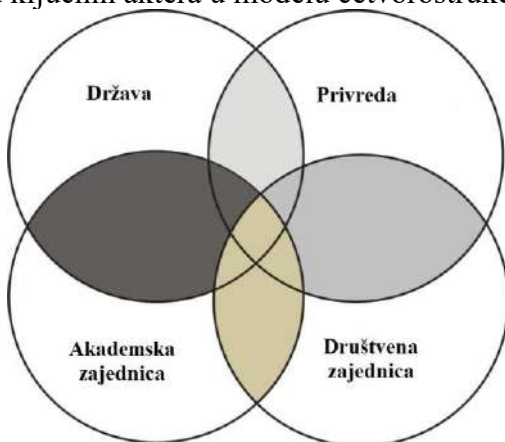
Slika 2. Trilateralna povezanost u modelu trostruke spirale



Adaptirano prema: Etzkowitz & Leydesdorff, 2000: 111.

Model četvorostroke spirale (*engl. Quadruple helix model*) polazi od pretpostavke po kojoj *akademska zajednica, privreda, država i društvo* funkcionišu na principima otvorene cirkulacije znanja, procesa učenja, komunikacija i međusobne saradnje (slika 3). Ovakve spiralne povezanosti za rezultat imaju višestruke efekte u procesima kreiranja znanja i njegove kapitalizacije u inovacije (Carayannis & Campbell, 2006).

Slika 3. Veze između ključnih aktera u modelu četverostruke spirale

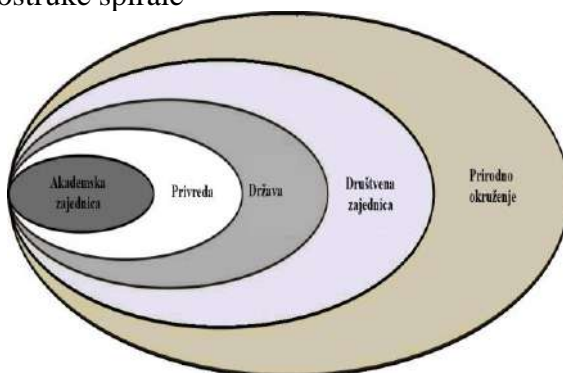


Izvor: Leydesdorff & Meyer, 2006.

U sagledavanju strukture i logike funkcionisanja modela četverostruke spirale istraživači akcentiraju mrežu preklapanja aktivnosti svih aktera u modelu. Komplementarne relacije činilaca četverostruke spirale omogućuju stvaranje fleksibilnog sistema NIS-a, čime se daje značajan doprinos postizanju održivog razvoja ekonomiji, odnosno društvu znanja.

Model petostruke spirale (*engl. Quintuple helix model*) nastoji da relativizira mnoge kontradiktornosti paradigme održivosti. U fokusu modela nalazi se način na koji društveno-ekološka promena može unaprediti proizvodnju znanja i njegovu valorizacija u inovacije (Carayannis, Barth & Campbell, 2012). Ovaj model dopunjuje model četvorostrukuke spirale petim podsistemom – prirodnim okruženjem (Slika 5).

Slika 4. Model petostruke spirale

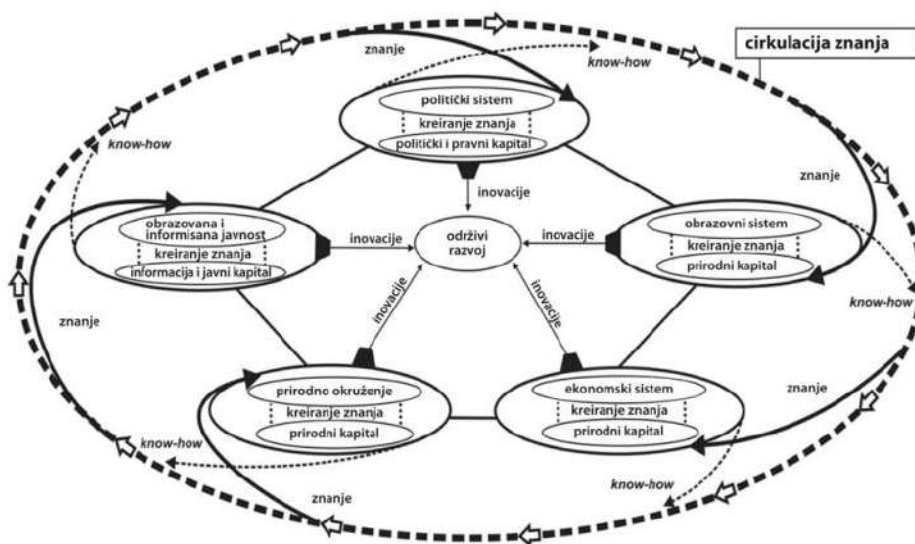


Izvor: Carayannis, Barth & Campbell, 2012: 6.

Na slici 5 prezentovane su funkcije modela petostruke spirale. Primećuje se da on na svojevrsan način ukazuje na činjenicu da znanje poseduje kvalitete i funkcije inputa i outputa za svaki podsistem posmatran pojedinačno. Ulazeći kao input u

jedan podsistem, znanje izlazi kao output u drugi podsistem, koji dalje predstavlja input za sledeći podsistem, kroz neprekidnu cirkulaciju i stvaranje inovacija. Na ovakav način, cirkulacija znanja kontinuirano deluje u pravcu stimulisanja procesa kreiranja novog znanja i njegove komercijalizacije u inovacije (Carayannis, Barth & Campbell, 2012).

Slika 5: Funkcije modela petostruke spirale



Izvor: Carayannis, Barth & Campbell, 2012: 7.

Model pokazuje da ulaganje u znanje i promociju kreiranja znanja stvara ključne impulse za inovaciju. Iniciranjem malih, ali kontinuiranih koraka, kroz sinergijski potencijal modela stvara se dugoročno i održivo društvo zasnovano na znanju, koje egzistira u ravnoteži sa prirodom.

Zaključak

Ekonomija znanja podrazumeva usklađenu umreženost svih aktera nacionalnog inovacionog sistema. Zaostajanje jednog od njih dovodi do zastoja u svima ostalima, jer se nalaze u tesnoj povratnoj sprezi, tj. odnosima direktne međuzavisnosti i međusobne uslovljenosti.

Potvrđena je hipoteza H1, da inovacioni makromenadžment u uslovima privređivanja koji omeđuju izazovi i dometi ekonomije znanja predstavlja nezaobilazan instrument u realizaciji savremenih strategija ekonomskog razvoja. Inovacioni makromenadžment objedinjuje aktivnosti naučne tehnološke i industrijske politike u čijoj je nadležnosti oblikovanje makroekonomskog

ambijenta koji pogoduje unapređenju inovativnosti pojedinih ekonomskih aktera i nacionalne ekonomije u celini.

Na osnovu ekspliciranih stavova brojnih autora u radu, može se zaključiti da je stav po kome koncept NIS-a predstavlja osnovnu gradivnu komponentu inovacionog makromenadžmenta u potpunosti prihvatljiv (H2 hipoteza).

Činjenica je da spiralni modeli stimulišu interaktivnost aktera u složenim aktivnostima kreiranja i implementacije znanja u nova inovaciona rešenja. Mogu se označiti nezaobilaznom platformom umrežavanja aktivnosti učesnika nacionalnog inovacionog sistema, što pretstavlja potvrdu hipoteze H3.

Literatura

1. Atkison, R., & Ezzel, S. (2014). *Ekonomika inovacija - utrka za globalnu prednost*. Zagreb: MATE.
2. Beraha, I., & Đuričin, S. (2022). *Perspektiva razvoja inovacionog sistema Republike Srbije*. Beograd: Institut ekonomskih nauka.
3. Carayannis, E., Barth, T., & Campbell, D. (2012). The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship*, 1(1), 2.
4. Carayannis, E., & Campbell, D. (2006). *Knowledge, Creation, Diffusion and Use in Innovation Networks and Knowledge Clusters: A Comparative Systems Approach Across the United States, Europe and Asia*. Westport: Praeger.
5. Cvetanović, S. & Novaković, I. (2018). *Makroekonomija i makroekonomski menadžment*. Beograd: Akademija poslovnih strukovnih studija.
6. Cvetanović, S. (2002). *Politika ekonomskog razvoja*. Niš: Ekonomski fakultet.
7. Drašković, M. (2010). Znanje kao neograničeni resurs i objekat upravljanja. *Montenegrin Journal of Economics*. No 11, 83-90.
8. Drucker, P. (1964). *The Practice of Management*. London: Heron Books Ltd.
9. Đuričin, S., & Beraha, I. (2021). Assessment of the Innovation Capacity of Business Entities in the Republic of Serbia. *Finance, Innovation and Technology: new models and structures*, Institute of Economics - Ss. Cyril & Methodius University: 179-198.
10. Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university-industry-government relations, *Research Policy* 29.
11. Florida, R. (2002). *The rise of the creative class*. New York: Basic Books.

12. Fagerberg, J. (2001) Economic Growth and Convergence, in M. Warner (ed.), *International Encyclopedia of Business & Management*, London Thomson Learning: 1547-1554.
13. Fagerberg, J., & Verspagen, B. (2009). Innovation studies -The emerging structure of a new scientific field, *Research Policy*, 38 (2) 218–233.
14. Freeman C. (1987). *Technology and Economic Performance: Lessons from Japan*. London: Frances Pinter.
15. Freeman, C. (1995). *The National System of Innovation in Historical Perspective*. Cambridge Journal of Economics. 19, 5–24.
16. Huggins, R., & Izushi, H. (2007). *Competing for Knowledge: Creating, Connecting and Growing*. London: Routledge.
17. Godin, B. (2006a). The Knowledge-Based Economy: Conceptual Framework or Buzzword? *The Journal of Technology Transfer*, 31 (1), 17–30.
18. Godin, B. (2006b). The linear model of innovation: The historical construction of an analytical framework. *Science, Technology, & Human Values*, 31(6), 639-667.
19. Ješić, J. (2015). *Model četvorostruke spirale (quadruple helix model) kao osnova nacionalnog inovacionog sistema*. Doktorska disertacija. Sremska Kamenica: Univerzitet Edukons.
20. Leković, V. (2018). Ekonomija znanja kao nova paradigam društveno-ekonomskog razvoja Republike Srbije. *Implikacije ekonomije znanja za razvojne procese u Republici Srbije*. Kragujevac: Ekonomski fakultet Univerziteta u Kragujevcu, str. 39 -52.
21. Leydesdorff, L., & Meyer, M. (2006). Triple Helix Indicators of Knowledge-Based Innovation Systems. *Research Policy*, vol. 35, no. 10.
22. Lucas, R. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22 (1), 3-42.
23. Lundvall, B. (ed.) (1992). *National Systems of Innovation. Towards a Theory of Innovation and Interactive Learning*: London: Pinter Publishers.
24. Mazzucato, M., & Semieniuk, G. (2017). Public financing of innovation: new questions, *Oxford Review of Economic Policy*, 33 (1) 24–48.
25. Mazzucato, M. (2014). *The Entrepreneurial State Debunking Public vs. Private Sector Myths Anthem*. London: Anthem Press.
26. Miletić, A., Trajković, S., Mrdak, G. (2021), Uticaj strateškog opredeljenja na odnos između upravljanja inovacionim portfolio uspeha. *Oditor*, 7 (1), 165 – 179.
27. Nelson, R. (1993). *National Innovation Systems: A Comparative Analysis*. New York: Oxford University Press.

28. Nelson, R. & Winter, S. (1982). *An evolutionary theory of economic change*. Harvard University Press.
29. Nijkamp, P. & Siedschlag, I. (ed.). (2011). [Innovation, Growth and Competitiveness](#). *Advances in Spatial Science*, Springer.
30. Osborne, D., Gaebler, T. (2000). *Public Management Reform*, Oxford University Press.
31. Perez, C. (2010). Technological revolutions and techno-economic paradigms. *Cambridge Journal of Economics*. 34 (1), 185-202.
32. Pokrajac, S., (2016). *Menadžment*. Beograd: Mađinski fakultet u Beogradu.
33. Romer, P. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy*, (94 (5), 1002-1037.
34. Schultz, T. (1981). *Investing in People: The Economics of Population Quality*. Berkeley: University of California Press.
35. Schrepf, B., Kaplan, D., & Schroeder, D. (2013). National, Regional, and Sectoral Systems of Innovation—An overview, Report for FP7 Project Progress. European Commission
36. Soete, L. (2010). Systems of Innovation. In B. H. Hall and N. Rosenberg (eds.), *Economics of Innovation*. Amsterdam: Elsevier.
37. Švarc, J. (2009). *Hrvatska u društvu znanja: prijepori i perspektive invacijske politike*, Zagreb: Školska knjiga.
38. Wickham, P. (2001). *Strategic Entrepreneurship: A decision-making approach to new venture creation and management*. London: Prentice Hall.

Datum prijema (Date received): 14.01.2024.

Datum prihvatanja (Date accepted): 20.03.2024.

INNOVATIVE MACROMANAGEMENT IN THE KNOWLEDGE ECONOMY

Srdjan Milićević¹⁸, Vladimir Kostić¹⁹, Maja Stošković²⁰

" Soul economy knowledge is continuous striving for innovation "

Lee Tein, Academy social science China

Abstract

After explaining the key postulates of the knowledge economy paradigm, the paper looks at the importance of unifying national policies of scientific, technological and industrial development in the form of innovative macro-management. A review has been made on the instruments offers demands and protection using which the entrepreneurial state works on the promotion national innovation Authors represent the opinion that the main building block of innovation macro-management is the concept of the national innovation system (NIS), whereby the unification platform activities academic community economy state and society represent so called spiral models innovation Base these model makes learning communicating and cooperation as a fundamental social process, on the one hand, and the growing network of activities of all participants in the creation of new knowledge and especially in the commercial valorization of knowledge into innovations, on the other hand.

Keywords: *knowledge economy, innovation macromanagement, NIS, spiral models of knowledge creation and innovation.*

JEL: *A13; E14; O30; D02;*

Introduction

Theoretically foundation concept macroeconomic management it is possible to find in the attitude Peter Drucker by coma management means practice skill art and science management processes on different levels organization economy and society (Drucker, 1964). Like the system management production entities

¹⁸ Assistant Professor Srdjan Milićević, PhD, Metropolitan University in Belgrade, Faculty of Management, Tadeusa Koščuška 63, 11185 Belgrade, Republic of Serbia, Phone +381 64 11 62 902, E-mail: srdjan.milicevic@metropolitan.ac.rs

¹⁹ Senior lecturer Dr. Vladimir Kostić, Academy technical educational study Section Vranje Filipa Filipovića no. 20, 17000 Vranje Republic of Serbia Phone +381 17/21-889 E-mail: vladimir.kostic@akademijanis.rs

²⁰Dr. Maja Stošković Privredna chamber Serbia Resavska 13 - 15, 11000 Belgrade, Republic of Serbia Phone +381 11 41 49 624, E-mail: maja.stoskovic@edu.rs

management appears in the nineteenth while your own full affirmation acquired in the twentieth century

Development management during the last ones about thirty year follows highways changes in the economy and society which are the most common covered by the expression paradigm a economy knowledge A key feature of the knowledge economy is the emphasized reliance of economic activities on the creative abilities of people, while at the same time they are less and less based on the use of physical capital and natural resources (Florida, 2002). In the new economic conditions, the creators of national economic development strategies are paying more and more attention to the creation and diffusion of new knowledge and the most successful commercial valorization of knowledge into innovations.

In principle, it is possible to distinguish between micro-management and macro-level management. The content coverage of the category of micromanagement extends to numerous and increasingly complex dimensions of managing the functioning of economic subjects, while the content of macromanagement can in a certain sense be identified with numerous activities of planning and managing economic flows in the national economy. " Macroeconomic management should be understood as a set of measures and activities undertaken by the creators of economic policy and, more broadly, social development policy, alone or in cooperation with one of the many economic entities in conceiving and realizing the defined goals of socio-economic development" (Cvetanović & Novaković 2018: 131). At the same time it is not allowed one moment to lose from vision the fact that economically Life takes place in the microeconomic entities and that it is fundamental premise efficiency politics management development national economy success functioning hers companies

The importance of knowledge for economic processes has radically increased in recent years. Its commercial valorization into innovations has been promoted as an essential driver of labor productivity growth and improvement of competitiveness at all levels Atkison & Ezzel 2014 Nijkamp & Siedschlag, 2011). This resulted in the affirmation of intellectual capital as a driver of labor productivity and improvement of competitiveness. On the macroeconomic level, there was an affirmation of new theoretical concepts such as this one theories economic growth Romer, 1986; Lucas, 1988 and evolutionary - innovative approach in the research of economic phenomena Nelson & Winter 1982), n ov e the concept is national wealth Sults 1981), new public management Osborne & Gaebler 2000 The theoretical foundation of these approaches is the decisive position of their creators that the production and commercial valorization of knowledge represents the main driving force of the development of market economies (Wickham, 2001).

The common thread of all these theoretical approaches is the challenge of the key ones the starting point of neoclassical economic theory in terms of existence

marketable balance inevitability manifestation of the law decreasing yield factors production exogenous nature innovation (Fagerberg, 2001). On a certain the way and alone concept innovative management implicitly implies negation mentioned theoretical points of departure neoclassical theorists Specifically newer approaches they point out far wider justification state intervention in the economy and not only in the case of neutralization marketable shortcomings How are considered neoclassical economists possibilities manifestation non-decreasing yield factors production thanks to use knowledge like practically unlimited production resource endogenous nature innovation which implicitly and explicitly justifies active role state in planning management and control innovative activities economic actors Mazzucato 2014; Mazzucato & Semieniuk 2017). Newer theories of economic development assume that innovations represent the internal outcome of public and private investments in human capital, investments in research and development areas of production, as well as the design of the wider social environment in which economic subjects function Nelson & Winter, 1982).

Among the most important drivers of economic development in modern conditions, the system of education and knowledge acquisition stands out in the literature basic and applied research NIS competence (Freeman, 1987; Lundvall, 1992; Nelson, 1993). Nevertheless, according to the almost undivided opinion of analysts, the decisive role in shaping the conditions which favor the long-term sustainable growth and development of individual countries and their regions success creation and commercialization knowledge in innovation e (Švarc, 2009; Leković, 2018). An important one platform in processes creation and commercial valorization knowledge into innovation represents NIS- based on the spiral engl. *helix* models connection academic community production state and social communities Ješić 2015).

The aim of the work and the methodology used

Bearing in mind the previously presented statements, the objectives of the paper are as follows a) explanation of the key characteristics of the knowledge economy, b) apostrophizing and integrative character innovative macromanagement in the sense of unification content politics scientific technological and industrial development on the level individual national economy c) indicating the importance of the concept of NIS in innovative macromanagement and) analysis places spiral model creation knowledge and his commercialization into innovations in the economy knowledge

The following research hypotheses were established:

H1: Innovation macromanagement in economic conditions that limit the challenges and scope of the knowledge economy is an indispensable instrument in the realization of modern economic development strategies.

H2: The supporting building element of innovation macromanagement in the

knowledge economy is the concept of NIS.

H3: Platform mutual coordination activities NIS actors represent spiral models creation knowledge and his commercial valorization into innovations

It is in operation using method analysis and compilations presented unifying dimension innovative macromanagement in the sense of connection politics scientific technological and industrial development countries in the economy knowledge Using descriptive method is explained in more detail Idea of the concept of NIS, which is essential importance for understanding not only essence innovative of macromanagement already and unsustainability attitudes neoclassical economic theorists on the matter exogenous nature categories technological change In order to avoidance more detailed descriptive description essence and individual elements constructional design spiral model creation and commercialization knowledge into innovation graphic was used explication connection theirs key actors

Results work with discussion

Paradigm economy knowledge

Knowledge represents a " set fact information and skill acquired education or experience with goal theoretical or practical understanding and solutions problems It becomes valuable property necessary in all spheres decision-making Contributions development individual organization and society " (Drašković, 2010: 84). The paradigm of the "knowledge economy" in this century is an inspiring research topic in many social sciences. Economy knowledge is formed and wider on the base of use knowledge like unique unlimited and independent factors production which is impossible substitute others resources Knowledge is in it turns into economic goods and income in the majority economic activities and not only in those who is are directly associated with the highest technologies Everything is being organized more turn into innovative ones pri why like subject innovations become not only products and technology rather and ways organizations and mutual dealing with customers " (Drašković, 2010: 84) Although the concept itself still does not represent a fully rounded entity, a large number of economic analysts believe that understanding its essence and scope is the starting point for looking at the leading social and economic changes in the world during the last twenty years. Beraha & Djuricin 2022

Beginning in the 1990s, the development of new, and above all, information and telecommunication technologies acted in the direction of a fundamental transformation of the structure of the world economy. Environments that stepped deeper into the development of the knowledge-based economy showed incomparably better macroeconomic performance compared to countries that were late in the complex processes of digitization of the economy and society Huggins & Izushi 2007)

The affirmation of the knowledge economy paradigm led to a changed approach in economic research, which until that time was dominantly based on the analytical instrumentation of the industrial economy. The extent and nature of these changes is presented in Table 1.

Table 1: Basic premises of the economic theory of the industrial society and the knowledge economy

Industrial society	Economy of knowledge
<i>Theoretical postulates</i>	
<ul style="list-style-type: none"> ▪ exogenous nature of innovation ▪ diminishing returns ▪ market equilibrium 	<ul style="list-style-type: none"> ▪ endogenous nature of innovation ▪ non-decreasing (constant or increasing) returns ▪ market inefficiencies (positive and negative externalities, technology and knowledge spillovers)
<i>Factors of production</i>	
<ul style="list-style-type: none"> ▪ physical capital (equipment and construction facilities) ▪ human work ▪ land 	<ul style="list-style-type: none"> ▪ education ▪ Research & Development ▪ technology
<i>The basis of competition in the market</i>	
<ul style="list-style-type: none"> ▪ costs ▪ prices 	<ul style="list-style-type: none"> ▪ knowledge ▪ innovations
<i>Expediency of state interventions</i>	
<ul style="list-style-type: none"> ▪ State interventions are basically necessary 	<ul style="list-style-type: none"> ▪ expediency of macroeconomic management

Source: Authors

Economy knowledge she marked combining and economic ones theory based on laws markets and utility goods with intangible to them values ma " In the economy based on the knowledge many companies create acquire and they maintain competitive advantage on turbulent the market thanks to innovations " Miletić Trajković & Mrdak 2021: 165) Competitive advantage is shifting from the physically them according to intangible to them and from visible them according to invisible to their agents Knowledge valorized in game innovation decisive role in creation economic values Unlike the industrial economy, where state intervention in the market was questionable, in the knowledge economy there is evidence of the need for macroeconomic management of key economic changes.

Integrative nature innovative of macro management

Looking at the activities and potential scope of the modern state in the fields of knowledge creation, their identification with the national innovation policy, i.e. innovation macro-management, is present in the literature. The combination of a wide range of interventions by the modern state in the domains of development of science, technology and industrial production creates a fertile innovation climate which in the end can be of importance in the process of increasing the innovation potential of companies and countries

Innovative Macromanagement is an increasingly important means of proactive action by the state in the direction of connecting knowledge and entrepreneurship, that is, connecting the scientific research sector with parts of the economy essential for the process of knowledge capitalization. By him contemporary country strives to integrate the management of scientific technological and industrial research by developing into a unique policy of knowledge creation and its valorization into innovations

The theoretical foundation of innovative macro-management understood in this way is evolutionary economic thought. Contrary to the messages of neoliberal economic theory, evolutionary thought states that the supporting role of the state in the field of scientific, technological and industrial development is a much-needed activity that is far from reducing market inefficiencies, as insisted on by economists of neoclassical provenance. On the contrary, the action of the state to improve the innovativeness of economic subjects, in addition to creating an institutional environment that favors the creation of knowledge and especially favors its commercialization into innovations, implies the integration of knowledge, innovation and entrepreneurship as key drivers of the growth and development of companies and countries in the knowledge economy. In addition to the scientific and technological infrastructure, "educational policy, market competition policy, information and communication infrastructure" have an important influence on the design of that environment (Schwartz, 2009: 23). In this context, innovation macro-management can be defined as an amalgamation of the scientific, technological and industrial policy of individual countries.

It's a big number instruments whose by using country seeks to improve innovation in national scales In principle it is possible to make the difference between instruments offers demands and instruments regulation Cvetanović 2002)

Instruments offers are based on on the financial material and infrastructural support States promotion innovative skills individual economic subjects For example public sector was key to a smooth functioning basic and not rare and for many applied research and for providing financial start -up funds many high risky projects especially in the early stages phase theirs realizations In lies in research and development activities encourage growth of innovation and specific application in innovative solutions Đuričin & Beraha 2021)

Instruments the demands are reflected in the huge public purchases products new ones technology not rarely in the initial phases theirs of origin Different said public sector is directly acted on the creation markets many innovative products big and safe purchases products new ones technology (Perez, 2013).

The third a group instruments innovative of macro management are instruments protection and regulations They encompass numerous legal and regulative solutions via which are on indirect the way it works to create an environment favorable for the creation and widest diffusion of innovations

The importance of the concept of NIS for the modern macro-management of innovation

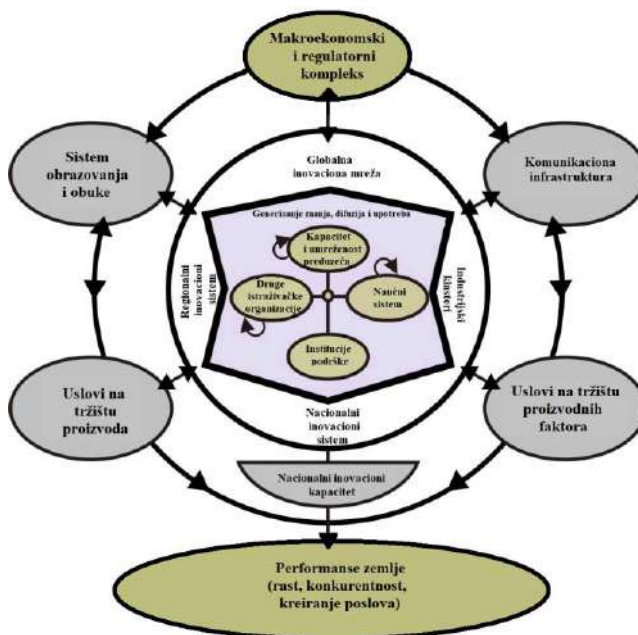
At the epicenter of innovative macro-management is the concept of NIS. The origin of this concept is linked to the British economist Freeman Freeman 1987 1995 the Swedish economist Lundvall Lundvall 1992 and the American neo - evolutionary economist Nelson Nelson 1993). These researchers had a different view of the origin and diffusion of innovations compared to the neoclassical approach Soete 2010 C o n c e p t of NIS apostrophes the importance of interaction between actors in the innovation process and points to different forms of innovation processes shaped by numerous social institutional and political factors Fagerberg & Vespagen 2009). The scope of quality NIS as a framework through which to innovate macro management manifests own action on the growing commercial valorization knowledge into innovation in essence are determined factors of endogenous nature The concept of NIS is directly related to the Schumpeterian approach perception of entrepreneurship as expressive o b character a innovative economic behavior The same apostrophizes the presence of elements of risk and uncertainty in the processes of knowledge creation and its commercialization of innovation.

The classic approaches to the research of life innovation are more focused on the analysis of the activities of life research However neo-evolutionary economists rightly note that it is not only research results that are important for the emergence and diffusion of innovation Significant support for the emergence of innovations is represented by relations between producers and consumers the availability of appropriate equipment and the training of employees Lundvall 1992). In short innovations occur both in the production process and in distribution and consumption Godin 2006a 2006b

It is believed that innovation processes take place dominantly in the path of interaction Int e r a ctiv ost apostrophes importance learning and adaptation of economic actors to the ongoing changes in the environment Successful accounting systems design a favorable environment process creation new ones knowledge and especially its commercial valorization in innovation Such systems are

characterized by pronounced mobility of resources and different forms of capital (Figure 1).

Figure 1: Links between key NIS actors



Source Schrempf, Kaplan & Schroeder 2013 9.

Efficiency and effectiveness NIS is largely a function of the success of the exchange and circulation of knowledge between individuals enterprises and sectors i.e. production and diffusion is the knowledge that makes possible its production exploitation and market valorization Although the dominant forms of production transfer and exploitation of knowledge are specific to each national innovation system it is possible in modern production and social conditions to recognize the fact that investments in research and development activities, education and the acquisition of various work skills are important for the success of companies

Spiral models creation knowledge and his commercialization into innovations

Spiral models indicate on the growing importance networking and intersectoral cooperation of all actors innovative system involved in the process creation and valorization knowledge into innovation (Etzkowitz & Leydesdorff 2000 One Number The author it seems with full right is of the opinion that spiral models innovation represent basis of modern NIS (Ješić 2015)). Others however these models put in the same flat with concept of NIS, noting that in contrast from the him in whom dominant role and importance has economy i.e. companies spiral models accentuate tight connection and networking sphere academic community

economy and States with equally importance in the national innovative network Pokrajac 2016). "In the economy knowledge creation bases knowledge depends from the synergy achieved between the three main ones actors in the economy academic community world business and government Every an actor can to be associated with a certain element economics universities are responsible for creating novelties business companies they create economic wealth and the government is responsible for management interactions among actors but also responsible for compliance social rules ie legality in work " (Pokrajac, 2016: 120) By the other in words "the triple model spirals stimulates actors on the cooperation in outdoor work space circulation invention knowledge and innovation Because huge synergistic potential which is realized cooperation of all actors this model is not uncommon in the professional literature luck named sleeping giant To be that the sleeping giant woke up every the actor must be trained for efficient interactions which suggests that weakness someone from the participants leads disintegration and the whole model triple spirals " (Pokrajac, 2016: 120)

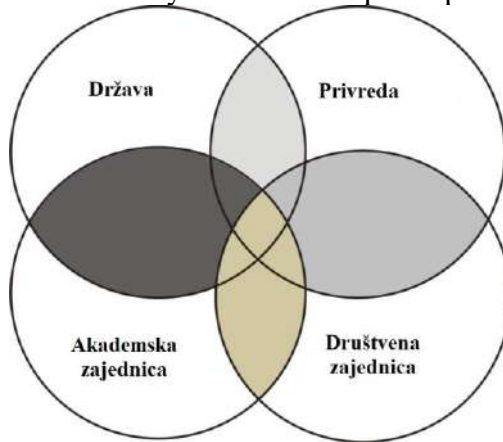
Figure 2. Trilateral connectivity in the triple helix model



Adapted from: Etzkowitz & Leydesdorff 2000: 111.

The quadruple *helix* model is based on the assumption *that the academic community the economy the state and society function on the principles of open circulation knowledge learning process communication and human cooperation* Figure 3 Such a spiral relationship for the result have multiple effects in the processes of knowledge creation and its capitalization into innovations Carayannis & Campbell 2006

Figure 3. Connections between key actors in the quadruple helix model

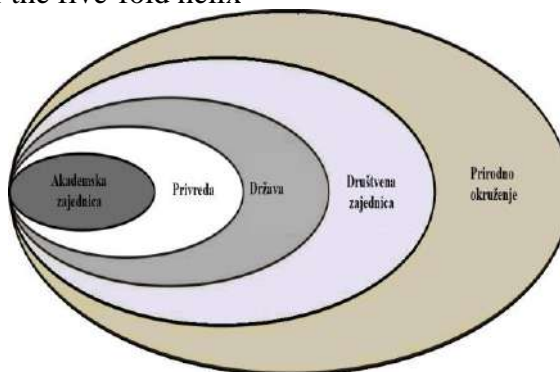


Source: Leydesdorff & Meyer, 2006.

In looking at the structure and logic of functioning of the quadruple spiral model, researchers emphasize the network of overlapping activities of all actors in the model. It is complementary factor relations quadruple helixes enable creation flexible Mr of the NIS system which makes a significant contribution to the achievement sustainable Mr development economy, i.e. knowledge society

Quintuple helix *model* tries to relativize many contradictions of the paradigm of sustainability The focus of the model is the way in which socio-ecological change can improve the production of knowledge and its valorization into innovations Carayannis Barth & Campbell 2012). This model complements the quadruple helix model with a fifth subsystem – the natural environment (Figure 5)

Figure 4. Model of the five-fold helix

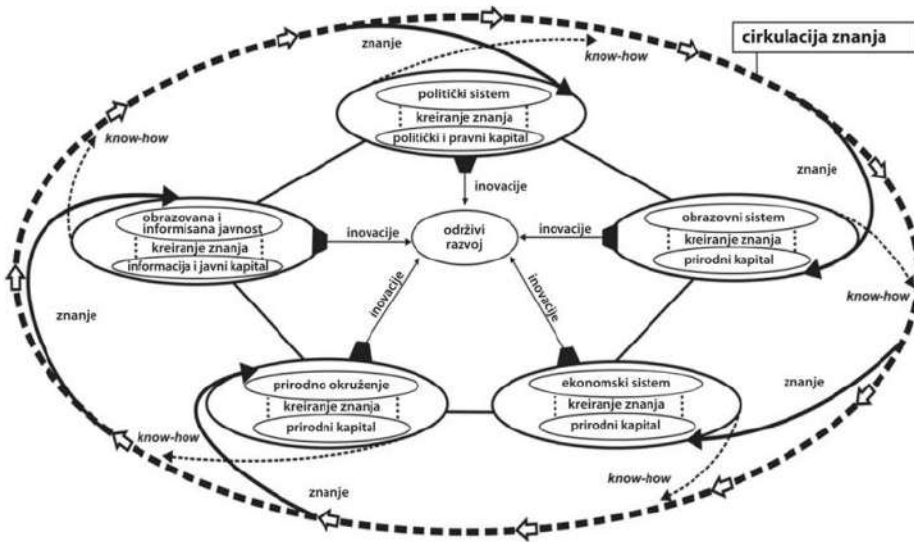


Source Carayannis, Barth & Campbell 2012 6

On page 5, the functions of the five-fold helix model are presented. It is noted that in a peculiar way it indicates the fact that knowledge possesses the qualities and functions of inputs and outputs for each subsystem considered individually. Entering as an input in one subsystem, knowledge comes out as an output in

another subsystem, which further represents an input for the next subsystem, through continuous circulation and creation of innovations. In this way, the circulation of knowledge continuously acts in the direction of stimulating the process of creating new knowledge and its commercialization into innovations Carayannis Barth & Campbell 2012).

Figure 5: Functions model fivefold spirals



Source Carayannis, Barth & Campbell 2012 7.

The model shows that investing in knowledge and promoting knowledge creation creates key impulses for innovation. By initiating small but continuous steps through the synergistic potential of the model, a long-term and sustainable society based on knowledge, which exists in balance with nature, is created.

Conclusion

The knowledge economy implies coordinated networking of all actors of the national innovation system. The lag of one of them leads to a lag in all the others, because they are in a tight feedback loop, i.e. relations of direct interdependence and mutual conditionality.

Hypothesis H1 was confirmed, that the innovative macromanager in economic conditions that limit the challenges and scope of the knowledge economy represents an indispensable instrument in the realization of modern strategies of economic development. Innovation macromanagement unites the activities of scientific, technological and industrial policy, whose responsibility is shaping the

macroeconomic environment that favors the improvement of the innovation of individual economic actors and the national economy as a whole

Based on the explicit positions of numerous authors in the paper, it can be concluded that the position according to which the concept of NIS represents the basic building component of innovation macromanagement is fully acceptable (H2 hypothesis).

The fact is that spiral models stimulate interactivity actors in complex activities creation and implementation knowledge into new innovative ones solutions I can tag myself inevitable platform networking activities participants national innovative system what represents a confirmation of hypothesis H3.

Literature

1. Atkison R., & Ezzel S. (2014). *Economics innovation - the race for global advantage* Zagreb: MATE.
2. Beraha I., & Đuričin S. (2022). *Perspective development innovative system Republic of Serbia* Belgrade: Institute economic science
3. Carayannis E., Barth, T., & Campbell, D. (2012). The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship* 1(1), 2.
4. Carayannis E., & Campbell, D. (2006). *Knowledge, Creation, Diffusion and Use in Innovation Networks and Knowledge Clusters: A Comparative Systems Approach Across the United States, Europe and Asia*. Westport: Praeger.
5. Cvetanović, S. & Novaković I. (2018). *Macroeconomics and macroeconomic management* Belgrade: Academy business professional study
6. Cvetanović S. (2002). *Politics economic development* Niš Economically college
7. Drašković M. (2010). Knowledge like unlimited resource and object management *Montenegrin Journal of Economics*. No. 11, 83-90.
8. Drucker, P. (1964). *The Practice of Management* London: Heron Books Ltd.
9. Djuricin S., & Beraha I. (2021). Assessment of the Innovation Capability of Business Entities in the Republic of Serbia. *Finance, Innovation and Technology: new models and structures* Institute of Economics - Ss. Cyril & Methodius University: 179-198.
10. Etzkowitz H., & Leydesdorff L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations, *Research Policy* 29.
11. Florida, R. (2002). *The rise of the creative class* New York: Basic Books.

12. Fagerberg, J. (2001) Economic Growth and Convergence, in M. Warner (ed.), *International Encyclopedia of Business & Management* London Thomson Learning: 1547-1554.
13. Fagerberg, J., & Verspagen B. (2009). Innovation studies - The emerging structure of a new scientific field, *Research Policy* 38 (2) 218–233.
14. Freeman C. (1987). *Technology and Economic Performance: Lessons from Japan* London: Frances Pinter.
15. Freeman, C. (1995). *The National System of Innovation in Historical Perspective* Cambridge Journal of Economics. 19, 5–24.
16. Huggins, R., & Izushi H. (2007). *Competing for Knowledge: Creating, Connecting and Growing* London: Routledge
17. Godin, B. (2006a). The Knowledge-Based Economy: Conceptual Framework or Buzzword? *The Journal of Technology Transfer* 31 (1), 17–30.
18. Godin, B. (2006b). The linear model of innovation: The historical construction of an analytical framework. *Science, Technology, & Human Values* 31(6), 639-667.
19. Ješić J. (2015). *Quad model spirals (quadruple helix model) as basis national innovative system* Doctoral dissertation Sremska Kamenica University Educons
20. Leković V. (2018). Economy knowledge as a new socio-economic paradigm development Republic of Serbia *Implications economy knowledge for development processes in the Republic of Serbia* Kragujevac: Economic college University of Kragujevac p. 39 -52.
21. Leydesdorff L., & Meyer, M. (2006). Triple Helix Indicators of Knowledge-Based Innovation Systems. *Research Policy* vol. 35, no. 10.
22. Lucas, R. (1988). On the mechanics of economic development. 22 (1), 3-42.
23. Lundvall, B. (ed.) (1992). *National Systems of Innovation. Towards a Theory of Innovation and Interactive Learning* London: Pinter Publishers.
24. Mazzucato M., & Semieniuk G. (2017). Public financing of innovation: new questions, *Oxford Review of Economic Policy* 33 (1) 24–48.
25. Mazzucato M. (2014). *The Entrepreneurial State Debunking Public vs. Private Sector Myths Anthem*. London: Anthem Press.
26. Miletić A., Trajković S., Mrdak G. (2021), Impact strategist determinations on the relationship between management innovation portfolio of success *Auditor* 7 (1), 165 – 179.
27. Nelson, R. (1993). *National Innovation Systems: A Comparative Analysis* New York: Oxford University Press.

28. Nelson, R. & Winter, S. (1982). *An evolutionary theory of economic change* Harvard University Press.
29. Nijkamp, P. & Siedschlag I. (ed.). (2011). Springer.
30. Osborne, D., Gaebler T. (2000). *Public Management Reform* Oxford University Press.
31. Perez, C. (2010). Technological revolutions and techno-economic paradigms. *Cambridge Journal of Economics* 34 (1), 185-202.
32. Pokrajac, S., (2016). *Management* Belgrade: Faculty of Magic in Belgrade.
33. Romer, P. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy* (94 (5), 1002-1037.
34. Schultz, T. (1981). *Investing in People: The Economics of Population Quality*. Berkeley: University of California Press
35. Schrepf, B., Kaplan, D., & Schroeder, D. (2013). National, Regional, and Sectoral Systems of Innovation—An overview, Report for FP7 Project Progress. European Commission
36. Soete L. (2010). Systems of Innovation. In BH Hall and N. Rosenberg (eds.), *Economics of Innovation* Amsterdam: Elsevier.
37. Schwartz J. (2009). *Croatia in society knowledge disputes and perspectives invasive politics* Zagreb: Školska a book
38. Wickham, P. (2001). *Strategic Entrepreneurship: A decision-making approach to new venture creation and management* London: Prentice Hall.

DETERMINANTE RAZVOJA KARIJERE OFICIRA VOJSKE SRBIJE

Vladimir Ristić²¹, Anita Pešić²², Dragan Bojanić²³

doi: 10.59864/Oditor12404R

Pregledni rad

UDK: 005.966:355.092(497.11)

Apstrakt

Razvoj karijere oficira je veoma složen proces i determinisan je brojnim činiocima. Osnovni cilj rada je ispitivanje uticaja tri grupe determinanti na razvoj karijere oficira Vojske Srbije (VS). Ispitivanje je obavljeno na uzorku od 219 ispitanika u toku 2016. godine pomoću deskriptivne i faktorske analize (Principal Component Analysis). Deskriptivna analiza je obavljena pomoću tri grupe determinanti, i to: 1) normativno-pravne pretpostavke; 2) različiti subjekti upravljanja ljudskim resursima i 3) planiranje, selekcija, školovanje, usavršavanje i raspoređivanje oficira na dužnosti. Faktorska analiza (ortogonalna rotacija, Gutman-Kajzerov kriterijum) je obavljena na skupu od 16 manifestnih varijabli. Rezultati su pokazali da na razvoj karijere oficira najveći uticaj ima šest faktora "determinanti razvoja karijere oficira."

Ključne reči: vojna profesija, oficir, karijera, faktori, Vojska Srbije

JEL: F18

Uvod

Vojna profesija je po mnogo čemu specifična svuda u svetu. Vojska je jedinstvena i razlikuje se od drugih organizacija, kako u obimu odgovornosti za mlade oficire, tako i u broju službenika koji moraju biti obučeni za efikasno rukovođenje na rukovodećim položajima (Allen, et al., 2014). Posebna specifičnost jesu znanja koja se stiču u vojnim školama (Wither, 2006) i mogu se koristiti samo u vojnoj organizaciji kao što su vojne nauke (Starčević, Blagojević, 2021), dok su u drugim državnim, društvenim i privrednim sistemima u manjoj meri primenjuju. Pored navedenog Nikolić ističe da karakter i duh, kao i lojalnost, što posebno odlikuje vojnike, ne mogu se naći na tržištu rada za jedan dan i da se one stvaraju

²¹ mr Vladimir Ristić, Institut za stratejska istraživanja, Veljka Lukića Kurjaka br. 1, R. Srbija, mob. tel 064/1900160, email: vladimir.ristic@mod.gov.rs

²² dr Anita Pešić, naučni saradnik, Institut za stratejska istraživanja, Veljka Lukića Kurjaka br. 1, R. Srbija, mob. tel 063/404706, email: anita.djordjevic@mod.gov.rs

²³ MA Dragan Bojanić, Institut za stratejska istraživanja, Veljka Lukića Kurjaka br. 1, R. Srbija, mob. tel 064/4007012, email: dragan.bojanic@mod.gov.rs

odnosno grade, razvijaju i održavaju tokom dugogodišnjeg procesa obučavanja (Nikolić, 2009). Mladom čoveku koji se opredelio za ovo izuzetno odgovorno i časno zanimanje, bi stoga trebalo omogućiti da samostalno planira svoj karijerni put. Upravo zbog toga, tok službe treba biti predvidiv, sa dugoročnim i jasno opredeljenim kriterijumima u smislu raspoređivanja, odnosno postavljenja na formacijska mesta - dužnosti, usavršavanja i unapređivanja. Istraživanje koje je sprovedeno u oružanim snagama Holandije prikazalo je dve dimenzije nesigurnosti posla (nesigurnost gubitka posla i nesigurnost u karijeri). Rezultati su iskazali da su naročito percepcije nesigurnosti u karijeri povećale namere napuštanja oružanih snaga Holandije (Eetveldt et al., 2013). U istraživanju motivacije za rad koje je 2020 sproveo Kovačević u VS, motivacioni činioci rangirani su po sledećem 1. visina plate je na prvoj poziciji, 2. dobri međuljudski odnosi su na drugoj, a 3. sigurnost zaposlenja na trećoj poziciji (Kovačević, 2021).

Radi ostvarivanja objektivnog izbora kandidata za odgovarajuće dužnosti, kriterijumi preko kojih se može celovito vrednovati njihov potencijal, treba da budu merljivi. Osnovni zahtev koji se postavlja pred buduće lidere je da mogu da deluju efikasno i da oblikuju svoje veštine u skladu sa brzim promenama borbenih uslova. Značajno istraživanje sprovedeno u 5 zemalja (Holandiji, Norveškoj, Sloveniji, Švedskoj i SAD) direktno se bavi pitanjem koji faktori utiču na razvoj dobrih lidera u vojsci i nastoji da razjasni šta bi prirodni razvojni proces mogao da ima za posledicu (Larsson et al. 2006). Da bi se postigao uspeh u različitim misijama, vojska SAD je posvećena odabiru pojedinaca za programe službenika koji će biti prilagodljivi, efektivni i tehnički kompetentni lideri u svim domenima u kojima se izvode operacije (Department of Defense [DoD], 2014). Shodno tome, prediktori učinka oficira moraju biti identifikovani i naučno kombinovani da bi se optimizovao izbor kandidata za komandne sisteme oficira američke vojske (Legree, et al., 2014). Takođe, u Vojsci Srbije rangiranjem kandidata na osnovu objektivnih i merljivih kriterijuma, uz ispunjenje uslova za fizičku i zdravstvenu sposobnost, kao i ispunjenjem kriterijuma za obavljanje određenih dužnosti, ovi kriterijumi mogu da posluže pravilnoj selekciji i da najviše dužnosti u organizaciji obavljaju najbolji, najpouzdaniji i najsposobniji kandidati. Na taj način, zadovoljiće se princip da najsposobniji kandidati budu na pravom mestu.

Kritički osvrt na kvalitet karijernog usavršavanja u članku War on the Rocks (Thornhill, 2018), dala je Paula Thornhill, bivši dekan U.S. National War College. Ona je izjavila da trenutni američki sistem profesionalnog vojnog obrazovanja nije svrsishodan. Njene kritike su se bazirale na kritikama iz Strategije nacionalne odbrane iz 2018. godine, koje su obrazovnu ustanovu za odbranu označile kao "stagnirajuću", ona je navela da sadašnji sistem ne stvara vrstu osoblja koje je

potrebno za donošenje efikasnih strateških i komandnih odluka (Morgan-Owen, 2018). Jedan od kriterijuma rangiranja pripadnika vojske jeste postignut uspeh i kvalitet stečenog znanja, sastavni je deo razvoja karijere oficira. Važnije od toga kako se obrazovanje pruža, jeste priznanje činjenice da je to neophodno za usavršavanje modernog vojnog profesionalca, i da u vremenu svakodnevne neizvesnosti i finansijske štednje ono predstavlja benefit ulaganjem u razvoj kadra.

U našoj zemlji, unutar aktuelnog sistema odbrane (Nikolić, 2021), značajan segment reforme predstavlja uspostavljanje kriterijuma za razvoj uspešne karijere profesionalnih pripadnika u Ministarstvu odbrane i Vojsci Srbije. Na osnovu dosadašnje analize postojećeg sistema upravljanja ljudskim resursima, kao i pojedinih stranih iskustava došlo se do modela koji će, pre svega, oficirima, a potom i ostalim kategorijama kadra, omogućiti profesionalni razvoj kod kojeg će svaki pripadnik znati svoje mesto unutar roda ili službe, odnosno kakav tip karijere i napredovanja mu predstoji.

U okviru Ministarstva odbrane Republike Srbije postoje organizacione celine čiji je zadatak da prate, analiziraju i implementiraju odluke u procesu razvoja karijere oficira. Aktivnosti koje sprovode te organizacione celine koncipirane za upravljanje ljudskim resursima, profesionalnom pripadniku Vojske Srbije pružaju informacije o ličnoj vojnoj karijeri i čine je dovoljno predvidivom, na osnovu čega svaki pripadnik Vojske Srbije može da zna svoje trenutno mesto u sistemu odbrane, šta mu se nudi u vojnoj karijeri, pod kojim uslovima i na koji način. Komandovanje i organizacione celine za upravljanje ljudskim resursima prate, organizuju, usmeravaju i ocenjuju profesionalne pripadnike, obezbeđuju njihov sopstveni razvoj i razvoj Vojske Srbije pružajući podršku, koja se ogleda u: 1) postavljanju ciljeva karijere (davanje stručne, realne i jasne perspektive koju mogu da ostvare u jedinici i nudeći veći broj mogućnosti za ostvarivanje tih ciljeva); 2) razmatranju karijere (pružanje pomoći u preispitivanju ciljeva i rezultata dotadašnje karijere); 3) izradi plana razvoja karijere (davanje informacija potrebnih za realizaciju ciljeva) i pružanju povratnih informacija u vezi s karijerom (realno procenjivanje aktuelnih rezultata rada i potencijala koji su u vezi sa karijerom).

Profesionalnim razvojem karijere oficira obezbeđuje se odgovarajući kadar za popunu najodgovornijih dužnosti u sistemu odbrane. Radi planiranja napredovanja sastavljaju se jedinstvene rang liste oficira po rodovima – službama, odnosno po tipovima karijere. Vođenje oficira u službi, u okviru roda-službe kojoj oficir pripada, načelno se obavlja zaključno sa činom kapetana. Vođenje usmeravanjem na dužnosti, načelno se obavlja od čina majora, u jednom od sledećih tipova karijere: komandno-operativna; štabno-funkcionalna; karijera u planiranju odbrane; karijera ljudskih resursa; logistička; obaveštajno-bezbednosna

i nastavno-naučna karijera. Međutim, radi praćenja i modelovanja razvoja karijere oficira neophodno je obezbediti odgovarajući skup pokazatelja koji određuju moguće tokove razvoja karijere.

Metodologija istraživanja

Upravljanje karijerom nije samo organizacioni proces, već i individualni. Ova dva procesa, organizacioni i individualni, treba da budu međusobno usklađeni i povezani. Organizaciona jedinica za ljudske resurse – koordinira i pruža stručnu pomoć rukovodiocima i zaposlenima u upravljanju karijerom (Lojic, 2009). Razvoj karijere oficira je veoma složen proces i determinisan je brojnim činiocima (Marcek at al., 2018). Osnovni problem ovog istraživanja je kakav uticaj imaju pojedine determinante kao što su: 1) normativno-pravne pretpostavke; 2) različiti subjekti upravljanja ljudskim resursima i 3) planiranje, selekcija, školovanje, usavršavanje i raspoređivanje oficira na proces razvoja karijere oficira.

Shodno tome, opšti cilj ovog istraživanja je da se ispita kakav je uticaj osnovnih determinanti na razvoj karijere oficira. Osim opšteg cilja, radi ispitivanja uticaja pojedinačnih determinanti na razvoj karijere oficira definisana su četiri posebna cilja: 1) ispitati da li normativno-pravne pretpostavke u značajnoj meri obezbeđuju uspešan razvoj karijere oficira; 2) utvrditi uticaj različitih subjekata upravljanja ljudskim resursima na razvoj karijere oficira; 3) utvrditi uticaj planiranja, selekcije, školovanja, usavršavanja i raspoređivanja oficira na razvoj njihove karijere i 4) utvrditi faktorsku strukturu uticaja osnovnih determinanti na razvoj karijere oficira.

Nezavisne varijable ovog istraživanja su tri determinante razvoja karijere oficira, a svaka determinanta sa određenim brojem tvrdnji: a) normativno-pravne pretpostavke (pet tvrdnji); b) uticaj različitih subjekata upravljanja ljudskim resursima na razvoj karijere oficira (pet tvrdnji) i c) planiranje, selekcija, školovanje, usavršavanje i raspoređivanje oficira na dužnosti (šest tvrdnji). Zavisna varijabla u ovom istraživanju je procena uticaja pojedinih determinanti na uspešnost razvoja karijere oficira.

U istraživanju je korišćena deskriptivna metoda, a prikupljanje podataka je obavljeno pomoću anketiranja kao istraživačke tehnike. Anketiranje je obavljeno pomoću upitnika konstruisanog za potrebe empirijskog istraživanja. Uticaj pojedinih determinanti na razvoj karijere oficira procenjivan je na osnovu petostepene skale Likertovog tipa. Uzorak istraživanja je činilo 219 ispitanika – oficira različitih personalnih, statusnih i andragoških obeležja. Statistička obrada podataka je obuhvatala određivanje osnovnih statističkih parametara (frekvencija i procenat) i utvrđivanje strukture determinanti razvoja karijere oficira na osnovu

procene uticaja pojedinih činilaca na uspešnost razvoja karijere oficira pomoću faktorske analize. Za utvrđivanje broja značajnih faktora u analizi korišćen je Gutman-Kajzerov kriterijum jediničnog korena. Tako određeni faktori rotirani su u pravcu jednostavne strukture pomoću tzv. Varimaks kriterijuma kao analitičkog modela ortogonalne rotacije.

Rezultati i diskusija

Deskriptivnom analizom uticaja determinanti na razvoj karijere oficira biće predstavljen uticaj tri determinante (normativno-pravne pretpostavke; uticaj različitih subjekata upravljanja ljudskim resursima na razvoj karijere oficira i planiranje, selekcija, školovanje, usavršavanje i raspoređivanje oficira na dužnosti) i njima odgovarajućih 16 tvrdnji na razvoj karijere oficira.

Rezultati procene ispitanika po pitanju uticaja pojedinih tvrdnji *normativno-pravnih pretpostavki* (Tabela 1.) pokazuju da kada je reč o "Uredbi o stanjima u službi i o unapređivanju oficira, podoficira i profesionalnih vojnika i njenom uticaju na razvoj karijere oficira", svega 22% ispitanika se izjašnjava u prilog ovoj tvrdnji, a više od jedne trećine ispitanika (39,3%) smatra da pomenuta uredba ne doprinosi uspešnom razvoju karijere oficira.

Tabela 1. Uticaj normativno-pravnih pretpostavki na razvoj karijere oficira u Vojsci Republike Srbije

	Normativno-pravne pretpostavke	Uticaj na razvoj karijere oficira							
		Odgovori ispitanika							
		Da		Ne		Ne znam		Ukupno	
		F	%	F	%	F	%	F	%
1.	Uredba o stanjima u službi i unapređivanju oficira, podoficira i profesionalnih vojnika u potpunosti omogućava uslove za adekvatan razvoj karijere oficira	48	21.9	86	39.3	85	38.8	219	100
2.	Ponovno uvođenje polaganja ispita za čin majora bi unapredilo proces razvoja karijere oficira	84	38.4	65	29.7	70	32.0	219	100
3.	Normativno-pravne pretpostavke čine proces razvoja oficira u dovoljnoj meri predvidivim	68	31.1	45	20.5	106	48.4	219	100
4.	Odredbe Zakona o Vojsci Srbije omogućavaju pravilan i ravnomeran razvoj karijere oficira	85	38.8	39	17.8	95	43.4	219	100
5.	Godišnji plan školovanja i obuke u Ministarstvu odbrane predstavlja najvažniji dokument u sklopu individualnog planiranja razvoja karijere oficira	72	32.9	35	16.0	112	51.1	219	100

Odgovori na pitanje "Da li normativno-pravne pretpostavke u dovoljnoj meri čine proces razvoja karijere oficira predvidivim", ukazuju na to da skoro polovina ispitanika "ne zna" da li normativno-pravne pretpostavke čine ovaj proces predvidivim (48,4%). Međutim, nešto veći procenat ispitanika se izjasnio u prilog uticaja "Odredbi Zakona o Vojsci Srbije na pravilan i ravnomeran razvoj karijere oficira" skoro 40% ispitanika (38,8%) se izjasnilo u prilog ovoj tvrdnji. Oko 30% ispitanika ocenjuje da "Godišnji plan školovanja i obuke u Ministarstvu odbrane predstavlja najvažniji dokument u sklopu individualnog planiranja razvoja karijere oficira" (32,9%). Na kraju prvog dela analize rezultata deskriptivne statistike može se zaključiti da normativno-pravne pretpostavke ne obezbeđuju u značajnoj meri uspešan razvoj karijere oficira.

Uticaj pojedinih subjekata upravljanja ljudskim resursima na razvoj karijere oficira je, zbog svoje kompleksnosti, podeljen na dva dela. U prvom delu, rezultati istraživanja (Tabela 2), pokazuju da na razvoj karijere oficira najviše utiču pretpostavljene starešine (32,9%), zatim pretpostavljene komande i štabovi (31,1%), a tek onda lične želje i ambicija (26,5%). Uticaj ostalih subjekata

(Uprava za ljudske resurse GŠ VS; Uprava za kadrove MO i ostali faktori) je ispod 10 odsto (9,6%).

Tabela 2. Vrste subjekata koji imaju uticaj na razvoj karijere oficira

	Vrste subjekata	Frekvencija	Procenat	Kumulativni procenat
1.	Lične želje, rad i ambicija	58	26.5	26.5
2.	Pretpostavljeni starešina	72	32.9	59.4
3.	Pretpostavljene komande i štabovi	68	31.1	90.4
4.	Uprava za ljudske resurse (J-1) GŠ VS	4	1.8	92.2
5.	Uprava za kadrove SLjR MO	3	1.4	93.6
6.	Ostali faktori.	14	6.4	100.0
	Ukupno	219	100.0	

Uticaj ostala četiri parametra (tvrdnje) na razvoj karijere oficira (Tabela 3) pokazuje da odgovori na pitanje "Da li pripadnost određenom rodu-službi može u značajnoj meri da utiče na razvoj karijere oficira" ukazuju na to da čak 75,3% ispitanika smatra da je pripadnost rodu-službi determinišući faktor za razvoj karijere oficira. Oko 17 % njih (16,9%) smatra da to nije uticajni činilac, a oko 8 % ispitanika je neodlučno. Kada je reč o "Raspoređivanju oficira na dužnosti nakon završetka školovanja i njihovom uticaju na razvoj karijere oficira" rezultati istraživanja su pokazali da najveći procenat ispitanika smatra da je ovo vrlo značajan činilac za razvoj karijere oficira (88,1%). Zatim, ispitanicima je postavljeno pitanje: "Da li raspoređivanje oficira na dužnost nakon školovanja/usavršavanja trebalo bi da se prvenstveno obavlja na osnovu postignutog uspeha tokom usavršavanja?" Oko 50 % ispitanika se slaže s ovom tvrdnjom, s tim da čak 40 % njih smatra da to ne bi trebalo da bude pravilo.

Tabela 3. Uticaj različitih subjekata upravljanja ljudskim resursima na razvoj karijere oficira

	<i>Uticaj različitih subjekata upravljanja ljudskim resursima na razvoj karijere oficira</i>	Uticaj na razvoj karijere oficira							
		Odobori ispitanika							
		Da		Ne		Ne znam		Ukupno	
		F	%	F	%	F	%	F	%
1	Pripadnost određenom rodu i službi može u značajnoj meri uticati na razvoj karijere oficira	165	75.3	37	16.9	17	7.8	219	100
2	Raspoređivanje oficira po završetku školovanja/usavršavanja u značajnoj meri utiče na dalji razvoj njihove karijere	193	88.1	12	5.5	14	6.4	219	100
3	Raspoređivanje oficira na dužnost nakon završetka usavršavanja trebalo bi da se prvenstveno obavlja na osnovu postignutog uspeha tokom školovanja/usavršavanja	110	50.2	91	41.6	18	8.2	219	100
4	Socijalna mreža (grupisanje) u smislu geografskog porekla, porodičnih veza i slično u značajnoj meri utiču na razvoj karijere oficira	95	43.4	30	13.7	94	42.9	219	100
5	Uprava za kadrove SLJR MO u dovoljnoj meri obezbeđuje potrebne informacije o mogućnostima za razvoj karijere oficira.	32	14.6	135	61.6	52	23.7	219	100

Nakon sprovedene analize statističkih pokazatelja može se zaključiti da u procesu razvoja karijere oficira u različitoj meri učestvuje više subjekata, pri čemu raspoređivanje oficira nakon završetka školovanja/usavršavanja ima primarni značaj.

Deskriptivna analiza uticaja procesa planiranja, selekcije, školovanja, usavršavanja i raspoređivanja na odgovarajuće dužnosti na razvoj karijere oficira razmatrana je putem pet tvrdnji pokazuje da uspešnost razvoja karijere oficira zavisi od uspešnosti procesa planiranja, selekcije, školovanja, usavršavanja i raspoređivanja na odgovarajuće dužnosti oficira (Tabela 4.). Prvi korak u tom procesu je kvalitetni proces planiranja razvoja oficirskog kadra. Rezultati istraživanja pokazali su da oko 70 % ispitanika (71,7%) smatra da uspešan razvoj karijere oficira umnogome zavisi od kvalitetnog planiranja razvoja starešinskog kadra. Drugi korak u razvoju karijere oficira predstavlja selekcija oficirskog kadra za proces njihovog školovanja/usavršavanja. Prema rezultatima istraživanja, preko 80 % ispitanika (83,6%) smatra da pravilna selekcija oficira za upućivanje na školovanje/usavršavanje predstavlja osnovni preduslov za uspešnost u razvoju karijere oficira. U vojnoj profesiji, razvoj karijere oficira podrazumeva

horizontalno i vertikalno pomeranje u toku profesije. Kada je reč o horizontalnom pomeranju oficira, smatra se da ono obezbeđuje dodatne stručne kompetencije. Ispitanici su se u većini složili s ovom tvrdnjom (84,9%), a svega 8,2 % njih je izrazilo negativan stav po ovom pitanju.

Tabela 4. Uticaj procesa planiranja, selekcije, školovanja, savršavanja i raspoređivanja na odgovarajuće dužnosti na razvoj karijere oficira

	<i>Indikatori procesa planiranja, selekcije, školovanja, savršavanja i raspoređivanja na odgovarajuće dužnosti oficira</i>	Uticaj na razvoj karijere oficira							
		Odobori ispitanika							
		Da		Ne		Ne znam		Ukupno	
		F	%	F	%	F	%	F	%
1.	Uspešnost razvoja karijere oficira umnogome zavisi od kvalitetnog planiranja razvoja starešinskog kadra	157	71.7	25	11.4	37	16.9	219	100
2.	Pravilna selekcija oficira za upućivanje na školovanje/usavršavanja predstavlja osnovni preduslov za uspešnost u razvoju njihove karijere	183	83.6	21	9.6	15	6.8	219	100
3.	Pravilan razvoj karijere podrazumeva ne samo pomeranje oficira (u hijerarhiji VS/MO) po vertikali, već i po horizontali, čime se stiču dodatne stručne kompetencije	186	84.9	15	6.8	18	8.2	219	100
4.	U cilju pravilnog razvoja karijere, oficir bi trebao tokom radnog veka da se najmanje jednom (a poželjno i više puta) premešta iz Vojske Srbije u Ministarstvo odbrane, i obrnuto	123	56.2	57	26.0	39	17.8	219	100
5.	U toku profesionalne karijere, oficiri na najvišim dužnostima u Vojsci Srbije trebalo bi da provedu izvesno vreme na odgovarajućim nivoima visokoškolskog obrazovanja u ulozi nastavnika	108	49.3	62	28.3	49	22.4	219	100

Na osnovu prezentovanih rezultata istraživanja može se zaključiti da uspešnost procesa razvoja karijere oficira u značajnoj meri zavisi od uspešnosti realizacije procesa planiranja, selekcije, školovanja, usavršavanja i raspoređivanja na odgovarajuće dužnosti.

Faktorska struktura determinanti razvoja karijere oficira ispitana je putem procena uticaja tri različite determinante i njima odgovarajućih 16 tvrdnji na profesionalni razvoj karijere oficira. Ovim postupkom utvrđuje se da li se 16 manifestnih varijabli (tvrdnji), sa stanovišta procene ispitanika mogu svesti na manji i ograničeni broj latentnih varijabli (faktora) u skladu sa odabranim kriterijumom ekstrakcije latentnih varijabli (faktora).

Faktorska analiza 16 manifestnih varijabli za koje se pretpostavilo da imaju uticaj na razvoj karijere oficira obuhvatala je određivanje ukupne objašnjene varijanse, matrice komponenata i rotirane matrice komponenata. Za određivanje broja zajedničkih komponenti (faktora) korišćen je Gutman-Kajzerov kriterijum jediničnog korena (Tabela 5.). Prema dobijenim rezultatima, uočljivo je da je šest karakterističnih korena veće od jedinice, pa su u daljem postupku faktorske analize, u skladu sa odabranim kriterijumom, zadržano šest komponenti (faktora). Ukupna varijansa koja se može objasniti pomoću ovih šest komponenti (faktora) iznosi 55,594%.

Tabela 5: Ukupna objašnjena varijansa (Total Variance Explained)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.UREDDBA	2.795	17.471	17.471	2.795	17.471	17.471	2.298	14.363	14.363
2.ISPCINMAJ	1.758	10.986	28.457	1.758	10.986	28.457	1.560	9.747	24.110
3.NORMERAZK	1.235	7.719	36.177	1.235	7.719	36.177	1.497	9.358	33.468
4.ZAKONVSRK	1.199	7.491	43.668	1.199	7.491	43.668	1.384	8.648	42.116
5.GODPLSKOL	1.158	7.236	50.904	1.158	7.236	50.904	1.274	7.964	50.079
6.FAKRAZKAR	1.006	6.291	57.194	1.006	6.291	57.194	1.138	7.115	57.194
7.PRIPRODUKAR	.960	6.003	63.197						
8.RASPRAZVOJK	.891	5.572	68.769						
RASPDUZUSPŠ	.860	5.372	74.141						
10.SOCMREZA	.804	5.028	79.169						
11.UPRAVAKADROVA	.724	4.526	83.695						
12.RAZVKARPLANIR	.688	4.302	87.996						
13.RAZVKARPSELEK	.558	3.488	91.484						
14.RASPODUZUSPU	.502	3.137	94.622						
15.VERTHORPOMERA	.480	2.999	97.621						
16.DUZNOSTIMOVSA	.381	2.379	100.000						
Extraction Method: Principal Component Analysis									

Radi izdvajanja (ekstrakcije) komponenti (faktora) primenjena je metoda glavnih komponenti prikazana je matrica od šest komponenta manifestnih varijabli *determinanti razvoja karijere oficira*. Matrica komponenta je u narednoj etapi faktorske analize rotirana u pravcu jednostavne strukture pomoću "Varimax" kriterijuma, kao analitičkog modela ortogonalne rotacije (Tabela 7.).

Na osnovu rezultata rotirane matrice komponenta (faktora), PRVI FAKTOR najviše definišu manifestne varijable koje pripadaju grupi normativno-pravnih pretpostavki, i to: "Odredbe Zakona o Vojsci Srbije omogućavaju pravilan i ravnomeran razvoj karijere oficira" (0,725); "Normativno-pravne pretpostavke čine proces razvoja oficira predvidljivim u dovoljnoj meri" (0,716); "Uredba o stanjima u službi i unapređivanju oficira, podoficira i profesionalnih vojnika" (0,660); "Godišnji plan školovanja i obuke u Ministarstvu odbrane predstavlja najvažniji dokument u sklopu individualnog planiranja razvoja karijere oficira" (0,532) i "Ponovno uvođenje polaganja ispita za čin majora bi unapredilo proces razvoja karijere oficira" (0,499). Na osnovu navedenih određenja manifestnih varijabli ovaj faktor se može definisati kao "normativno-pravne pretpostavke u vojnoj delatnosti".

Tabela 6. Rotirana matrica komponenta manifestnih varijabli determinanti razvoja karijere oficira (Rotated Component Matrix)^a

	Component					
	1	2	3	4	5	6
1.UREDBA	.660	-.105	.043	.251	-.025	-.027
2.ISPCINMAJ	.499	.013	.009	.127	.089	.013
3.NORMERAZK	.716	.157	.181	-.236	.047	-.100
4.ZAKONVSRK	.725	.130	.181	-.265	-.223	-.092
5.GODPLSKOL	.532	.066	-.040	.433	-.067	.122
6.FAKRAZKAR	.403	-.106	-.137	.051	-.633	.052
7.PRIPRODUKAR	-.033	.158	.057	.705	.008	.120
8.RASPRAZVOJK	-.030	-.050	.024	.105	.002	.866
9.RASPODUZUSP	.054	.547	-.297	.151	.171	-.121
10.SOCMREZA	.179	-.005	-.012	.003	.871	.049
11.UPRAVAKADROVA	.234	.101	.264	.545	-.080	-.396
12.RAZVKARPLANIR	.041	.741	.098	.078	-.008	-.070

13.RAZVKARPSELEK	.030	.733	.305	.046	-.035	.138
14.VERTHORMOMERA	.077	.257	.568	-.136	-.003	.361
15.DUZNOSTIMOV	.161	.010	.587	.361	.108	-.014
16.DUZNOSTINASTAV	.051	.039	.691	.052	.018	-.097
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 8 iterations.						

Polazeći od vrednosti zasićenja manifestnih varijabli sa DRUGIM FAKTOROM (Tabela 7.), ovaj faktor najviše određuju sledeće manifestne varijable: "Uspešnost razvoja karijere oficira umnogome zavisi od kvalitetnog planiranja razvoja starešinskog kadra" (0,741); "Pravilna selekcija oficira za upućivanje na školovanje/usavršavanje predstavlja osnovni preduslov za uspešnost u razvoju njihove karijere" (0,733) i "Raspoređivanje oficira na dužnost nakon završetka školovanja/ usavršavanja trebalo bi da se prvenstveno obavlja na osnovu postignutog uspeha tokom školovanja/usavršavanja" (0,547). Na osnovu značenja ovih manifestnih varijabli, ovaj faktor je određen kao "kvalitetno planiranje razvoja starešinskog kadra i pravilna selekcija za njihovo upućivanje na školovanje/usavršavanje, kao i njihovo raspoređivanje na dužnost nakon završetka školovanja/ usavršavanja na osnovu postignutog uspeha."

TREĆI FAKTOR je jednoznačnije određen i najviše ga definišu manifestne varijable koje se odnose na razvoj karijere oficirskog kadra nakon završetka školovanja/usavršavanja, a to su: "U toku profesionalne karijere, oficiri na najvišim dužnostima u Vojsci Srbije trebalo bi da provedu izvesno vreme na odgovarajućim nivoima visokoškolskog obrazovanja u ulozi nastavnika" (0,691); "U cilju pravilnog razvoja karijere, oficir bi trebao tokom radnog veka da se najmanje jednom (a poželjno 2-3 puta) premesti iz Vojske Srbije u Ministarstvo odbrane, i obrnuto" (0,587) i "Pravilan razvoj karijere oficira podrazumeva ne samo pomeranje (u hijerarhiji Vojske Srbije/Ministarstva odbrane) po vertikali, već i horizontalno, čime se omogućuje da steknu dodatne stručne kompetencije" (0,568). Na osnovu određenja manifestnih varijabli, ovaj faktor se može jednoznačno odrediti kao "neophodnost vertikalnog i horizontalnog pomeranja oficirskog kadra tokom službe; višekratno premeštanje iz VS u MO i obrnuto."

ČETVRTI FAKTOR u najvećoj meri određuju manifestne varijable koje se odnose na raspoređivanje starešinskog kadra, i to: "Pripadnost određenom rodu-službi može u značajnoj meri uticati na razvoj karijere oficira" (0,705); "Uprava za kadrove SLjR Ministarstva odbrane u dovoljnoj meri obezbeđuje potrebne

informacije o mogućnostima za razvoj karijere oficira" (0,545) i "Godišnji plan školovanja i obuke u Ministarstvu odbrane predstavlja najvažniji dokument u sklopu individualnog planiranja razvoja karijere oficira" (0,433). Značenje navedenih varijabli ukazuje na to da se ovaj factor može definisati kao "pripadnost određenom rodu-službi i obezbeđivanje potrebnih informacija Uprave za kadrove,

Na osnovu dobijenih rezultata PETI FAKTOR je dvopolni, jer ga najviše određuju manifestne varijable koje označavaju snažan uticaj socijalne mreže na razvoj karijere oficirskog kadra, s jedne strane, i delovanje više faktora na razvoj karijere oficira, s druge strane. To su sledeće manifestne varijable: "Socijalna mreža (grupisanje) u smislu geografskog porekla, rođaćkih linija i slično u značajnom procentu utiče na razvoj karijere oficira" (0,871) i "Na razvoj karijere oficira utiču brojni subjekti" (-0,633). Ova značenja manifestnih varijabli upućuju na to da se ovaj faktor može odrediti kao "zajedničko delovanje više faktora na razvoj karijere oficira naspram uticaja socijalne mreže u njenom određivanju".

ŠESTI FAKTOR determinanti razvoja karijere oficira je takođe dvopolan, a određuju ga način raspoređivanja oficirskog kadra nakon završetka školovanja/usavršavanja i neophodnost njihovog vertikalnog i horizontalnog pomeranja u službi, s jedne strane, naspram obezbeđivanja nedovoljnih informacija Uprave za kadrove za njihov razvoj, s druge strane. Ovaj faktor određuju sledeće manifestne varijable: "Raspoređivanje oficira po završetku školovanja/ usavršavanja u značajnoj meri utiče na dalji razvoj njihove karijere" (0,866) "Pravilan razvoj karijere podrazumeva ne samo pomeranje oficira (u hijerarhiji VS/MO) po vertikali, već i po horizontali, čime se stiču dodatne stručne kompetencije" (0,361) i "Uprava za kadrove SLjR Ministarstva odbrane u dovoljnoj meri obezbeđuje potrebne informacije o mogućnostima za razvoj karijere oficira" (-0,396). Na osnovu značenja ovih varijabli, ovaj faktor se može odrediti kao "način raspoređivanja oficira nakon školovanja i usavršavanja i njihovo vertikalno i horizontalno pomeranje u struci, naspram nedovoljne informisanosti o mogućnostima njihovog razvoja."

Zaključak

Uspešnost razvoja karijere oficira predstavlja jednu od najznačajnijih tema u oblasti ljudskog ponašanja u vojnoj organizaciji, jer od stepena uspešnosti tog procesa u velikoj meri zavisi stepen zadovoljstva oficira poslom, a samim tim nivo osposobljenosti vojnoorganizacionih jedinica.

Osnovni cilj ovog rada je bio istraživanje uticaja tri determinante i njima odgovarajućih parametara (tvrđnji) na razvoj karijere oficira. Ispitivanje je obavljeno na uzorku od 219 ispitanika, pri čemu su rezultati obrađeni primenom

deskriptivne i faktorske analize. Rezultati afktorske analize su pokazali da na razvoj karijere oficira najveći uticaj ima šest faktora "determinanti razvoja karijere oficira" i to: F1) Normativno-pravne pretpostavke u vojnoj delatnosti; F2) Kvalitetno planiranje razvoja oficirskog kadra i pravilna selekcija za njihovo upućivanje na školovanje/usavršavanje, kao i njihovo raspoređivanje na dužnost nakon završetka školovanja/ usavršavanja na osnovu postignutog uspeha; F3) Neophodnost vertikalnog i horizontalnog pomeranja oficirskog kadra tokom službe; višekratno premeštanje iz VS u MO i obrnuto; F4) Pripadnost određenom rodu-službi i obezbeđivanje potrebnih informacija Uprave za kadrove Sektora za ljudske resurse Ministarstva odbrane, pri čemu primarni značaj ima Godišnji plan školovanja i obuke u Ministarstvu odbrane; F5) Zajedničko delovanje više faktora na razvoj karijere oficira naspram uticaja socijalne mreže u njenom određivanju i F6) Način raspoređivanja oficira nakon školovanja i usavršavanja i njihovo vertikalno i horizontalno pomeranje u struci, naspram nedovoljne informisanosti o mogućnostima njihovog razvoja.

Imajući u vidu sve navedene rezultate, za dalja istraživanja preporučuje se ispitivanje uticaja ostalih determinanti na razvoj karijere oficira. Radi unapređenja upravljanja ljudskim resursima u Vojsci preporučuje se iskustveno i naučno sagledavanje svih raspoloživih mogućnosti za adekvatno planiranje ljudskih resursa i razvoj karijere svih kategorije lica u sistemu odbrane.

Literatura

1. Allen, M. T., Bynum, B. H., Oliver, J. T., Russell, T. L., Young, M. C., & Babin, N. E. (2014). Predicting Leadership Performance and Potential in the U.S. Army Officer Candidate School (OCS). *Military Psychology*, 26(4), 310–326. <https://doi.org/10.1037/mil0000056>
2. David Morgan-Owen (2018) Approaching a Fork in the Road: Professional Education and Military Learning, *Commentary in War on the Rocks* July 25, 2018. Available at: <https://warontherocks.com/2018/07/approaching-a-fork-in-the-road-professional-education-and-military-learning/>
3. Department of Defense. (2014, March).Quadren-nial defense review report. Washington, DC: Author. Available at: <https://dod.defense.gov/News/Special-Reports/QDR/>
4. Gerry Larsson, Paul T. Bartone, Miepke Bos-Bakx, Erna Danielsson, Ljubica Jelusic, Eva Johansson, Rene Moelker, Misa Sjöberg, Aida Vrbanjac, Jocelyn Bartone, George B. Forsythe, Andreas Pruefert & Mariusz Wachowicz (2006) *Leader Development in Natural Context: A*

- Grounded Theory Approach to Discovering How Military Leaders Grow, *Military Psychology*, 18:sup1, S69-S81, DOI: [10.1207/s15327876mp1803s_6](https://doi.org/10.1207/s15327876mp1803s_6)
5. Headquarters Department of the Army, (2014) DA PAM 600–3 Commissioned Officer Professional Development and Career Management, Washington, DC, 2014. Available at: <http://dopma-ropma.rand.org/pdf/DA-PAM-600-3.pdf>
 6. Kovačević, M. (2021). Model of identification of motivational factors for work of the Serbian Armed Forces professional members and their hierarchical organization. *Vojno delo*, 73(2), 1-17. <https://doi.org/10.5937/vojdelo2102001K>
 7. Kriterijumi za izradu liste kandidata za potrebe selekcije u okviru karijernog vođenja i savetovanja u Ministarstvu odbrane i Vojsci Srbije („SVL br. 10/2012“).
 8. Kriterijumi za formiranje lista kandidata za postavljenje na formacijsko mesto višeg čina, za upućivanje na školovanje i usvršavanje i za unapređenje u viši čin („SVL br.13/2012“).
 9. Kriterijumi za profesionalnu vojnu službu. Specijalni dodatak, *Obrana*, 16, 15. maj 2006. godine.
 10. Kulić Ž. (2005), *Upravljanje ljudskim potencijalima*, Radnička štampa, Beograd.
 11. Lojić R., (2009), *Career Planning and Development*, *Vojno delo*, br. 2/2009, Beograd. http://www.odbrana.mod.gov.rs/odbrana-stari/vojni_casopisi/arhiva/VD_2009-2/Vono%20delo%20br.%202-2009.pdf
 12. Luke G. Grossman (2015), *Command and General Staff Officer Education for the 21st Century: examining the German model*, USAF, School of Advanced Military Studies United States Army Command and General Staff College Fort Leavenworth, Kansas AY 01-02. Available at: <https://pdfs.semanticscholar.org/617d/ade5c6840fad5b510a922a1ace49fa4308e1.pdf>
 13. Marcek J., Ristic V., Bojanic D. (2018), The influence of some determinants on the career development of an officer, *Vojno delo*, br. 7/2018, DOI:10.5937/vojdelo1807239M, http://www.odbrana.mod.gov.rs/odbrana-stari/vojni_casopisi/arhiva/VD_2018-7/70-2018-7-00-Ceo_broj_VD.pdf
 14. Martijn W. van Eetveldt, Niels van de Ven, Marieke van den Tooren & Renzo C. Versteeg (2013) *The Importance of Career Insecurity for*

- Turnover Intentions in the Dutch Military*, *Military Psychology*, 25:5, 489-501, DOI: [10.1037/mil0000016](https://doi.org/10.1037/mil0000016)
15. Nevena, J. (2018). Human resource management in the function of acquiring competitive advantage in banking. *Oditor*, 5(3), 65-78. <https://doaj.org/article/904f0a3eb28f4227a90a8eddb89e5d08>
 16. Nikolić N. (2009) Culture Of Career Development And Ranking And Selection Of Military Officers, *Western Balkans Security Observer*, Journal of the Belgrade School of Security Studies, Year 4 N°14 July - September 2009. Available at: <http://www.bezbednost.org/upload/document/1001251501>
 17. Nikolić, N. (2021). Models of selective military service in modern conditions. *Vojno delo*, 73(4), 1-20. <https://doi.org/10.5937/vojdelo2104001N>
 18. Paula Thornhill (2018) To Produce Strategists, Focus on Staffing Senior Leaders, *War on the Rocks*, July 20, 2018. Available at: <https://warontherocks.com/2018/07/to-produce-strategists-focus-on-staffing-senior-leaders/>
 19. Peter J. Legree, Robert N. Kilcullen, Dan J. Putka & Laurie E. Wasko (2014) Identifying the Leaders of Tomorrow: Validating Predictors of Leader Performance, *Military Psychology*, 26:4, 292-309, DOI: [10.1037/mil0000054](https://doi.org/10.1037/mil0000054)
 20. Reitman, F. and Schneer, J. A. (2008), Enabling the new careers of the 21st century. *Organization Management Journal*, 5, pp.17–28. <https://www.researchgate.net/publication/247479383>
 21. Starčević, S., & Blagojević, S. (2021). The autonomy of the military profession as a condition for civil and democratic control of the military and the fulfillment of the main social role of the military. *Vojno delo*, 73(3), 121-133. <https://doi.org/10.5937/vojdelo2103121S>
 22. Uprava za ljudske resurse (J-1) GŠ VS, *Doktrina upravljanja ljudskim resursima Vojske Srbije*, Beograd, 2012.
 23. Uredba o načelima i kriterijumima za unutrašnje uređenje i sistematizaciju radnih mesta u Ministarstvu odbrane („Sl. glasnik RS“, br. 106/2008).
 24. Uredba o stanjima u službi profesionalnih vojnih lica i o unapređivanju oficira i podoficira („Sl. glasnik RS“, br. 112/2008, 9/2009 i 17/2010).
 25. Zakon o odbrani („Sl. glasnik RS“, br. 116/2007, 88/2009, 88/2009 - dr. zakon i 104/2009 - dr. zakon).
 26. Zakon o Vojsci Srbije („Sl. glasnik RS“, br. 116/2007 i 88/2009).
 27. Wither, J. (2006), What is an Educated Officer in the Early 21st Century, invited talk, Education and training in defense system – Euro Atlantic aspect conference (SIOMO-2006), Belgrade, November 29–30.

Datum prijema (Date received): 05.12.2023.
Datum prihvatanja (Date accepted): 30.01.2024.

DETERMINANTS OF THE CAREER DEVELOPMENT OF SERBIAN ARMY OFFICERS

Vladimir Ristić²⁴, Anita Pešić²⁵, Dragan Bojanić²⁶

Abstract

The development of an officer's career is a very complex process and is determined by numerous factors. The main goal of the paper is to examine the influence of three groups of determinants on the career development of officers of the Serbian Armed Forces (SAF). The survey was conducted on a sample of 219 respondents in 2016 using descriptive and factor analysis (Principal Component Analysis). Descriptive analysis was performed using three groups of determinants, namely: 1) normative-legal assumptions; 2) various subjects of human resources management and 3) planning, selection, training, training and deployment of officers on duty. Factor analysis (orthogonal rotation, Gutman-Kaiser criterion) was performed on a set of 16 manifest variables. The results showed that six factors "determinants of officer career development" have the greatest influence on officer career development.

Keywords military profession, officer, career, factors, The Army of Serbia

JEL: F18

Introduction

The military profession is in many ways specific everywhere in the world. The military is unique and differs from other organizations, both in the scope of responsibility for young officers and in the number of officers who must be trained to effectively lead in leadership positions. Allen, et al., (2014) A special feature is the knowledge acquired in military schools (Wither, 2006). and they can be used only in military organization such as military sciences (Starčević, Blagojević, 2021), while in other state, social and economic systems they are applied to a lesser extent. In addition to the above, Nikolić points out that character and spirit, as well as loyalty, which especially characterizes soldiers, cannot be found on the labor market in one day and that they are created, i.e. built, developed and maintained during a long-term training process (Nikolić, 2009). A young man who chose this extremely responsible and honorable profession should

²⁴ Vladimir Ristić, M.Sc., Institute for Strategic Research, Veljko Lukića Kurjaka no. 1, R. Serbia, mobile phone 064/1900160, email: vladimir.ristic @ mod.gov.Rs

²⁵ Dr. Anita Pešić research associate, Institute for Strategic Research, Veljko Lukića Kurjaka no. 1, R. Serbia, mobile phone 063/404706, email: anita.djordjevic @mod.gov.rs

²⁶MA Dragan Bojanić Institute for Strategic Research, Veljko Lukića Kurjaka no. 1, R. Serbia, mobile phone 064/4007012, email: dragan.bojanic @mod.gov.rs

therefore be allowed to plan his career path independently. Precisely because of this, the course of service should be predictable, with long-term and clearly defined criteria in terms of deployment, i.e. placement in formation positions - duties, training and promotion. Research conducted in the Dutch armed forces showed two dimensions of job insecurity (job loss insecurity and career insecurity). The results showed that, in particular, perceptions of career insecurity increased intentions to leave the Dutch armed forces (Eetveldt et al., 2013). In the study of motivation for work conducted by Kovačević in VS in 2020, the motivational factors were ranked according to the following 1. salary is in the first position, 2. good interpersonal relations are in the second, and 3. job security is in the third position (Kovačević, 2021).

In order to achieve an objective selection of candidates for appropriate positions the criteria through which their potential can be fully evaluated should be measurable. The basic requirement for future leaders is that they can act effectively and shape their skills in accordance with rapidly changing combat conditions. Significant research conducted in 5 countries Holland Norway Slovenia Sweden and USA deals directly with the question of what factors influence the development of good leaders in the military and seeks to clarify what the natural developmental process might entail Larsson et al 2006. In order to achieve success in various missions, the US Army is committed to selecting individuals for officer programs who will be adaptable, effective, and technically competent leaders in all domains of operations (Department of Defense [DoD], 2014). Accordingly, predictors of officer performance must be identified and scientifically combined to optimize candidate selection for US Army officer command systems (Legree et al., 2014). Also, in the Serbian Armed Forces by ranking candidates based on objective and measurable criteria, with the fulfillment of the conditions for physical and health ability, as well as the fulfillment of the criteria for performing certain duties these criteria can serve proper selection and that the highest positions in the organization are performed by the best most reliable and most capable candidates. In this way the principle that the most capable candidates will be in the right place will be satisfied.

A critical review of the quality of career training in the article (War on the Rocks 2018) was given by Paula Thornhill, former dean of the US National War College. She stated that the current US system of professional military education is not expedient. Building on criticism from the 2018 National Defense Strategy, which labeled the defense education establishment as "stagnant", she said the current system was not producing the kind of personnel needed to make effective strategic and command decisions (Morgan - Owen 2018). One of the criteria for ranking members of the military is the success achieved and the quality and

content of the acquired knowledge, it is an integral part of the officer's career development. More important than how education is provided, is the recognition of the fact that it is necessary for the improvement of a modern military professional, and that in a time of daily uncertainty and financial austerity, it represents a benefit of investing in personnel development

In our country, within the current defense system (Nikolić, 2021), a significant segment of the reform represents the establishment criteria For development of successful career professional members in The Ministry of Defense and the Serbian Armed Forces Based on the previous analysis of the existing human resources management system as well as certain foreign experiences d we reached a model that will before of all officers, a afterwards and to the others categories personnel enable professional development which each and member to know his place within the line or service, that is, what type of career and advancement he has coming up

Within the Ministry of Defense of the Republic of Serbia, there is an organizational unit whose task is to follow analyze and implement decisions in process development career officer Activities carried out by those organizational units designed for the management of human resources professional members of the Army Serbia provides information about personal military career and make it sufficiently predictable, on the basis of which every member of the Army Serbia can he knows his current place in the defense system what is offered to him in his military career, under what conditions and in what way. Commanding and organizational the whole For management human resources monitor, organize, direct and evaluate professional members, ensure their own development and the development of the Serbian Armed Forces providing support which is reflected in: 1) setting career goals giving a professional, realistic and clear perspective that they can achieve in the unit and offering a greater number of opportunities to achieve those goals); 2) considering the career providing assistance in reviewing the goals and results of the previous career); 3) creating a career development plan providing information needed for the realization of goals) and providing career-related feedback realistic assessment of current work results and career-related potential

The professional career development of officers ensures the appropriate staff to fill the most responsible duties in the defense system. In order to plan advancement, unique ranking lists of officers are compiled by gender - services, i.e. by career type Leading an officer in the service, within the line-of-service to which the officer belongs, is, in principle, carried out finally with the rank of captain. Leadership by guidance on duty is generally carried out from the rank of

major, in one of the following types of career: command-operational; staff-functional; a career in defense planning; human resources career logistic; intelligence-security and teaching-scientific career. However in order to monitor and model the career development of officers it is necessary to provide an appropriate set of indicators that determine the possible courses of career development

Methodology research

Management career it's not only organizational process, already and individual. This one two process, organizational and individual, should be mutually aligned and connected. Organizational unit For human resources - coordinates and provides professional help managers and employees in management career (Lojic, 2009) The development of an officer's career is a very complex process and is determined by numerous factors Marcek et al. 2018 The main problem of this research is what influence certain determinants have, such as: 1) normative-legal assumptions; 2) different subjects of human resource management and 3) planning, selection, training, training and assignment of officers to the process of officer career development.

Accordingly, the general goal of this research is to examine the influence of the basic determinants on the career development of officers. In addition to the general goal, four special goals were defined to examine the impact of individual determinants on officer career development: 1) examine whether normative-legal assumptions significantly ensure the successful career development of officers; 2) to assert the influence of various subjects of human resources management on the career development of officers; 3) to assert the influence of planning, selection, training, training and deployment of officers on their career development and 4) to determine the factor structure of the influence of basic determinants on the career development of officers.

Independent variables this one research are three determinants development officers' careers, and each determinant with a certain number of statements: a) normative-legal assumptions (five statements); b) the influence of various subjects of human resources management on the career development of officers (five claims) and c) planning selection training training and deployment of officers on duty (six claims). The dependent variable in this research is the assessment of the influence of certain determinants on the success of officer career development.

Research is used by women descriptive method a collecting data is done using surveys like researchers techniques Polling is done using questionnaire constructed for the needs of empirical research The influence of individual

determinants on the career development of officers was assessed on the basis of a five-point Likert-type scale. The research sample consisted of 219 respondents - officers of various personal, status and andragogic characteristics. Statistical data processing included the determination of basic statistical parameters (frequency and percentage) and determination of the structure of the determinants of officer career development based on the assessment of the influence of individual factors on the success of officer career development using factor analysis. To determine the number of significant factors in the analysis, the Gutman-Kaiser unit root criterion was used. Factors determined in this way were rotated in the direction of a simple structure using the so-called Varimax criterion as an analytical model of orthogonal rotation.

Results and Discussion

Descriptive analysis of the influence of determinants on the career development of officers the impact of three determinants (normative-legal assumptions; the impact of various subjects of human resource management on the career development of officers and the planning selection training training and deployment of officers on duty) and their corresponding 16 claims on the career development of officers will be presented.

The results of the respondents' assessment regarding the impact of certain claims of *normative-legal assumptions* Table 1 show that when it comes to the "Regulation on the conditions in the service and the promotion of officers, non-commissioned officers and professional soldiers and its impact on the career development of officers" only 22 % of respondents support this statement, and more than one third of respondents (39.3%) believe that the aforementioned regulation does not contribute to the successful development of the officer's career.

Table 1. The influence of normative-legal assumptions on the career development of officers in the Army of the Republic of Serbia

	Normative-legal assumptions	Influence on the career development of officers							
		Approval of the respondent							
		Yes		Not		I do not know		In total	
		F	%	F	%	F	%	F	%
1.	Regulation about states in service would and improvement officers non-commissioned officers and professional soldiers in completely allows conditions For adequate	48	21.9	86	39.3	85	38.8	219	100

	development career officer								
2.	Again introduction laying exam for the act major would be advanced process development career officer	84	38.4	65	29.7	70	32.0	219	100
3.	Normative legal assumptions are made process development officer in enough measure predictable	68	31.1	45	20.5	106	48.4	219	100
4.	Provisions of the Law about Armies Serbia enable correct and even development career officer	85	38.8	39	17.8	95	43.4	219	100
5.	Annual school plan and training in to the Ministry defense represents the most important document in as part of individual planning development career officer	72	32.9	35	16.0	112	51.1	219	100

The answers to the question "Do normative-legal assumptions sufficiently make the process of officer career development predictable" *indicate* that almost half of the respondents "don't know" whether normative-legal assumptions make this process predictable (48.4 %). However, a slightly higher percentage of respondents supported the impact of the "Provisions of the Law on the Serbian Armed Forces on the proper and balanced career development of officers", almost 40 % of respondents (38.8%) supported this statement. About 30 % of respondents estimate that the "Annual education and training plan in the Ministry of Defense is the most important document in the individual planning of officer's career development" (32.9%). On the the end the first works analysis results descriptive statistics can se to conclude normative - legal assumptions not security in significant measures successful development career officer

The influence of individual subjects of human resources management on the career development of officers is, due to its complexity, divided into two parts. In the first part, the results of the research *Table 2* show that the career development of officers is most influenced by superiors (32.9%), then by superior commands and staffs (31.1%), and only then by personal desires and ambitions (26, 5%). The influence of other entities (Human Resources Administration of the Ministry of Defense of the Armed Forces of the Republic of Croatia; Personnel Administration of the Ministry of Defense and other factors) is below 10 percent (9.6%).

Table 2. Types of subjects that have an influence on the career development of officers

	Types of subjects	Frequency	Percentage	Cumulative percentage
1.	Personal desires, work and ambition	58	26.5	26.5
2.	Superior Elder	72	32.9	59.4
3.	Superior Commands and Staffs	68	31.1	90.4
4.	Administration for Human Resources (J-1) GŠ VS	4	1.8	92.2
5.	Directorate for personnel of SLjR MO	3	1.4	93.6
6.	Other factors.	14	6.4	100.0
	In total	219	100.0	

The influence of the other four parameters (assertions) on the career development of officers (Table 3) shows that the answers to the question "Can belonging to a certain gender-service significantly influence the career development of officers" indicate that as many as 75.3 % of the respondents believes that belonging to the gender-service is a determining factor for the development of an officer's career. About 17 % of them (16.9%) think that it is not an influential factor, and approx 8 % of respondents are undecided. When it comes to "Deployment of officers on duty after graduation and their impact on officers ' career development", the research results showed that the largest percentage of respondents believe that this is a very significant factor for officer career development (88.1%). Then, the respondents were asked the question: "Should the deployment of officers to duty after schooling/training be primarily done on the basis of the success achieved during training? " they believe that this should not be the rule.

Table 3. Impact different subjects management human resources on the career development of officers

	<i>Influence different subjects management human resources on the development career officer</i>	Influence on the career development of officers							
		Approval of the respondent							
		Yes		Not		I do not know		In total	
		F	%	F	%	F	%	F	%
1	Belonging certain gender and service would can in significant measures to influence on the development career officer	165	75.3	37	16.9	17	7.8	219	100

2	Deployment officer as per completion of initial education / training in significant measures influence on the further development their career	193	88.1	12	5.5	14	6.4	219	100
3	Assignment of officers to duty after completion of training should be primarily done on the basis of success achieved during training/training	110	50.2	91	41.6	18	8.2	219	100
4	Social network grouping in meaning geographical origin family ties and Similarly in significant measures affect on the development career officer	95	43.4	30	13.7	94	42.9	219	100
5	Administration For personnel SLJR MO in sufficient measures provides needed information about I can do it For development career officer	32	14.6	135	61.6	52	23.7	219	100

After the analysis of statistical indicators, it can be concluded that in the process of career development of officers, several subjects participate to varying degrees, whereby the assignment of officers after the completion of education/training is of primary importance.

Descriptive analysis of the impact of the process of planning, selection, training, training and assignment to appropriate duties on the career development of officers was considered through five statements. shows that the success of an officer's career development depends on the success of the process of planning, selection, training, training, and assignment to appropriate officer duties Table 4). The first step in that process is the quality process of planning the development of the officer cadre. Results research showed are about 70% of respondents (71.7%) think successful development career officer a lot depends on the quality planning development old railway staff The second step in development career officer represents selection officer's frame For process their education / training According to results research over 80% of respondents (83.6% believe correct selection officer For guidance education / training represents basic prerequisite For success in development career officers In the military profession, the development of an officer's career implies horizontal and vertical movement in the course of the profession. When it comes to the horizontal movement of officers, it is considered to provide additional professional competences. Most of the respondents agreed with this statement (84.9%), and only 8.2 % of them expressed a negative attitude on this issue.

Table 4. The impact of the process of planning, selection, training, training and assignment to appropriate duties on the career development of officers

	<i>Indicators of the process of planning, selection, training, training and assignment to the appropriate duties of officers</i>	Influence on the career development of officers							
		Approval of the respondent							
		Yes		Not		I do not know		In total	
		F	%	F	%	F	%	F	%
1.	The success of the officer's career development largely depends on the quality planning of the development of the senior staff	157	71.7	25	11.4	37	16.9	219	100
2.	Proper selection of officers for referral to training/training is a basic prerequisite for success in their career development	183	83.6	21	9.6	15	6.8	219	100
3.	Proper career development implies not only moving officers (in the hierarchy of the Armed Forces/MoD) vertically, but also horizontally, thereby acquiring additional professional competencies	186	84.9	15	6.8	18	8.2	219	100
4.	In order to properly develop his career, an officer should be transferred at least once (and preferably several times) from the Serbian Army to the Ministry of Defense during his working life, and vice versa.	123	56.2	57	26.0	39	17.8	219	100
5.	In the course of their professional career, officers in the highest positions in the Serbian Armed Forces should spend some time at the appropriate levels of higher education in the role of teachers.	108	49.3	62	28.3	49	22.4	219	100

Based on the presented research results, it can be concluded that the success of the officer's career development process depends to a significant extent on the success of the implementation of the planning, selection, training, training and assignment to appropriate duties.

The factor structure of the determinants of officers' career development was examined by assessing the influence of three different determinants and their corresponding 16 statements on the professional career development of officers. This procedure determines whether the 16 manifest variables (statements) can be reduced to a smaller and limited number of latent variables from the point of view of the respondents. variables (factors) in accordance with the chosen criterion for the extraction of latent variables (factors).

Factor analysis of 16 manifest variables assumed to have an impact on officer career development included determination of total explained variance,

component matrix and rotated component matrix. The Gutman-Kaiser unit root criterion was used to determine the number of common components (factors) (Table 5). According to the obtained results, it is noticeable that six characteristic roots are greater than unity, so in the further process of factor analysis, in accordance with the selected criteria, six components (factors) were retained. The total variance that can be explained by these six components and (factors) amounts to 55.594%.

Table 5: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1. REGULATION	2,795	17,471	17,471	2,795	17,471	17,471	2,298	14,363	14,363
2. EXERCISE	1,758	10,986	28,457	1,758	10,986	28,457	1,560	9,747	24,110
3. NORMERASK	1,235	7,719	36,177	1,235	7,719	36,177	1,497	9,358	33,468
4. ZAKONVSRK	1,199	7,491	43,668	1,199	7,491	43,668	1,384	8,648	42,116
5. GODPLSCHOOL	1,158	7,236	50,904	1,158	7,236	50,904	1,274	7,964	50,079
6. FAKRAZKAR	1,006	6,291	57,194	1,006	6,291	57,194	1,138	7,115	57,194
7. SUPPLIER	.960	6,003	63,197						
8. DEVELOPMENT	.891	5,572	68,769						
DISTRIBUTION	.860	5,372	74,141						
10. SOCNET	.804	5,028	79,169						
11. PERSONNEL MANAGEMENT	.724	4,526	83,695						
12. RAZVCARPLANIR	.688	4,302	87,996						
13. RAZVKARPSELEK	.558	3,488	91,484						
14. CONTINUATION SCHEDULE	.502	3,137	94,622						
15. VERTHOPOMERA	.480	2,999	97,621						
16. DUZNOSTIMOVIS	.381	2,379	100,000						

Extraction Method: Principal Component Analysis

determining the career development of officers was presented Matrix of components was rotated in the next stage of factor analysis in the direction of a simple structure using the "Varimax" criterion, as an analytical model of orthogonal rotation (Table 7).

Based on the results of the rotated matrix of components (factors), the FIRST FACTOR is most defined by the manifest variables that belong to the group of normative-legal assumptions, namely: "The provisions of the Law on the Serbian Armed Forces enable proper and even career development of officers" (0.725); "Normative-legal assumptions make the process of officer development sufficiently predictable" (0.716); "Decree on service conditions and promotion of officers, non-commissioned officers and professional soldiers" (0.660); " Years " school plan and training in to the Ministry defense represents the most important document in as part of individual planning development career officers" (0.532) and " Re-introducing the exam for the rank of major would improve the career development process of officers" (0.499). Based on the stated determination of the manifest variables, this factor can be defined as "normative-legal assumptions in military activity".

Table 6. Rotated component matrix of the manifest variables of the determinants of officer career development (Rotated Component Matrix) ^{and}

	Component					
	1	2	3	4	5	6
1. REGULATION	.660	-.105	.043	.251	-.025	-.027
2. EXERCISE	.499	.013	.009	.127	.089	.013
3. NORMERASK	.716	.157	.181	-.236	.047	-.100
4. ZAKONVSRK	.725	.130	.181	-.265	-.223	-.092
5. GODPLSCHOOL	.532	.066	-.040	.433	-.067	.122
6. FAKRAZKAR	.403	-.106	-.137	.051	-.633	.052
7. SUPPLIER	-.033	.158	.057	.705	.008	.120
8. DEVELOPMENT	-.030	-.050	.024	.105	.002	.866
9. SCHEDULE OF SUSP	.054	.547	-.297	.151	.171	-.121
10. SOCNET	.179	-.005	-.012	.003	.871	.049
11. PERSONNEL MANAGEMENT	.234	.101	.264	.545	-.080	-.396

12. RAZVCARPLANIR	.041	.741	.098	.078	-.008	-.070
13. RAZVKARPSELEK	.030	.733	.305	.046	-.035	.138
14. VERTHORPOMERA	.077	.257	.568	-.136	-.003	.361
15. DUZNOSTIMOV	.161	.010	.587	.361	.108	-.014
16. DUTIES OF TEACHING	.051	.039	.691	.052	.018	-.097
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 8 iterations.						

Starting from the value of the saturation of the manifest variables with the SECOND FACTOR (Table 7), this factor is mostly determined by the following manifest variables: "The success of officer career development depends a lot on the quality planning of senior staff development" (0.741); "Proper selection of officers for referral to training/training is a basic prerequisite for success in their career development" (0.733) and "Assignment of officers to duty after completion of training/training should primarily be done on the basis of success achieved during training/ improvement" (0.547). Based on the meaning of these manifest variables, this factor is determined as "quality planning of the development of senior personnel and proper selection for sending them to schooling/training, as well as their assignment to duty after the completion of schooling/training based on the achieved success."

THE THIRD FACTOR is more unambiguously determined and most defined by the manifest variables related to the development of the career of officers after completing education/training, namely: "During their professional career, officers in the highest positions in the Serbian Armed Forces should spend some time at appropriate levels of higher education in the role of a teacher" (0.691); "For the purpose of proper career development, an officer should transfer at least once (and preferably 2-3 times) from the Serbian Armed Forces to the Ministry of Defense, and vice versa" (0.587) and "Proper career development of an officer implies not only moving (in the hierarchy of the Serbian Armed Forces/Ministry of Defense) vertically, but also horizontally, which enables them to acquire additional professional competences" (0.568). Based on the determination of the manifest variables, this factor can be unambiguously defined as "the necessity of vertical and horizontal movement of the officer cadre during the service; multiple transfers from the Armed Forces to the MoD and vice versa."

FOURTH AND FACTOR to the greatest extent determine the manifest variables related to the deployment of senior personnel, namely: "Belonging to a certain gender-service can significantly influence the development of an officer's career" (0.705); "The Directorate for Personnel of the Ministry of Defense of the Ministry of Defense sufficiently provides the necessary information on the opportunities for career development of officers" (0.545) and " Annual school plan and training in to the Ministry defense represents the most important document in as part of individual planning development career officers" (0.433) The meaning of the mentioned variables indicates that this factor can be defined as "belonging to a certain gender-service and providing the necessary information to the Personnel Administration,

Based on the obtained results, the FIFTH FACTOR is two-sided, because it is mostly determined by the manifest variables that indicate the strong influence of the social network on the career development of the officer cadre, on the one hand, and the action of several factors on the level of the officer's career, on the other hand. These are the following manifest variables: "The social network (grouping) in terms of geographical origin, family lines and the like has a significant influence on the career development of officers" (0.871) and "The development of an officer's career is influenced by numerous subjects" (-0.633) These values of the manifest variables indicate that this factor can be defined as "the joint action of several factors on the development of an officer's career versus the influence of the social network in its determination".

The SIXTH FACTOR determining the career development of officers is also two-sided, and it is determined by the method of deployment of officer personnel after the completion of education/training and the necessity of their vertical and horizontal movement in the service, on the one hand, against the provision of insufficient information by the Personnel Administration for their development, on the other hand This factor is determined by the following manifest variables: "The deployment of officers upon completion of education/training significantly affects the further development of their career" (0.866) "Proper career development implies not only moving officers (in the hierarchy of the Armed Forces/MoD) vertically, but also horizontally, which they acquire additional professional competences" (0.361)) and the 'Manpower Administration of the SLjR of the Ministry of Defense sufficiently provides the necessary information on opportunities for career development of officers' (-0.396). Based on the meaning of these variables, this factor can be determined as "the way of deploying officers after education and training and their vertical and horizontal movement in the profession, against insufficient information about the possibilities of their development."

Conclusion

Success development career officer represents one from the the most significant the theme in areas human behavior in military organization because from the degree success that process in big measures depends degree pleasures officer by work a alone the team level skills military organizations unit

Basic the goal this one work is was research influence three determinants and to them I will answer them parameters claims on development career officer The survey was conducted on a sample of 219 respondents, and the results were processed using descriptive and factor analysis. The results of the factor analysis showed that six factors "determinants of officer career development" have the greatest influence on officer career development, namely: F1) Normative-legal assumptions in military activity; F2) Quality planning of the development of officer staff and proper selection for sending them to schooling/training, as well as their assignment to duty after the completion of schooling/training based on the achieved success; F3) Necessity of vertical and horizontal movement of officer staff during service; multiple transfers from the Armed Forces to the Ministry of Defense and vice versa; F4) Belonging to a certain gender-service and providing the necessary information from the Personnel Administration of the Human Resources Sector of the Ministry of Defense with the primary importance being the Annual Education and Training Plan in the Ministry of Defense; F5) The joint action of several factors on the development of an officer's career versus the influence of the social network in determining it and F6) The manner of deployment of officers after schooling and training and their vertical and horizontal movement in the profession, versus insufficient information about the possibilities of their development.

Bearing in mind all the above results, for further research it is recommended to examine the influence of other determinants on the career development of officers. In order to improve the management of human resources in the Army, it is recommended to take an experiential and scientific view of all available opportunities for adequate planning of human resources and career development of all categories of persons in the defense system.

Literature

1. Allen, MT, Bynum, BH, Oliver, JT, Russell, TL, Young, MC, & Babin, NE (2014). Predicting Leadership Performance and Potential in the US Army Officer Candidate School (OCS). *Military Psychology*, 26(4), 310–326. <https://doi.org/10.1037/mil0000056>

2. David Morgan-Owen (2018) Approaching a Fork in the Road: Professional Education and Military Learning Commentary in War on the Rocks July 25, 2018. Available at <https://warontherocks.com/2018/07/approaching-a-fork-in-the-road-professional-education-and-military-learning/>
3. Department of Defense. (2014, March). Quadrennial defense review report. Washington, DC: Author. Available at <https://dod.defense.gov/News/Special-Reports/QDR/>
4. Gerry Larsson, Paul T. Bartone, Miepke Bos-Bakx, Erna Danielsson, Ljubica Jelusic, Eva Johansson, Rene Moelker, Misa Sjöberg, Aida Vrbanjac, Jocelyn Bartone, George B. Forsythe, Andreas Pruefert & Mariusz Wachowicz (2006) Leader Development in Natural Context: A Grounded Theory Approach to Discovering How Military Leaders Grow, *Military Psychology*, 18:sup1, S69-S81, DOI: [10.1207/s15327876mp1803s_6](https://doi.org/10.1207/s15327876mp1803s_6)
5. Headquarters Department of the Army, (2014) DA PAM 600–3 Commissioned Officer Professional Development and Career Management, Washington, DC, 2014. Available at: <http://dopma-ropma.rand.org/pdf/DA-PAM-600-3.pdf>
6. Kovačević, M. (2021). Model of identification of motivational factors for work of the Serbian Armed Forces professional members and their hierarchical organization. *Military work* 73 (2), 1-17. <https://doi.org/10.5937/vojdelo2102001K>
7. Eligibility criteria For making lists candidate For needs selection in framework career leadership and counseling in to the Ministry defense and Armies of Serbia (" SVL no 10/2012").
8. Eligibility criteria For formation list candidate For placement on the formational place higher act for guidance to schooling and perfecting and For promotion in senior citizen (" SVL No. 13/2012").
9. Criteria for professional military service. Special supplement, Defense, 16, May 15, 2006.
10. Kulic Z. (2005) Managing human potential Radnička štampa, Belgrade
11. Lojić R., (2009), Career Planning and Development Vojno delo, no. 2/2009, Belgrade. http://www.odbrana.mod.gov.rs/odbrana-stari/vojni_casopisi/arhiva/VD_2009-2/Vono%20delo%20br.%202-2009.pdf
12. Luke G. Grossman (2015), Command and General Staff Officer Education for the 21st Century: examining the German model, USAF, School of

- Advanced Military Studies United States Army Command and General Staff College Fort Leavenworth, Kansas AY 01-02. Available at <https://pdfs.semanticscholar.org/617d/ade5c6840fad5b510a922a1ace49fa4308e1.pdf>
13. Mark J., Ristić V., Bojanić D. (2018), The influence of some determinants on the career development of an officer *Vojno delo*, no. 7/2018 DOI:10.5937/vojdelo1807239M, http://www.odbrana.mod.gov.rs/odbrana-stari/vojni_casopisi/arhiva/VD_2018-7/70-2018-7-00-Ceo_broj_VD.pdf
 14. Martijn W. van Eetveldt, Niels van de Ven, Marieke van den Tooren & Renzo C. Versteeg (2013) *The Importance of Career Insecurity for Turnover Intentions in the Dutch Military* *Military Psychology*, 25:5, 489-501, DOI: [10.1037/mil0000016](https://doi.org/10.1037/mil0000016)
 15. Nevena, J. (2018). Human resource management in the function of acquiring competitive advantage in banking. *Auditor* 5 (3), 65-78. <https://doaj.org/article/904f0a3eb28f4227a90a8eddb89e5d08>
 16. Nikolić N. (2009) Culture Of Career Development And Ranking And Selection Of Military Officers Western Balkans Security Observer, Journal of the Belgrade School of Security Studies Year 4 ^{No.} 14 July - September 2009. Available at <http://www.bezbednost.org/upload/document/1001251501>
 17. Nikolić, N. (2021). Models of selective military service in modern conditions. *Military work* 73 (4), 1-20. <https://doi.org/10.5937/vojdelo2104001N>
 18. Paula Thornhill (2018) To Produce Strategists, Focus on Staffing Senior Leaders War on the Rocks July 20, 2018. Available at <https://warontherocks.com/2018/07/to-produce-strategists-focus-on-staffing-senior-leaders/>
 19. Peter J. Legree, Robert N. Kilcullen, Dan J. Putka & Laurie E. Wasko (2014) Identifying the Leaders of Tomorrow: Validating Predictors of Leader Performance, *Military Psychology*, 26:4, 292-309, DOI: [10.1037/mil0000054](https://doi.org/10.1037/mil0000054)
 20. Reitman, F. and Schneer, JA (2008) Enabling the new careers of the 21st century. *Organization Management Journal* 5, pp 17–28. [net / publication /247479383](https://doi.org/10.1037/mil0000054)
 21. Starčević, S., & Blagojević, S. (2021). The autonomy of the military profession as a condition for civil and democratic control of the military and the fulfillment of the main social role of the military. *Military work* 73 (3), 121-133. <https://doi.org/10.5937/vojdelo2103121S>

22. Administration for Human Resources (J-1) GŠ VS, *Doctrine of Human Resources Management of the Serbian Army* Belgrade, 2012.
23. Regulation on the principles and criteria for internal organization and systematization of workplaces in the Ministry of Defense ("Official Gazette of RS", No. 106/2008).
24. Decree on the conditions in the service of professional military personnel and on the promotion of officers and non-commissioned officers ("Official Gazette of RS", no. 112/2008, 9/2009 and 17/2010).
25. Law on Defense ("Official Gazette of RS", no. 116/2007, 88/2009, 88/2009 - other law and 104/2009 - other law).
26. Law on the Serbian Army ("Official Gazette of the RS", no. 116/2007 and 88/2009).
27. Wither, J. (2006), What is an Educated Officer in the Early 21st Century, invited talk, Education and training in defense system - Euro Atlantic aspect conference (SIOMO-2006), Belgrade, November 29–30.

THE CAPABILITY OF THE PUBLIC INTERNAL AUDIT FUNCTION IN SERBIA TO EFFECTIVELY CARRY OUT ITS ROLE

Jozefina Beke Trivunac²⁷, Gordana Vukelić²⁸, Stefan Milojević²⁹

doi: 10.59864/Oditor12405BT

Pregledni rad

UDK: 657.635-051-057.34(497.11)
005.963

Abstrakt

The aim of this paper is to assess the capability of the internal audit function in the Serbian public sector to add value to the public sector entities by performing its work effectively, to support progress of and achieve the requirements of EU Chapter 32 – Financial control, opened in 2015. We reviewed the annual reports regularly published by the Ministry of finance as well as SAI's annual activity reports for the period from 2016 to 2022. The results of our analysis show that the internal audit function in the Serbian public sector is still at the initial stage of its development. Our recommendation refers to the change of the model of organization of the internal audit function in the small entities and providing adequate resources for internal auditor's continual professional education.

Keywords: *EU Chapter 32 – Financial control, public sector internal auditors, size of audit function, continual professional education, Serbia.*

JEL: M480

Introduction

The fundamental premise of the Three Lines Model or the public sector is that the governments and other public sector entities are essential for maintaining orderly and fair societies (INTOSAI and The Institute of Internal Auditors 2022). These entities operate on behalf of the public and use public resources, and consequently bear responsibility for the effective, efficient, ethical, equitable and sustainable management of the public sector resources. The decision making and operating processes of public sector entities must be transparent to all stakeholders. Establishing process of good governance, including internal audit function as a third line is essential for good governance. Budgeting and public financial

²⁷ Dr Jozefina Beke-Trivunac, ALFA BK Univerzitet, Beograd, Republika Srbija. E-mail: jozefina.beke@live.com

²⁸ Dr Gordana Vukelić, Univerzitet Union, Beograd, Republika Srbija. E-mail: gordana_vukelic@yahoo.com.

²⁹ Dr Stefan Milojević, Univerzitet Edukons, Fakultet poslovne ekonomije, E-mail: stefan.milojevic@educons.edu.rs

management (PFM) are probably the most important instruments for proper implementation of public policies. PFM deals with the management of public resources, the allocation and use of resources collected from the economy.

Starting from 2015, the Republic of Serbia implemented a comprehensive set of reforms in the field of public finance management with the aim of increasing accountability, ensuring good financial management, and improving the efficiency and effectiveness of public resource management. This set of activities is included in the Public Financial Management Reform Program (PFMRP). The first part of this program took place in the period 2016-2020, and the second covers the period from 2021-2025 (Government of the Republic of Serbia 2021).

PFMRP pertains to the Cluster I – Basics within the public administration reform program and is important for macroeconomic stability, good governance, business environment, transparency and the similar. This program is the base for a few other EU negotiation chapters (Government of the Republic of Serbia 2021). A few of these chapters were opened in the previous period, 5 – Public procurement (December 13, 2016), 17-Economic and monetary policy (December 10, 2018), 29-Customs union (June 20, 2017), 32-Financial control (December 14, 2015) and 33-Financial and budgetary provisions (June 25, 2018) (Republika Srbija n.d.).

To develop transparency in public finances, the Law on the Budget System (Republika Srbija 2009 ..2021) defined a comprehensive system of measures for the management and control of public revenues, expenditures, assets, and liabilities, established by the government through public sector organizations. with the aim of managing and controlling public funds in accordance with the regulations, the budget, and the principles of good financial management, i.e., economy, efficiency, effectiveness, and openness. Financial management and control (FMC) in Serbia are regulated in line with the COSO model (Republika Srbija Ministarstvo finansija 2018), a framework for internal control, enterprise risk management, and fraud deterrence developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). PFMRP was the first reliable framework for monitoring of results of implementation of new governance system and financial management policies (Government of the Republic of Serbia 2021).

Public internal financial control

The most famous and widely recognized definition of internal control is the one by COSO. COSO defines internal control as “a process, affected by people, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: effectiveness and efficiency of operations, reliability

of financial reporting, and compliance with applicable laws and regulations.” (The Committee of Sponsoring Organizations of the Treadway Commission (COSO) 2013).

The aim of the public internal financial control (PIFC) system is primarily based on the management responsibility, which is defined by the Law on the Budget System as the obligation of managers at all levels of users of public funds to perform all work legally, respecting the principles of economy, effectiveness, efficiency, and publicity, as well as that their decisions, procedures, and results correspond to whoever appointed them or delegated responsibility to them. The Law on the Budget System stipulates that PIFC includes financial management and control of users of public funds, internal audit of users of public funds and harmonization and coordination of financial management and control and internal audits performed by Central harmonization unit (CHU) of the Ministry of finance.

The European Commission staff working document for Serbia in 2015 addressed several issues that are necessary for improving financial controls, as mentioned in Chapter 32 – Financial control (European Commission 2015). According to the Report, Serbia has already made some progress in terms of external audits. However, the principle of managerial accountability was not fully integrated into the management culture of public sector entities yet. The working document emphasized the need for annual review reports on the implementation of public internal financial control (PIFC) by CHU, which should include reviewing the implementation results, a comprehensive analysis of systemic weaknesses and propose corrective measures.

Internal auditing in the public sector

The assumption that the management is responsible for ensuring the establishment of internal control is widely accepted. In a broad sense, internal control includes all the controls operated by an organization to facilitate it to achieve its goals. The internal audit provides assurance that an adequate and effective internal control system is put in place.

Internal audit plays a critical role in a entity’s corporate governance. It is an operationally independent unit, checking that internal controls are working properly and making recommendations for optimization of controls. It should audit internal control systems, risk management, and corporate governance procedures. In the public sector, internal audit reports may be made available to the public upon request, in accordance with jurisdictional public record laws (INTOSAI and The Institute of Internal Auditors 2022).

In 2023, The Institute of Internal Auditors (The IIA) proposed new internal auditing standards. The proposed IIA's Global Internal Audit Standards™ for the first time highlight the public sector's unique characteristics, such as its purpose and governance structure. The new draft Standards include the definition of public sector which reads: "governments and all publicly controlled or publicly funded agencies, enterprises, and other entities that deliver public programs, goods, or services." (The Institute of Internal auditors 2023).

Draft of proposed standards pay significant attention to the public sector interest, referring to the public as the ultimate customer of all public sector services. Although the internal audit activity does not typically report directly to the public, proposed standards consider that all public sector internal audit work should be done on behalf of the public and with the public benefit and interest in mind. Consequently, internal auditors must assess what the organization is doing to provide value to the public. (The Institute of internal auditors 2022).

Establishing and properly supporting internal audit functions within governments at all levels should be considered a universal best practice. The absence of internal audit functions within government could significantly increase the risk of fraud, waste, abuse, malfeasance, inefficiency, cybersecurity and data privacy breaches, national security failures, breakdowns in the provision of government services, reduced public accountability, a lowered ability to identify and manage current and emerging risks facing the government and its citizens, and wasted resources.

In the case of the provision of internal audit services to smaller government subdivisions, policymakers may opt, for reasons of economies of scale, to set up internal audit functions that are shared among various entities. Options for outsourcing, sourcing or combined services enable the same team of auditors to be involved in audits across multiple entities.

The latest apprehension of the purpose of internal auditing "acknowledges that internal auditing enhances the organization's ability to serve the public interest, the collective well-being of the community of people, and entities that the auditors serve. This responsibility is an important characteristic of an internal audit in the public sector where the purpose of the organization is to provide services to the public." (The Institute of Internal auditors 2023).

The aim of the study is to examine the development of the internal audit function and its capabilities to effectively carry out its role in the public sector of the Republic of Serbia following the opening of EU Chapter 32 - Financial Control, in December 2015.

Methodology

Ministry of finance - CHU monitors the work of internal audit in the public sector of the Republic of Serbia through the analysis of annual reports on the functioning of the internal controls system and internal audit submitted by public sector entities. The results of this analysis are presented in a consolidated annual report which have been regularly prepared since 2009. The consistency of the presentation of data varies over the years. Following the opening of EU accession Chapter 32 – Financial Control in 2015, the consistency of presentation significantly increased. The available data include the number of public entities that submitted their annual reports to the CHU, the status of internal audits in the reporting entities, the number of internal auditors, the number of audits, audit findings, and similar. The analysis of these data enables the assessment of the development of the function of internal auditing in the entire public sector. Since 2016, the content and format of the consolidated annual report have been improved in accordance with European Committee recommendations.

Serbian State audit institution (SAI) also reports on the development of the internal control system and internal auditing in the public sector for audited entities since 2007. SAI annual operating reports on the annual results of annual audit programs, thus, the greatest number of entities differs from year to year. Nevertheless, the considerable number of audited entities, on the other hand, represents a good base for an overall assessment of the status of internal auditing in the public sector, as all entities operate in the same environments and under the same regulation.

For this paper, we analyzed the data for the period commencing in 2016, with the aim of assessing the results of the efforts invested in improving the internal audit function in the public sector following the opening of EU Chapter 32 - Financial Control, in December 2015. Although the dates are not consistently presented in all these reports, the lack of their consistency does not impact the overall assessment results.

Results on the implementation process and discussion

The development of internal control system and internal audit in the Serbian public sector can be tracked by analyzing reported data in the Serbian Ministry of finance CHU reports. For example, we can track the progress of awareness of public entities' management on the importance of the implementation of the proposed processes in the public management system by the number of entities which submitted their reports to the Ministry of finance CHU.

Table 1. The number of entities which submitted their mandatory annual reports to the Ministry of Finance's Central harmonization unit (CHU)

	Submitted reports	Processed reports**		Share of processed reports in the total number of entities by selected type of entities				
				Ministries	OOSO enterprises at the central level	Cities	Municipalities	
2016*	724	628	No	16	3	36	17	-
			%	-	-	-	-	-
2017*	936	763	No	17	3	38	21	-
			%	-	-	-	-	-
2018*	1014	938	No	18	4	29	19	65
			%	100%	100%	78%	68%	55%
2019***	945	886	No	18	4	28	19	62
			%	100%	100%	72%	68%	53%
2020****	2578	2578	No	21	4	36	25	95
			%	100%	100%	88%	89%	81%
2021**	2982	2982	No	21	4	36	25	96
			%	100%	100%	92%	89%	82%

Note: - data n/a

Sources: Autor's construct based on: * (Republika Srbija Ministarstvo finansija 2018) ** (Republika Srbija Ministarstvo finansija 2022); *** (Republika Srbija Ministarstvo finansija 2020) **** (Republika Srbija Ministarstvo finansija 2020)

The data presented on the Table 1 reveals that the number of public entities which submit their reports on financial management and control (FUK) continually increases, with the spike 2020. The difference between submitted reports and processed reports is another indicator of the quality of submitted reports. Namely, the differences relate to the empty reports. From 2020, all submitted reports were processed. Analysis of the structure of entities which submitted their reports, most difficulties occur at the municipality level, as the percentage of municipalities which submitted their reports is the lowest. The overall assessment is positive, as the awareness of public entities management significantly raised. Part of this success relate to the intensive training of employees responsible for public management held in the latest period, as a greater number of public fund beneficiaries have undergone the training and submitted their first annual reports on financial management and control (Government of the Republic of Serbia 2021).

FUK is a system of policies, procedures, and activities which provides reasonable assurance that the objectives of the public entity will be realized in a proper, economical, efficient, and effective way. The FUK system includes five interrelated elements that are defined in accordance with COSO framework: control environment, risk management, control activities, information and communication and monitoring and evaluation of the system.

During the regular audit process, the State Audit Institution in Serbia (SAI) examines the FUK system. Based on performed reviews, SAI could not find assurance that the internal control system was established in a way to ensure operations in accordance with regulations, internal acts, and contracts in the majority of audited entities. It was also determined that the conditions for adequate functioning of the internal audit were not appropriate. The SAI's analysis of irregularities in the functioning of financial controls reveals that the most of irregularities occur at the local level.

Table 2. Irregularities in the functioning of financial controls in 2018

Auditees	Central budget	Budgets of local governments	OMSI/users of funds of RHIF	Public enterprises/institutions	NBS/political parties/other	Total number of cases
Number of auditees – users of public funds	19	68	18	27	9	141
Elements of the System						
Control environment	7	278	28	11	26	350
Risk management	5	22	7	18	3	55
Control activities	21	407	46	30	11	515
Information and communication	13	180	61	10	14	278
Monitoring and evaluation	3	11	7	3	3	27
Total	49	898	149	72	57	1225
Share in Total	4%	73%	12%	6%	5%	100%
Average	3	13	8	3	6	9

Note: - = n.d.
Sources: Autors construct based on the (Državna revizorska institucija 2019)

Table 3. Development of the internal audit function in the public sector

Type of entity	Total number of entities						Number of entities with normative internal audit function					Percent of entities with three internal auditors					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2021
Ministries with administrative bodies in the composition	16	18	18	18	21	25	16	18	15	16	16	-	-	39%	39%	33%	48%

Other direct budget beneficiaries at the central level*	-	56	84	86	85	56	28		18	17	18	-	-	30%	33%	33%	33%
OOSO**	3	3	4	4	4	4	3	3	4	4	4	-	-	100%	100%	100%	100%
AP Vojvodina	-	-	-	1	1	1				1	1	-	-	-	100%	100%	100%
Cities	-	-	28	28	28	28			21	17	17	-	-	21%	21%	21%	25%
Municipalities	-	-	117	117	117	117			24	20	24	-	-	-	-	-	-
Public enterprises at the central level	-	34	37	39	41	39	33		24	21	22	-	-	50%	40%	50%	57%
Total	-	-	288	293	297	270	-	-	106	96	102						
Notes: - = n.d.																	
*Other direct budget beneficiaries at the central level - administrations, agencies, funds, judicial bodies ...;																	
**OOSO – The pension and disability insurance fund of the Republic of Serbian, Republic fund of health insurance and National employment service.																	
Sources: Authors' construct based on (Republika Srbija Ministarstvo finansija 2017), (Republika Srbija Ministarstvo finansija 2018) (Republika Srbija Ministarstvo finansija 2019) (Republika Srbija Ministarstvo finansija 2020), (Republika Srbija Ministarstvo finansija 2021), (Republika Srbija Ministarstvo finansija 2022),																	

The scope of the audit is primarily analyzed according to the scope of the internal auditing of the budget by categories of given entities. The results presented in Table 5 show most of the budget expenditures occur in entities with functional internal auditing.

Table 4. The scope of re budget of public entities audited by internal auditors

(In percent of realized budget)	2018	2019	2020	2021
Ministries with administrative bodies in the composition				
Other direct budget beneficiaries at the central level	93	87	93	94
OOSO		100	100	100
AP Vojvodina	-	100	100	84
Cities	49	86	86	87
Municipalities	24	22	26	22
Public enterprises at the central level (in percent of total income)	83	85	84	84

Source: Authors' construct, based on the (Republika Srbija Ministarstvo finansija 2019), (Republika Srbija Ministarstvo finansija 2021), (Republika Srbija Ministarstvo finansija 2021), (Republika Srbija Ministarstvo finansija 2022).

Although the data on the assessment of the quality of internal auditing work is not available, an average number of internal auditors by public entities raises skepticism about its quality (Table 6).

Table 5. The number of internal audit functions and internal auditors in the Serbian public sector

Year	The number of public sector entities				Average number of internal auditors by entity
	With normatively established internal audit function	With functionally established internal audit function	The number of proposed positions	The number of actual positions	
2016*	195	-	526	417	2.1
2017*	220	-	595	445	2.0
2018*	242	-	591	483	2.0
2019**	263	187	632	485	1.8
2020**	324	202	714	526	1.6
2021**	359	211	728	538	1.5

Note: - = n.d.

Sources: Authors' construct, based on * (Republika Srbija Ministarstvo finansija 2018) and ** (Republika Srbija Ministarstvo finansija 2022).

The data in the table above reveal that the average number of internal auditors by a public entity is between 1,5 and 2,1, with the continually decreasing trend. The average number of internal auditors at the central level, presented in Table 7, is above average for the entire public sector. Thus, the decreasing trend may be explained by the increase in the number of entities that establish internal audit functions with one or two internal auditors in the internal audit function.

Table 6. Established internal audit functions and proposed and actual number of internal auditors in public entities at the central level in 2021

Type of entity	Number of internal audit function		Number of auditors		Average number of internal auditor	
	Normatively established	Functionally established	Proposed	Actual	Proposed	Actual
Ministries with administrative bodies in the composition	23	19	106	67	4,6	3,5
Other direct budget beneficiaries at the central level	23	18	45	39	2,0	2,2
OOSO	4	4	32	29	8,0	7,3
Public enterprises at the central level	29	21	121	83	4,2	4,0
Cities and municipalities	79	40	146	100	1,8	2,5
Public enterprises at the local level	84	46	252	184	3,0	4,0

Sources: Authors construct based on * (Republika Srbija Ministarstvo finansija 2020), ** (Republika Srbija Ministarstvo finansija 2022).

During its regular audit process, State audit institution in Serbia (SAI) examines internal audit function. Auditees are the direct and indirect beneficiaries of the budget funds, beneficiaries of funds of organizations of mandatory social insurance, the public enterprises, units of territorial autonomy and local self-government, the National Bank of Serbia in the part relevant to use of public funds, and all other users of public funds (State Audit Institution 2019).

Table 7. The status of internal audit function in audited entities

	2016	2017	2018	2019	2020	2021	2022
Number of entities subject to internal audit	162	200	150	158	173	216	212
Functional internal audit	17%	20%	22%	43%	43%	41%	36%
Formaly established but not functional	8%	4%	5%	11%	3%	4%	7%
No internal audit function	75%	77%	73%	46%	54%	55%	57%
Total	100%	100%	100%	100%	100%	100%	100%

Source: Authors construct based on the data presented in the State Audit Institution Annual Reports on Operations for the referred year.

Professional competencies of internal auditors

To comply with the International standards for the professional practice of internal auditing, internal auditors must obtain appropriate professional designation and possess or obtain the knowledge, skills and abilities to perform their responsibilities successfully (The Institute of internal auditors 2017). Funding for training and professional development should be included in the internal audit budget, i.e. provided by the organizations. Training opportunities may include enrolling in courses, working with a mentor, or being assigned new tasks under supervision during an engagement. Membership in a professional organization is also beneficial for maintaining internal audit knowledge on a day-to-day basis.

According to the regulation of internal auditing applied in the public sector of the Republic of Serbia, the duty of internal auditors is to improve their knowledge, skills, and other abilities through continuous professional development. The Rulebook on professional training of certified internal auditors in the Serbian public sector prescribes the areas and forms of professional training of authorized internal auditors in the public sector and criteria for recognizing professional training (Republika Srbija, Ministar finansija 2019). The Ministry of Finance CHU publishes the Record of professional training of certified internal auditors in the Serbian public sector. The records show that only fifty percent of public sector internal auditors obtain continual professional education, and subsequently

maintain their professional designation. The summary of these records is presented in Table 9 (Republika Srbija Ministarstvo finansija 2021).

The number of public sector internal auditors who are the members of the most influential professional organization is presented in the annual reports of the IIA Serbia (Udruženje internih revizora Srbije n.d.). These figures show that only ten percent of public sector internal auditors are members of this professional organization.

Table 8. Professional competencies of internal auditors in the public sector

Year	The number of internal auditors	The number of internal auditors who reported results on their continuing professional education***	The number of certified public sector internal auditors who are the members of the IIA Serbia****
2016*	417	-	30
2017*	445	-	29
2018*	483	-	71
2019**	485	-	50
2020**	526	251	58
2021**	538	267	53
2022.	-	268	-

Source: Authors' construct based on * (Republika Srbija Ministarstvo finansija 2019), ** (Republika Srbija Ministarstvo finansija 2022), *** (Republika Srbija Ministarstvo finansija 2021), **** (Udruženje internih revizora Srbije n.d.)

Conclusion and recommendations

The aim of the study is to examine the development of the internal audit function and its capabilities to effectively carry out its role in the public sector of the Republic of Serbia following the opening of EU Chapter 32 - Financial Control, in December 2015.

Despite the advanced normative regulation, operating capabilities of the internal audit function in the public sector are in the initial phase. This conclusion is based on two results. The first is that the average number of auditors in public entities continually decreases, from 2.1 in 2016 to 1.5 in 2021. The number of public entities that have established internal audit functions continually increases, but the actual number of auditors in these entities varies between 1 and 2. It is hard to believe that such a small number of internal auditors can comply with international internal audit standards. Analysis of the qualifications of public sector internal auditors reveals that about half of them do not have access to continual professional education, which is of the utmost importance for qualified professionals. Moreover, just ten percent of public sector internal auditors are

members of authoritative professional organization IIA Serbia and majority of them have no access to the cheapest source for continual professional education.

The research finds an increase in awareness of the value of internal auditing since the opening of the EU Chapter 32. The analysis of irregularities in the functioning of internal control systems reveals that the greatest average number of irregularities occur at the local level, in entities with the least developed internal audit function. The least irregularities occur at the central level and public entities owned by the central government, with the functional internal audit function. We conclude that a key public sector challenge is to ensure appropriate internal audit at the local level.

The overall conclusion is that internal audit function, regardless of its well-done normative regulation, has not significantly improved its capabilities to effectively carry out its role in the Serbian public sector since the opening of the EU Chapter 32 – Financial control.

Based on the findings enumerated above, the following are some recommendations that will improve the capability of internal audit functions in performing their roles and responsibilities: The first one refers to the promotion of compound internal audit function with more auditors, whereas internal audit staff is concentrated at one point and performs internal auditing for more entities. The second one refers to providing adequate resources and incentives for public sector internal auditors for their intensive continual professional education.

Literature

1. Državna revizorska institucija. 2019. *Izveštaj o radu Državne revizorske institucije za 2018. godinu*. Beograd: Državna revizorska institucija.
2. Enofe, A. O., C. J. Mgbame, V. E. Osa-Erhabor, and A. J. Ehiorobo. 2013. "The Role of Internal Audit in Effective Management in Public Sector." *Research Journal of Finance and Accounting* 4 (6): 162-168. Accessed 10 2, 2023. <https://iiste.org/journals/index.php/rjfa/article/download/5660/5772>.
3. European Commission. 2015. "Commission staff working document Serbia 2015 report." *EUROPA*. untitled (europa.eu).
4. Government of the Republic of Serbia. 2021. *The Public Financial Management Reform Programme 2021-2025*. Belgrade: Ministry of finance of the Republic of Serbia.
5. INTOSAI and The Institute of Internal Auditors. 2022. "Applying the Three Lines Model In the Public Sector. Applying the Three Lines Model in the Public Sector." theiia.org.

6. Republika Srbija. n.d. *Istorijat odnosa Srbije i EU*. Edited by Ministarstvo za evropske integracije. MEI - Istorijat odnosa Srbije i EU.
7. Republika Srbija Ministarstvo finansija. 2021. "Evidencija o stručnom usavršavanju internih revizora u javnom sektoru." Евиденција о стручном усавршавању интерних ревизора у јавном сектору (mfin.gov.rs).
8. Republika Srbija Ministarstvo finansija. 2020. "Konsolidovani godišnji izveštaj za 2019. godinu o stanju interne finansijske kontrole u javnom sektoru u Republici Srbiji." Centralna jedinica za harmonizaciju, Beograd. Консолидовани годишњи извештај (mfin.gov.rs).
9. Republika Srbija Ministarstvo finansija. 2017. "Konsolidovani godišnji izveštaj za 2016. godinu o stanju interne finansijske kontrole u javnom sektoru u Republici Srbiji." Sektor za internu kontrolu i internu reviziju, Beograd.
10. Republika Srbija Ministarstvo finansija. 2018. "Konsolidovani godišnji izveštaj za 2017. godinu o stanju interne finansijske kontrole u javnom sektoru u Republici Srbiji." Centralna jedinica za harmonizaciju, Beograd. Консолидовани годишњи извештај (mfin.gov.rs).
11. Republika Srbija Ministarstvo finansija. 2019. "Konsolidovani godišnji izveštaj za 2018. godinu o stanju interne finansijske kontrole sektora javne kontrole u Republici Srbiji." Centralna jedinica za harmonizaciju, Beograd.
12. Republika Srbija Ministarstvo finansija. 2020. "Konsolidovani godišnji izveštaj za 2019. godinu o stanju interne finansijske kontrole u javnom sektoru u Republici Srbiji." Centralna jedinica za harmonizaciju, Beograd. Консолидовани годишњи извештај (mfin.gov.rs).
13. Republika Srbija Ministarstvo finansija. 2021. "Konsolidovani godišnji izveštaj za 2020. godinu o stanju interne finansijske kontrole u javnom sektoru u Republici Srbiji." Centralna jedinica za harmonizaciju, Beograd.
14. Republika Srbija Ministarstvo finansija. 2022. "Konsolidovani godišnji izveštaj za 2021. godinu o stanju interne finansijske kontrole sektora javne kontrole u Republici Srbiji." Centralna jedinica za harmonizaciju. Консолидовани годишњи извештај (mfin.gov.rs).
15. Republika Srbija. 2009 ..2021. *Zakon o budžetskom sistemu*. Službeni glasnik Republike Srbije broj 54/29 ...118/21.
16. Republika Srbija, Ministar finansija. 2019. *Pravilnik o stručnom usavršavanju ovlašćenih internih revizora u javnom sektoru*. Službeni glasnik Republike Srbije, broj 15 od 8. marta 2019.
17. State Audit Institution. 2019. "2018 Activity Report - State Audit Institution." *Državna revizorska institucija*. Annual Activity Report 2018.pdf (dri.rs).

18. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) 2013. "COSO Internal Control- Integrated Framework." *Internal Control | COSO*.
19. The Institute of internal auditors. 2017. "Attribute standards." *The Institute of internal auditors*. Standards (theiia.org).
20. The Institute of Internal auditors. 2023. "Globalni standardi interne revizije - Nacrt za javnu raspravu." *The Institute of Internal auditors*. March. iia-global-internal-audit-standards-public-comment-draft-serbian.pdf (theiia.org).
21. The Institute of internal auditors. 2022. "Practice guide: Building an effective internal audit activity in the public sector." *The Institute of internal auditors*. July. Building an Effective Internal Audit Activity in the Public Sector (theiia.org).
22. Udruženje internih revizora Srbije. n.d. "Finansijski izveštaji." Finansijski izveštaji Удружење интерних ревизора Србије | УИРС (uirs.rs).

Datum prijema (Date received): 18.12.2023.

Datum prihvatanja (Date accepted): 24.02.2024.

RAZVOJ MODERNIH DEMOKRATSKIH DRŽAVA I NJIHOVIH POLITIČKIH SISTEMA SA OSVRTOM NA POLITIČKI SISTEM REPUBLIKE SRBIJE

Slobodan Petrović³⁰, Ratko Ljubojević³¹, Andrija Blanuša³²

doi: 10.59864/Oditor12406P

Pregledni rad

UDK: 321.728(497.11)

316.334.3:321

Apstrakt

Identitet jedne države izražava se u njenim spoljašnjim odnosima, isto kao i u njenom unutrašnjem organizovanju, odnosno politici koju sprovodi. Demokratski oformljen politički sistem podrazumeva da je država uspešno organizovana, glavno shvatanje društva su sloboda i pravda, demokratija ne poznaje rat, načela pravde vladaju između grupa, a to znači da svaka grupa sa svojim osobinama ima slobodu da organizuje svoj život i međuodnose sa svim ostalim grupama, mora se negovati pravo nezavisnog razvitka koje je dopuna dužnosti svake grupe ponaosob. U radu je prikazan teorijski okvir izgleda modernih demokratskih država, opisana je savremena praksa iz razvijenih političkih sistema, izraženi su efekti modernog političkog sistema i definisana su tri pristupa procene valjanosti političkog sistema, prikazan je poseban osvrt na politički sistem Republike Srbije. Naučna i društvena opravdanost ovog istraživačkog rada zasniva se na ukazivanju i isticanju faktora koji doprinose većem stepenu demokratije, a manjim klasnim razlikama, što svakako determiniše politički sistem i društvo moderne države, gde Republika Srbija teži da bude.

Ključne reči: moderna država, demokratija, razvoj, politički sistem, društvo

JEL: F52

Uvod

Posmatrano sa naučno-istraživačkog aspekta, demokratija predstavlja najvišu fazu u kojoj se jedno društvo moglo razviti, odnosno demokratija je vrhunac razvitka društvene organizacije u novovekovnom društvu. U svemu ovome dejstvuje jedan

³⁰Docent, dr Slobodan Petrović, Univerzitet MB, Poslovni i pravni fakultet, Teodora Drajzera 27, Beograd, Telefon: +381 62 350 650, E-mail: slobpetrovic@yahoo.de

³¹Vanredni profesor, dr Ratko Ljubojević, Univerzitet Megatrend, Pravni fakultet, Telefon: +381 63 255 125, Bulevar Mihajla Pupina 117, Beograd, E-mail: ratko_ljubojevic@yahoo.com

³²Vanredni profesor, dr Andrija Blanuša, Univerzitet Privredna akademija Novi Sad, Fakultet društvenih nauka, Bulevar umetnosti 2A, Beograd, Telefon: +381 64 2577 575, E-mail: andrijasn3@gmail.com

isti ideal, taj ideal je politička demokratija, jer država je u modernim vremenima postala ne samo „smetnja nad smetnjama”, nego i aktivan pomagač razvitka svojih građana i zakon nije više pre svega zapovest niti kontrola nad zločincima, nego metod za uspostavljanje administrativnih organizacija (Berns, 2010).

Stepene razvoja moderne demokratske države možemo klasifikovati po sledećim zahtevima: mir, sloboda, jednakost, bratstvo, okolina (ekološka neistrošenost) (Nohlen, Schultze, 1992). Herbert Markuze (nem. Herbert Marcuse) smatra da je tolerancija jedan od osnovnih elemenata modernog demokratskog društva i tim povodom on ističe: Zaključak je da bi ostvarivanje cilja tolerancije zahtevalo netoleranciju prema vladajućoj političkoj praksi, stavovima i mišljenjima, te proširenje tolerancije na onu političku praksu, stavove i mišljenja što se osuđuju i potiskuju (Primorac, 1989). Moderne demokratske političke sisteme karakteriše i postojanje sistema koji nije zavisao od ličnosti, dakle postoje zakoni, procedure, forme delovanja i funkcionisanja društva, a ličnost, „vladar“ (ovde je nužno odrediti oblik državnog uređenja), je samo činovnik koji vrši svoju funkciju u mandatu koji mu je poveren i u slučaju volje naroda, narod ga može u svakom trenutku većinom glasova sa te poverene mu funkcije smeniti. Pojedinačna razumna bića mogu da imaju zakone koje su sama stvorila, ali imaju i one koje nisu stvorila; pre nego što je bilo razumnih bića, ona su bila moguća, imala su, dakle, moguće odnose, pa otuda i moguće zakone; pre nego što je bilo donetih zakona, bilo je mogućih odnosa pravičnosti; kazati da nema ničeg pravičnog niti nepravičnog izuzev onog što nalažu ili zabranjuju pozitivni zakoni, znači reći da pre nego što se opiše krug svi poluprečnici nisu bili jednaki (Monteskejje, 2011). Ovo istraživanje ukazuje na stepen razvoja političkih sistema sa demokratskim prefiksom kao imperativom današnjeg vremena, kao što i nastoji da praktično pomogne unapređenju postojećeg političkog sistema Republike Srbije. Zapravo, politički sistem je sveukupna socijalna struktura u onoj meri, u kojoj je ta ista socijalna struktura uključena u procese oblikovanja modernog političkog života.

Karakteristike moderne demokratske države

Karakteristike moderne demokratske države i njenog političkog sistema su predmet interesovanja mnogih teoretičara politike i prava, jer izazov je dati nov pogled, progresivnog karaktera, koji se može implementirati u praksi, i kao rezultat pokazati sveukupni društveni razvitak. Politički model moderne demokratske države sadrži najznačajnije emancipatorske domete i vrednosti viševjekovnog istorijskog razvitka zapadnoevropskih zemalja; u njoj se rezimiraju osnovne tekovine zapadne civilizacije: modernizacija, građansko društvo, pravna država, liberalno-demokratski politički sistem, participativno-demokratska kultura i slično; ove tekovine – vrednosti se uzimaju kao egzistencijalni minimum za civilizovani život ljudi u jednom složenom društvu (Trkulja, 2011). Jedna od bazičnih karakteristika moderne demokratske države trebala bi da bude i nacionalna bezbednost koja garantuje očuvanje teritorijalnog integriteta, što je

sastavni deo identiteta svakog društva. Moderne progresivne demokratije sveta nemaju ovakve izazove, te nesuočene njima, one mogu da ostvaruju svoj ekonomski prosperitet i time jačaju nacionalni integritet. Republika Srbija se po svojim pravno-političkim dostignućima može svrstati u red država koje teže modernom demokratskom životu, ali na tom putu težnje su često demantovane spoljašnjim uticajima koji su krucijalni za stvaranje demokratskog ambijenta svake države. Srbija je aktivna članica NATO programa Partnerstvo za mir, ali do 2007. godine, kada je Narodna skupština donela odluku o proglašenju vojne neutralnosti (Rezolucija Narodne skupštine Republike Srbije 2007. čl. 6), za SAD predstavlja činjenicu da je Srbija razbila homogenost tzv. Zapadnog Balkana u pogledu širenja NATO-a (Božić, 2023). Odavde jasno vidimo uticaj spoljašnjeg faktora na širenje i progres demokratskog rasta jedne države. Jer demokratija je neograničena sloboda, u okviru nacionalne i međunarodne legislative.

Konstituisanje moderne demokratske države sa modernim političkim sistemom je veoma složen i dugotrajan proces, koji nužno podrazumeva prisustvo velikog broja različitih faktora i uslova. Neki od tih faktora i uslova su: oslobađanje ekonomije od tutorstva politike, izgradnja građanskog društva, proces edukativnog stvaranja građanina, postojanje pravne države i vladavine prava, primena načela podele vlasti, postojanje nezavisnog sudstva, nužnost političkog pluralizma, postojanje parlamentarizma, postojanje obostrane odgovornosti (i države, i građanina), slobodni demokratski izbori, sloboda informisanja, zastupljenost participativno-demokratske političke kulture, obavezno postojanje organizacija civilnog društva (Nevladine organizacije).

Savremena praksa razvoja modernih država i političkih sistema u njima

Politički sistem se u praksi ne može odvojiti od države. I država, i politički sistem su sastavni deo istih društvenih odnosa, snaga i procesa. Međutim, država kao klasna organizacija koja štiti interese vladajuće klase aparatom prinude fizičke sile kojim raspolaže je mnogo starija društvena pojava i manje je podložna promenama od političkog sistema, jer državna struktura se menja tek ukoliko dođe do socijalne revolucije, a opet, oblici političkog sistema su podložni promenama čak i posle izbora i smena partija koje su bile promotori određene politike i zagovarači takve ideologije. Ono što je bitno jeste da je politički sistem svake zemlje normativno uređen ustavom, kao najvišim pravnim aktom i temeljnim zakonom iz koga proizilaze i s kojim moraju biti usklađene norme svih drugih nižih pravnih akata. Ono što je pri proučavanju političkih sistema najznačajnije jeste da se u svim delovima društvene organizacije normativno i stvarno nikada u potpunosti ne poklapaju (Duraković, 2007). Profesor dr Božo Žepić, eminentni hrvatski pravnik, sociolog i politikolog smatra da: „Pravo nastoji normirati celokupnu društvenu zbilju i ponašanje svih društvenih subjekata, kao i svakog člana datog društva. Međutim, između normativnog i stvarnog uvek postoje određene razlike, odnosno veća i manja odstupanja. Ovo zato što je državna

norma, u pravilu, nametnuta i prisilna, u odnosu na podanike i druge pravne subjekte, najveći deo političke povesti, kada je promatrano kroz deklaracije i programe njezinih ključnih protagonista, i nije u biti ništa drugo do historija pretvaranja sile u pravo, a pokoravanja u dužnost, sve to radi ostvarivanja posebnog interesa koji se silom natura kao zajednički interes, za koji se onda propisuju i zahteva da bude dobrovoljno poštovan.“

Ako želimo da otkrijemo raskorak između norme i prakse, analizirajući političke sisteme modernih država, moramo imati na umu, da niz političkih pojava i procesa kojima se bavi politička nauka, nije pravno regulisan. Ovde kao primer možemo navesti: razne vrste lobija (lobiranje), ponašanje javnog mnjenja, angažovanje tzv. „grupa za pritisak“ i slično. Da bi se ovaj raskorak naučno proučio i da bi se otkrili indikatori ovakvih pojava, neophodno je (zapravo, prinuđena je) da se politikologija bavi isključivo empirijskim istraživanjima, te da na osnovu dobijenih rezultata u empirijskim istraživanjima, koja nužno moraju biti nezavisna i objektivna, izvede relevantne zaključke. Savremena pravna nauka, posebno posle prodora sociologije i socioloških metoda, do koga je došlo poslednjih decenija, pokušava da u svojim proučavanjima uvek gde može i kada može primenjuje sociološke metode i time se sve više odstupa od svog pretežno ili čak isključivo formalnog, legalističkog, normativnog i institucionalnog pristupa. Nastoji se na razlikovanju onoga što Englezi nazivaju law in books (pravo u knjigama, na hartiji) i law in action (pravo u primeni, u stvarnosti) (Jovičić, 2006). I ovog puta pokazalo se da snaga promena ne leži u volji pojedinca, već isključivo u stvaranju snažnih, politički nezavisnih institucija, koje predstavljaju, figurativno govoreći, mehanizam koji funkcioniše bez obzira na ideju ili ideje pojedinca; ovome u prilog govore politički sistemi Republike Austrije, Francuske, Nemačke i drugih razvijenih zemalja, gde bez obzira na politička dešavanja, sistem funkcioniše, ne parališe se (Ljubojević, Petrović, 2019).

Efekte savremenog političkog sistema, kao i usklađivanje postojećeg raskoraka između teorije i prakse je moguće potražiti u modernizaciji društva, proširenju celokupnog opsega svih ljudskih prava i sloboda, ali i obezbeđivanje poštovanja istih tih prava i sloboda, izgradnja ekonomski stabilnog društva je imperativ svake države, jer jedino ekonomski jaka država može sa velikom sigurnošću da obezbedi sprovođenje proklamovanih prava, težnja ka stvaranju socijalnog kapitala, demokratizaciji, rad na povećanju upravljačke stabilnosti i sposobnosti sistema, kao i rad na stabilnosti i efikasnosti političkog sistema. Treba istaći, da ne zadovoljavaju sve savremene države pomenute kriterijume u jednakoj meri.

Tri pristupa procene valjanosti političkog sistema

U prosuđivanju valjanosti političkog sistema najčešće se koriste tri pristupa: prvi, manje ili više empirijski pristup, drugi u normativnoj, a treći u

nekoj vrsti mešovite empirijsko-normativne ravni. Prvi, manje ili više empirijski pristup najčešće tretira ili interpretira demokratiju u institucionalnim i proceduralnim, a ređe i gotovo uzgredno u supstancijalnim kategorijama – sadržajima. Drugo, demokratija se traži i nalazi uglavnom u institucionalno proceduralnoj ravni politike i političkog sistema. Treće, demokratija se traži i gradi na materijalu koji je stacioniran u krugu zapadnih demokratskih zemalja. Drugi pristup nastoji da prepozna i postavi horizont valorizacije tako da seže iznad empirijske institucionalno – proceduralne ravni i sadrži nešto šire progresivne i humanističke vrednosti. Treći pristup je najprihvaćeniji za valorizaciju političkog sistema, on obuhvata pored demokracije i druge kriterijume valorizacije poput: filozofskih, socijalnih, ekonomskih, širih političkih i etičkih efekata (Vasović, 2008). Usporedno proučavanje savremenih političkih sistema susreće se sa znatnim razlikama pojedinih političkih sistema, prvenstveno u pogledu različite klasne strukture i društveno-ekonomskim uređenjem, zatim tome treba dodati da su neki politički sistemi buržoaski, dok su pak drugi socijalistički. Usporedo proučavanje političkih sistema je nezamislivo bez analize političkih pojava i procesa, u kojoj su jake tendencije etnocentrizma, zatim težnje za ostvarenje nacionalne suverenosti, i možda najopasnije, iznad svega prisutne ideološke netrpeljivosti.

O političkom sistemu Republike Srbije

Republika Srbija i celokupan pozitivno pravni poredak prošli su mnoge reforme, transformacije, procese prilagođavanja, restituisanja, redefinisanja granica, neopravdanih političkih ucena od strane međunarodne zajednice, doživeli smo u jednom veku tri ratne agresije, no ipak smo uspeli da se izdignemo i izgradimo u svakom, pa i u političko-pravnom smislu. Republika Srbija je kandidat za članstvo u Evropskoj Uniji, da li je ova kandidatura ispravan politički potez i koliko je ona realna u pogledu ostvarivanja, a koliko je realna u pogledu postavljanja uslova za ulazak u Uniju, već sa ove vremenske distance možemo da zaključimo. Na vlast u Republici Srbiji vrši se snažan politički uticaj i to je evidentno, u prilog ovoj tezi govori podatak da i vazdušni prostor iznad jedne države pripada toj državi, jer svaka teritorija je trodimenzionalna (tlo, voda, vazdušni prostor). Republika Srbija želi da jača bilateralne odnose sa već dovoljno dokazanom, i po slovenskom, ali i po religioznom pogledu, bliskom Ruskom Federacijom. Međutim, ne može se zanemariti podatak koji nam govori da Republika Srbija najveći procenat izvoza roba i usluga ostvaruje upravo sa EU. Ono što je srpski nacionalni interes, a i put ka samoizgradnji je razvijanje politike podizanja nataliteta, uspostavljanje socijaldemokratskih principa ekonomske politike, i to ukidanjem liberalnog odn. sad već neoliberalnog ekonomskog stava. Prioritet razvoja Republike Srbije trebao bi da bude mobilnost mladih. Mobilnost mladih podrazumeva sposobnost slobodnog i samostalnog zaključivanja, upoznavanja različitosti i samim tim se u individui izgrađuje relevantan sistem vrednosti i sposobnosti racionalne komparacije, koja isključuje političke faktore.

Razvoj informacionih tehnologija, kao prioritet razvoja, podrazumeva donošenje Nacionalne strategije o razvoju informacionih tehnologija, što direktno doprinosi razvoju politiko-pravnog sistema jednog društva. U prilog ovome govori činjenica da je SFRJ osamdesetih godina bila četvrta zemlja sveta po budžetu izdvojenom za ulaganje u razvoj informacionih tehnologija. Izgradnja sistema obrazovanja koji podrazumeva razvoj socijalne inovacije kao imperativa 21. veka. Praktično osposobljavanje učenika i studenata da razumeju i primene sve ono što su kroz sistem obrazovanja usvojili, osnova je Strategije o razvoju mladih, koju takođe treba doneti i praktično implementirati u društveni sistem Republike Srbije. Političko-pravni aspekt uvek je bio odlučujući faktor i stabilnosti, i ekonomske razvijenosti, i međunarodne politike, i nacionalne progresije, međutim, u svakom trenutku društveno svestan pojedinac mora imati na umu da se istorija menja, da se politika prilagođava interesima jačih, da se pravni poredak prilagođava trendovima i potrebama vremena u kome egzistira, samo je ljudski resurs ograničena kategorija, koja ima početak i kraj. Budući da se srpski narod i srpske zemlje nalaze na Balkanu, jednom od strateški najvažnijih regiona sveta, geopolitički način razmišljanja i delovanja su egzistencijalno važni, te upravo na takvom Balkanu srpski prostor je najprostraniji i svojom centralnom pozicijom igra ulogu „balkanskog heartland-a“ (Stepić, 2019).

Politički sistem Republike Srbije suočen je sa nerešenim društvenim problemima, ekonomskom tranzicijom koja traje, uplivom stranog kapitala na domaće tržište roba i radne snage, a istovremeno odlivom radne snage u razvijenije zemlje Evrope i sveta. Srbiji je neophodna politika saradnje i prihvatanja evropskih vrednosti i standarda u oblasti političko-pravnog uređenja države i društva, razvoj demokratije, funkcionisanje pravne države i vladavine prava kao i poštovanje ljudskih prava i osnovnih sloboda deo su zajedničke tradicije prihvaćene od strane svih, ili skoro svih država evropskog kontinenta i predstavljaju nadgradnju ekonomske integracije mirovnog projekta koji se razvija na tlu Evrope od 1951. godine (Petrović, Vasilkov, 2021). Međutim, danas smo svedoci dvostrukih aršina evropske politike, posebno na primeru autonomne pokrajine Kosovo i Metohija, što dodatno determiniše položaj Republike Srbije i njene politike, kako domaće, tako i međunarodne, pa se s razlogom pitamo da li je ovakav evropski politički scenario samo nužda ili viša potreba. Država jednom narodu daje statusno određenje čineći ga nacijom (Bodrožić, 2023). Danas nacionalnu politiku takođe karakteriše nepostojanje odgovornih nosilaca vlasti i stabilnih institucija. A to je ozbiljan društveni hendikep države koja pretenduje da svoj razvoj zasnuje na političkoj korektnosti i poštovanju principa demokratičnosti, decentralizacije, depolitizacije, supsidijarnosti, kao i uvođenja određenih zakonskih regulativa koje bi podrazumevale zabranu bavljenja političkim pozivom svim zaposlenima u javnoj upravi. Jedan od krucijalnih problema sa kojim se srpsko društvo bori (ili pak ga neguje) jeste partokratija. Partokratija u Srbiji može se pratiti u institucionalnoj ravni (Ustav, zakon, izborni sistem), u političkoj kulturi i tradiciji,

ali i u razumevanju politike, više kao zadovoljavanju parcijalnih i ličnih interesa, a manje kao oblikovanju javnog dobra (Orlović, 2021). Set zakona koji bi podrazumevao promene u pravosudnom, obrazovnom, privrednom, medijskom, urbanističkom i svim vitalnim segmentima legislativnog korpusa neophodan je novom demokratskom društvu Republike Srbije.

Značaj razumevanja države i političkog sistema u procesu stvaranja demokratskog ambijenta

Za razumevanje politike, političkog sistema i svih činilaca političkog sistema, nužno je poznavati državu kao determinantu i predmet prostiranja političke ideologije. Neprestana borba za moć između konkurentskih, nacionalnih država u miru i ratu stvorila je najveće izgledе kapitalizmu u novo doba na Zapadu; država je morala da se takmiči za pokretljiv kapital koji joj je propisivao uslove pod kojima će joj pomoći da dođe do moći; iz prinudno stvorenog saveza između nacionalne države i kapitala izrastao je nacionalni građanski stalež, buržoazija, u modernom smislu reči; dakle, zatvorena nacionalna država je ta koja kapitalizmu garantuje izgledе za opstanak; dokle god ona ne ustupi mesto jednom svetskom carstvu, kapitalizam će trajati (Veber, 2014). Politički sistem je osnova opredeljenja društva, on je orijentir društvenog kretanja, te koliko god država stvarala politički sistem (misli se na narod kao osnovni element države), toliko i sam politički sistem utiče ideološko-institucionalnim instrumentima na definisanje kontura države. Osnivač moderne sociologije, tvorac sociologizma, David Emil Dirkem smatra, da sve do početka 19. veka većinom filozofskih radova vladala je jedna ideja koja je društvenu nauku u korenu sprečavala da se ustanovi. Naime, bezmalo svi ti teoretičari politike videli su u društvu ljudsko delo, plod veštine i refleksivnog mišljenja. Po njima, ljudi su stali da žive zajedno zato što su našli da je to korisno i dobro; bila je to veštačka tvorevina koju su smislili kako bi malčice poboljšali svoj položaj. Nacija, dakle, ne bi bila prirodni proizvod, poput organizma ili biljke koja se rađa, raste i razvija zahvaljujući unutrašnjoj nužnosti, već bi pre nalikovala onim mašinama koje prave ljudi i čiji su svi delovi sastavljeni shodno prethodno zamišljenom planu. Ako su ćelije od kojih je sačinjeno telo odrasle životinje postale ono što jesu, to je stoga što je u njihovoj prirodi bilo da to postanu (Dirkem, 2007). Dakle, politički sistem se definiše po unapred utvrđenim ideološkim (teorijskim) pravilima, u interakciji sa činocima političkog realiteta on se prilagođava i prilagođava društvu, te u toj sprezi dveju dejstava nastaje ono što mi danas nazivamo političkim sistemom. Iz ove tvrdnje može se izvući jedinstven zaključak, a to je da, politički sistem nastaje onog trenutka kad nastane i identifikovano, nacionalno, suvereno, međunarodno priznato, teritorijalno omeđeno, simbolima ukrašeno, pravno, institucionalno, formalno priznato društvo. Prof. dr Radomir D. Lukić govori o dva lica politike, naime, on razdvaja politiku kao nauku, i politiku kao veštinu. Nesumnjivo je da je politika nauka sa elementima veštine. Ono što se uzima kao predmet politike jeste celokupan politički proces, koji je po svojoj prirodi vrlo složen i dinamičan, pa ga

je stoga teško planski organizovati i teorijski prognostički voditi, nego, iz akcije i reakcije dobijene posledice smatrati esencijalnim proizvodom političkog sistema kroz koji se sprovodi pomenuta politika. Unutar svakog političkog sistema odvija se politički proces ili društveno politički proces, preciznije definisano. Pod društveno političkim procesom podrazumeva se celokupan politički proces koji se vrši u društvu, tj. povezano delovanje političkih delatnosti političkih subjekata, koje, u celini uzeto, usmerava kretanje društva u jednom određenom pravcu, prvenstveno pomoću države. U središtu političkog procesa se nalazi država. Delatnost državnih subjekata vrši se kroz političke procese, sprovođenjem državne vlasti, što znači da politički subjekti vrše i određene političke delatnosti kojima teže da usmere društvo u određenom pravcu i bez neposrednog cilja (Lukić, 1995). Danas demokratija ima više svojih oblika i kao takva ona je podložnija uticajima koji bilo da su unutrašnje ili spoljašnje prirode ograničavaju slobodu, a to automatski znači da anuliraju postojanje jednakih prava svih. Odatle se može jasno zaključiti da sva ograničenja koja kao takva postoje pred svakim modelom demokratije neposredno dovode u pitanje i opšti opstanak demokratije uopšte. Činjenica da od postanka demokratije pre dve i po hiljade godina do danas građani sve manje neposredno odlučuju, u budućnosti može dovesti do uspostavljanja virtualne demokratije zasnovane na upotrebi interneta u izbornim i drugim aktivnostima, što koliko sprečava neke dosadašnje oblike manipulacije od kojih su patila i sva demokratska društva, isto toliko otvara i neke nove, još opasnije mogućnosti visoko sofisticiranih i tehnologiziranih oblika manipulacije (Simeunović, 2022).

Zaključak

Osnovno obeležje svakog savremenog političkog sistema trebala bi da bude težnja ka klasnoj borbi. Klasna borba je trajno i bitno obeležje klasnog društva, kao antagonističkog društva. Ona je njegova dinamička snaga. Ali iz klasne borbe, kako su utvrdili Marks i Engels u Manifestu komunističke partije mogu nastupiti dva istorijska rezultata: 1) Progresivna promena postojećeg društvenog i političkog sistema, promena u odnosima moći klasa u sukobu koja takođe izaziva proširenje ljudske emancipacije i 2) Propast obe osnovne klase u sukobu i istorijsko nezadovoljstvo društva (Tadić, 2007).

Ono što mora biti zajedničko svim savremenim političkim sistemima, svake zemlje koja je normativno uređena ustavom, jeste činjenica da je svaka zemlja uređena ustavom kao najvišim pravnim aktom, sa najvećom pravnom snagom, iz koga proizilaze i moraju biti u skladu svi zakoni i uredbe jedne zemlje i da se ustav u potpunosti ima poštovati, to je ključna odlika savremenog političkog sistema svake države. Prosperitetan politički sistem treba da ima neko šire i solidnije filozofsko, pre svega ontološko-gnoseološko i antropološko-etičko utemeljenje. Valja imati u vidu da naše anticipacije i projekti, kao sastavni deo

političkog bitisanja i delovanja, zavise velikim delom od naših sazajnih mogućnosti i svesti o njima i o prirodi čoveka uopšte (Vasović, 2008).

Politika je ona suštastvena spona između pozitivnog prava, prirodnog prava, etike, filozofije, kulture, tradicije, logike, metafizike, ekonomije i sociologije. Razumevanje politike je krucijalna vrlina svakog mislećeg bića, te se ona kao uzvišena disciplina prvenstveno javlja u misaonim procesima intelektualnih ljudi, ne samo današnjice, već je ovo njeno svojstvo postalo identitet svakog vremena i ljudi koji tom vremenu pripadaju. Ako bismo rekli da je politika učenje o dobrom i pravdom, onda smemo da tvrdimo da je ona kao takva nastavak etike. Mesto i uloga čoveka u svakom trenutku ovozemaljskog postojanja srž je ideje političkog progresa civilizacije i sam proces za posledicu ima stvaranje političkog sistema. Politički sistem je osnova opredeljenja društva, on je orijentir društvenog kretanja, te koliko god država stvarala politički sistem (misli se na narod kao osnovni element države), toliko i sam politički sistem utiče ideološko-institucionalnim instrumentima na definisanje kontura države.

Politički sistem nije samo sistem pravnih (zakonskih) propisa, već je to znatno složeniji sistem koji podrazumeva učešće svih agenasa društvenih procesa i njihove interakcije. Aristotel je smatrao da zakon nema mogućnost da stvara moć bez navike, jer kako on tvrdi, zakon i nije ništa drugo do „opšti običaj“. S toga je politički sistem složen skup svih aktera društvenog života i samog društva, unutar određene teritorije, pa se na osnovu takvog interakcijskog odnosa i definiše priroda političkog sistema.

Čovek je društveno biće koje i kad je sam, nije sam, jer i onda je deo društva, kao šireg sistema kojem pripada, dakle, čovek je po prirodi upućen da živi u društvu, odnosno državi, jer je država klasna organizacija koja je nastala na određenom stepenu razvoja ljudskog društva. Cilj politike zato treba da bude stvaranje opšteg Dobra kao vrhovne socijalne vrednosti. Predmet politike trebalo bi da budu plemenitost i pravdom, a u središtu političke nauke bi trebalo da bude društvo, odnosno država.

Politika je sredstvo pomoću kojeg se šire i manifestuju ideje, a ideje implementiraju u ideologiju, a ideologija zahvaljujući masama sprovodi u realnost – tj. stvara politički poredak – determinanta je svakog sistema, jer bez političke ideologije nema političkog sistema, kao i obrnuto, bez političke ideologije nema politike koja determiniše politički sistem. Stvaranje političkog sistema je planiran i često, iz istorijskih, ekonomskih, militarnih, lukreativnih, strateških ciljeva koncipiran i vremenski unapred osmišljen proces, koji gotovo uvek ima geopolitičke ciljeve, koji treba da ostvare izvesne interese. Makijaveli, a posebno Hegel, smatraju da je politička teorija u interakciji između onih koji vladaju i onih nad kojima se vlada. Da bi postojala politika, neophodno je da postoji sloboda, a to znači da postoji jednakost između onog što je politički ideal i etička vrednost.

Ključni faktori koji utiču na progresivni razvoj svakog političkog sistema, pa i političkog sistema Republike Srbije, jesu: zavisnost konkretnog političkog sistema od spoljašnje i unutrašnje politike zemalja u regionu, stepenom demokratskog razvoja zemlje, i treće, a možda najznačajnije – od stanja međunarodnih odnosa u bližem i širem okruženju.

Za svaki politički sistem od vitalnog značaja je uloga političke, ekonomske, socijalne i kulturne razvijenosti zemlje. Ono što je zajedničko svim savremenim teoretičarima političkih sistema jeste tvrdnja da je politički sistem složena strukturno-funkcionalna celina koja se temelji na interakciji društva i političkog poretka (Blanuša, Vasilkov, Petrović, 2020). Politika je uvek kreirana, ukoliko govorimo o nacionalnoj politici, bez obzira da li ima primese levičarskog ili desničarskog orijentacionog opredeljenja, ekonomskim (monetarnim) kapitalom. Samo marionetske politike ne moraju da imaju stabilnu ekonomiju, već finansiranje takvih politika isključivo se vrši putem inostranih fondova i drugih izvora materijalne moći, koji za uzvrat traže odricanje od nacionalnog suvereniteta, a to uključuje i odricanje od monetarne politike. Ekonomske prilike jedne države direktno i bezuslovno utiču na socijalni status društva, stvara se, u zavisnosti od politike koja se vodi i koja dobija većinu (u parlamentarnim demokratijama) socijalna slika društva, koja može imati niz različitih oblika, tako možemo govoriti o državi blagostanja, ali i o državi državnih kuhinja i velike socijalne različitosti unutar društva, što implicira stvaranje ekstremno bogatih i ekstremno siromašnih, a takva vrsta polarizacije društva nije i nikad neće biti dobar oblik društvene organizacije. Društvena organizacija utiče na održivost određene političke ideologije, a svi ti interakcijski procesi stvaraju kulturu jednog društva. Kultura je uvek najčistije ogledalo društva. Kultura je instrument za merenje ideološke gladi, korumpcijske prisutnosti, plaćeničke politiziranosti, socijaldemokratske cenjenosti, građanske svesti, obrazovne snage pojedinca i akademske kontrole, analize i sposobnosti kreiranja budućih političkih procesa.

Dakle, možemo reći da je politički sistem skup međusobno povezanih činilaca u političkoj sferi društva i da je on samo jedan od niza podsistema u sistemu globalnih društvenih odnosa. Deetatizacija i demokratizacija društva moraju imati za cilj da kroz univerzitetski definisan edukativni proces sve društvene pojave i promene teorijski obrazlože, kritički ocene, i da svim tim pojavama i promenama pronađu smisao i perspektive daljeg razvoja. Nužni preduslov za stvaranje akademske i naučne afirmacije političkih sistema jeste određenje pojma i strukture političkog sistema, ravnomerno izučavanje njegove teorije i prakse, ali i prevazilaženje dogmatskog pozitivizma i apologetike, kao i nihilističkog subjektivizma uz rapidno i neselektivno podizanje kulture ljudi. Zapravo, politički sistem je sveukupna socijalna struktura u onoj meri, u kojoj je ta ista socijalna struktura uključena u procese oblikovanja modernog političkog života.

Literatura

1. Blanuša A., Z. Vasilkov, S. Petrović. 2020. „Pravno-politički aspekti upravljanja državom u 21. veku“, Politička revija. Institut za političke studije, Beograd: 268 DOI: <https://doi.org/10.22182/pr.6312020.10>.
2. Bodrožić Đ. 2023. „Uloga države u oblikovanju i zaštiti nacionalnog identiteta, Srpska politička misao 2. Institut za političke studije, Beograd: 100-103
3. Božić S. 2023. „Uticaj velikih sila na nacionalne interese Republike Srbije“, Srpska politička misao 3. Institut za političke studije, Beograd: 198 DOI: <https://doi.org/10.5937/spm81-45774>
4. Delajl S. B. 2010. Politički ideali. Pravni fakultet Univerziteta u Beogradu, Beograd: 221
5. Dirkem E. 2007. Društvo je čoveku bog. Institut za sociološka istraživanja. Filozofski fakultet. Beograd: 16
DOI: <https://doi.org/10.22182/spm.6532019.9>
6. Duraković N. 2007. Uporedni politički sistemi. Pravni fakultet Univerziteta u Sarajevu, Sarajevo: 44
7. Jovičić M. 2006. Ustavni i politički sistemi. JP Službeni glasnik i Pravni fakultet Univerziteta u Beogradu, Beograd: 567-568
8. Lukić D. R. 1995. Politička teorija države. Zavod za udžbenike i nastavna sredstva, Beograd: 137-138
9. Ljubojević R., S. Petrović. 2019. Ključni faktori koji utiču na razvoj političkog sistema Republike Srbije. Institut za političke studije, Srpska politička misao 3. Beograd: 225
10. Monteskje. 2011. O duhu zakona. Zavod za udžbenike, Beograd: 11-12
11. Nohlen D., R. O. Schultze. 1992. Pipers Wörterbuch zur Politik I, München – Zürich: 132
12. Orlović S. 2021. „Političke partije u Srbiji između partokratije, evropeizacije i demokratizacije, Zbornik radova Srpski izazovi u svetu globalnih trendova treće decenije 21. veka. Fondacija Konrad Adenauer Beograd u saradnji sa Školom političke ekologije Zasavica Sremska Mitrovica, Beograd: 41
https://www.researchgate.net/publication/356633727_POLITICKE_PARTIJE_U_SRBIJI_IZMEDU_PARTOKRATIJE_EVROPEIZACIJE_I_DEMOKRATIZACIJE
13. Petrović S., Z. Vasilkov. 2021. „Pristupanje Republike Srbije Evropskoj uniji – proces bez kraja, Politička revija. Institut za političke studije, Beograd: 194-195 DOI: <https://doi.org/10.22182/pr.6822021.8>
14. Primorac I. 1989. O toleranciji - Rasprave o demokratskoj kulturi. Filip Višnjić, Beograd: 389
15. Simeunović D. 2022. Politika kao umetnost iluzije. Prometej, Matica Srpska, Centar za kulturne integracije, Novi Sad: 275
16. Stepić M. 2019. Srpski politički obrazac. Catena mundi, Beograd: 360-361

17. Tadić Lj. 2007. Nauka o politici. Zavod za udžbenike Beograd i JP Službeni glasnik Beograd, Beograd: 97
18. Trkulja J. Politički sistem (rider). 2011. Pravni fakultet Univerziteta u Beogradu, Beograd: 77
19. Vasović V. 2008. Savremene demokratije I. JP Službeni glasnik, Beograd: 132-133
20. Veber M. 2014. Država. Mediterran publishing, Novi Sad: 31

Datum prijema (Date received): 08.12.2023.

Datum prihvatanja (Date accepted): 17.02.2024.

DEVELOPMENT OF MODERN DEMOCRATIC STATES AND THEIR POLITICAL SYSTEMS WITH REFERENCE TO THE POLITICAL SYSTEM OF THE REPUBLIC OF SERBIA

Slobodan Petrović³³, Ratko Ljubojević³⁴, Andrija Blanuša³⁵

Abstract

The identity of a state is expressed in its external relations, as well as in its internal organization, i.e. the policy it implements. A democratically formed political system implies that the state is successfully organized, the main understanding of society is freedom and justice, democracy does not know war, the principles of justice rule between groups, which means that each group with its own characteristics has the freedom to organize its life and relations with all others groups, the right of independent development must be nurtured, which complements the duties of each individual group. The paper presents the theoretical framework of the appearance of modern democratic states, describes the contemporary practice from developed political systems, expresses the effects of the modern political system and defines three approaches to assessing the validity of the political system, shows a special review of the political system of the Republic of Serbia. The scientific and social justification of this research work is based on pointing out and highlighting the factors that contribute to a greater degree of democracy and less class differences, which certainly determines the political system and society of a modern state, where the Republic of Serbia aspires to be.

Keywords: modern state, democracy, development, political system, society

JEL: F52

Introduction

Seen from a scientific and research point of view, democracy represents the highest stage in which a society could develop, that is, democracy is the peak of the development of social organization in modern society. The same ideal is at work in all of this, that ideal is political democracy, because in modern times the state has become not only a "distraction on top of distractions", but also an active

³³Docent, Dr. Slobodan Petrović, MB University, Faculty of Business and Law, Teodora Drajzera 27, Belgrade, Phone: +381 62 350 650, E-mail: slobpetrovic@yahoo.de

³⁴ Associate Professor, Dr. Ratko Ljubojević, Megatrend University, Faculty of Law, Phone: +381 63 255 125, Bulevar Mihajla Pupina 117, Belgrade, E-mail: ratko_ljubojevic@yahoo.com

³⁵Associate Professor, Andrija Blanuša, Ph.D., University of the Academy of Economics, Novi Sad, Faculty of Social Sciences, Boulevard of the Arts 2A, Belgrade, Phone: +381 64 2577 575, E-mail: andrijasn3@gmail.com

helper of the development of its citizens, and the law is no longer primarily a command or control over criminals, but a method for the establishment of administrative organizations Burns 2010).

We can classify the stages of development of a modern democratic state according to the following requirements: peace, freedom, equality, fraternity, environment (ecological integrity) Nohlen Schultze 1992). Herbert Marcuse (German: Herbert Marcuse) believes that tolerance is one of the basic elements of a modern democratic society and on this occasion he points out: The conclusion is that achieving the goal of tolerance would require intolerance towards the ruling political practice, attitudes and opinions, and the extension of tolerance to that political practice attitudes and opinions that are condemned and suppressed Primorac 1989). Modern democratic political systems are characterized by the existence of a system that does not depend on the personality, so there are laws, procedures, forms of action and functioning of the society, and the personality, the "ruler" (here it is necessary to determine the form of state organization), is only an official who performs his function in the mandate entrusted to him and in the case of the will of the people, the people can at any time remove him from the office entrusted to him by majority vote. Individual rational beings may have laws of their own making, but they also have laws of their own making; before there were rational beings, they were possible, therefore had possible relationships, and hence possible laws; before there were laws, there were possible relations of equity; to say that there is nothing just or unjust except what is ordered or forbidden by positive laws, means to say that before the circle was described all the radii were not equal Montesquieu 2011). This research points to the degree of development of political systems with a democratic prefix as an imperative of today's time, as well as tries to practically help the improvement of the existing political system of the Republic of Serbia. In fact, the political system is an overall social structure to the extent that this same social structure is involved in the processes of shaping modern political life.

Characteristics of a modern democratic state

The characteristics of a modern democratic state and its political system are the subject of interest of many theorists of politics and law, because the challenge is to give a new view, of a progressive character, which can be implemented in practice, and as a result show the overall social development. The political model of a modern democratic state contains the most significant emancipatory scope and values of the centuries-old historical development of Western European countries; it summarizes the basic achievements of Western civilization: modernization, civil society, rule of law, liberal-democratic political system, participatory-democratic culture and the like; these acquired values are taken as the existential minimum for the civilized life of people in a complex society Trkulja 2011). One of the basic characteristics of a modern democratic state

should be national security, which guarantees the preservation of territorial integrity, which is an integral part of the identity of every society. The modern progressive democracies of the world do not have these challenges, and without facing them, they can realize their economic prosperity and thereby strengthen national integrity. According to its legal and political achievements, the Republic of Serbia can be classified as one of the countries that aspire to a modern democratic life, but along the way, these aspirations are often denied by external influences that are crucial for the creation of a democratic environment in each country. Serbia is an active member of the NATO Partnership for Peace program, but until 2007, when the National Assembly made a decision on the declaration of military neutrality (Resolution of the National Assembly of the Republic of Serbia 2007, Article 6), for the USA it represents the fact that Serbia broke the homogeneity of the so-called of the Western Balkans in terms of NATO expansion (Božić, 2023). From here we clearly see the influence of external factors on the expansion and progress of the democratic growth of a country. Because democracy is unlimited freedom, within the framework of national and international legislation.

Establishing a modern democratic state with a modern political system is a very complex and long-term process, which necessarily involves the presence of a large number of different factors and conditions. Some of those factors and conditions are: freeing the economy from the tutelage of politics, building a civil society, the process of educational creation of citizens, the existence of the rule of law and the rule of law, the application of the principle of separation of powers, the existence of an independent judiciary, the necessity of political pluralism, the existence of parliamentarism, the existence of mutual responsibility and the state, and the citizen), free democratic elections, freedom of information, representation of participatory-democratic political culture, mandatory existence of civil society organizations (Non-Governmental Organizations).

Contemporary practice of development of modern states and political systems in them

In practice, the political system cannot be separated from the state. Both the state and the political system are an integral part of the same social relations, forces and processes. However, the state as a class organization that protects the interests of the ruling class with the coercive apparatus of physical force at its disposal is a much older social phenomenon and is less subject to change than the political system, because the state structure changes only if there is a social revolution, and again, the forms of the political system are subject to change even after the election and change of parties that were promoters of a certain policy and advocates of such an ideology. What is important is that the political system of each country is normatively regulated by the constitution, as the highest legal act and fundamental law from which they derive and with which the norms of all

other lower legal acts must be harmonized. What is most important when studying political systems is that in all parts of social organization, the normative and the real never completely coincide Duraković, 2007 Professor Dr. Božo Žepić, an eminent Croatian lawyer, sociologist and political scientist believes that: "Law seeks to standardize the entire social reality and the behavior of all social subjects, as well as every member of a given society. However, there are always certain differences between the normative and the real, i.e. larger and smaller deviations. This is because the state norm is, as a rule, imposed and coercive, in relation to subjects and other legal subjects, the largest part of political history, when observed through the declarations and programs of its key protagonists, and is essentially nothing more than the history of turning force into right, and obedience to duty, all this for the purpose of achieving a special interest that is created by the force of nature as a common interest, for which it is then prescribed and demanded to be voluntarily respected."

If we want to discover the gap between norm and practice, analyzing the political systems of modern states, we must keep in mind that a number of political phenomena and processes dealt with by political science are not legally regulated. Here as an example we can cite: various types of lobbies (lobbying), behavior of public opinion, engagement of the so-called "pressure group" and the like. In order to scientifically study this discrepancy and to discover the indicators of such phenomena, it is necessary (in fact, it is forced) that political science deals exclusively with empirical research, and that based on the results obtained in empirical research, which must necessarily be independent and objective, draw relevant conclusions. Contemporary legal science, especially after the penetration of sociology and sociological methods, which has occurred in recent decades, tries to always apply sociological methods in its studies wherever and whenever it can, and thus deviates more and more from its predominantly or even exclusively formal, legalistic, normative and institutional approach. There is an effort to distinguish between what the English call law in books (law in books, on paper) and law in action (law in practice, in reality) (Jovicic, 2006) And this time it was shown that the power of change does not lie in the will of the individual, but exclusively in the creation of strong, politically independent institutions, which represent, figuratively speaking, a mechanism that functions regardless of the individual's idea or ideas; this is supported by the political systems of the Republic of Austria, France, Germany and other developed countries, where regardless of political events, the system functions and does not become paralyzed (Ljubojević, Petrović, 2019)

The effects of the modern political system, as well as the reconciliation of the existing gap between theory and practice, can be found in the modernization of society, the expansion of the entire scope of all human rights and freedoms, but also ensuring respect for those same rights and freedoms, building an economically stable society is an imperative of every state, because only an

economically strong state can with great certainty ensure the implementation of proclaimed rights, striving towards the creation of social capital, democratization, work on increasing the management stability and capabilities of the system, as well as work on the stability and efficiency of the political system. It should be pointed out that not all modern countries satisfy the mentioned criteria to the same extent.

Three approaches to assessing the validity of the political system

In judging the validity of the political system, three approaches are most often used: the first, a more or less empirical approach, the second in a normative approach, and the third in a kind of mixed empirical-normative level. The first, more or less empirical approach most often treats or interprets democracy in institutional and procedural terms, and less often and almost incidentally in substantive categories - contents. Second, democracy is sought and found mainly in the institutional and procedural level of politics and the political system. Third, democracy is sought and built on material that is stationed in the circle of Western democratic countries. The second approach seeks to recognize and set the horizon of valorization so that it reaches beyond the empirical institutional-procedural level and contains somewhat broader progressive and humanistic values. The third approach is the most accepted for the valorization of the political system, it includes, in addition to democracy, other valorization criteria such as: philosophical, social, economic, broader political and ethical effects (Vasović, 2008) The comparative study of contemporary political systems encounters significant differences between individual political systems, primarily in terms of different class structures and socio-economic arrangements, then it should be added that some political systems are bourgeois, while others are socialist. In parallel, the study of political systems is unthinkable without the analysis of political phenomena and processes, in which there are strong tendencies of ethnocentrism, then aspirations for the realization of national sovereignty, and perhaps the most dangerous, above all, ideological intolerance.

About the political system of the Republic of Serbia

The Republic of Serbia and the entire positive legal order have gone through many reforms, transformations, processes of adjustment, restitution, redefinition of borders, unjustified political blackmail by the international community, we have experienced three wars of aggression in one century, but we still managed to rise and build in each one. and also in the political-legal sense. The Republic of Serbia is a candidate for membership in the European Union, whether this candidacy is a correct political move and how realistic it is in terms of achieving it, and how realistic it is in terms of setting the conditions for joining the Union, we can already conclude from this time distance. There is a strong political influence on the government in the Republic of Serbia and this is evident, in

support of this thesis is the fact that the airspace above a country belongs to that country, because every territory is three-dimensional (soil, water, airspace). The Republic of Serbia wants to strengthen bilateral relations with the Russian Federation, which has already been sufficiently proven to be close, both from a Slavic and a religious point of view. However, we cannot ignore the fact that the Republic of Serbia exports the highest percentage of goods and services to the EU. What is the Serbian national interest, and the path to self-building, is the development of a policy of raising the birth rate, the establishment of social democratic principles of economic policy, and the abolition of a liberal or, now of a neoliberal economic stance. The priority of the development of the Republic of Serbia should be the mobility of young people. The mobility of young people implies the ability to make free and independent conclusions, to get to know diversity, and thus a relevant system of values and the ability of rational comparison is built in the individual, which excludes political factors. The development of information technologies, as a development priority, implies the adoption of the National Strategy on the Development of Information Technologies, which directly contributes to the development of the political and legal system of a society. This is supported by the fact that in the 1980s SFRY was the fourth country in the world in terms of the budget allocated for investment in the development of information technologies. Building an education system that includes the development of social innovation as an imperative of the 21st century. Practical training of pupils and students to understand and apply everything they have adopted through the education system is the basis of the Youth Development Strategy, which should also be adopted and practically implemented in the social system of the Republic of Serbia. The political-legal aspect has always been a decisive factor in stability, economic development, international politics, and national progress, however, at every moment a socially conscious individual must keep in mind that history changes, that politics adapts to the interests of the stronger, that the legal order adapts to the trends and needs of the time in which it exists, only the human resource is a limited category, which has a beginning and an end. Since the Serbian people and Serbian countries are located in the Balkans, one of the most strategically important regions of the world, the geopolitical way of thinking and acting are existentially important, and it is precisely in such Balkans that the Serbian space is the most spacious and with its central position plays the role of the "Balkan heartland" (Stepić, 2019).

The political system of the Republic of Serbia is faced with unresolved social problems, the ongoing economic transition, the inflow of foreign capital into the domestic market of goods and labor, and at the same time the outflow of labor to more developed countries in Europe and the world. Serbia needs a policy of cooperation and acceptance of European values and standards in the field of political and legal organization of the state and society, the development of democracy, the functioning of the legal state and the rule of law, as well as respect

for human rights and fundamental freedoms are part of the common tradition accepted by all, or almost all countries of the European continent and represent the superstructure of the economic integration of the peace project that has been developing on European soil since 1951 (Petrović, Vasilkov, 2021). However, today we are witnessing the double standards of European politics, especially on the example of the autonomous province of Kosovo and Metohija, which additionally determines the position of the Republic of Serbia and its politics, both domestically and internationally, so we rightly wonder if this European political scenario is just a necessity or higher need. The state gives a nation a status determination, making it a nation (Bodrožić, 2023). Today, national politics is also characterized by the absence of responsible power holders and stable institutions. And that is a serious social handicap of a country that claims to base its development on political correctness and respect for the principles of democracy, decentralization, depoliticization, subsidiarity, as well as the introduction of certain legal regulations that would imply a ban on political calling for all public administration employees. Partocracy is one of the crucial problems that Serbian society struggles with (or nurtures). Partocracy in Serbia can be traced at the institutional level (Constitution, law, electoral system), in political culture and tradition, but also in the understanding of politics, more as the satisfaction of partial and personal interests, and less as shaping the public good (Orlović, 2021). A set of laws that would entail changes in judicial, educational, economic, media, urban and all vital segments of the legislative body is necessary for the new democratic society of the Republic of Serbia.

The importance of understanding the state and the political system in the process of creating a democratic environment

In order to understand politics, the political system and all factors of the political system, it is necessary to know the state as a determinant and subject of the spread of political ideology. The constant struggle for power between competing nation-states in peace and war created the greatest prospects for capitalism in the new age in the West; the state had to compete for mobile capital that dictated the conditions under which it would help it come to power; from the forced alliance between the nation-state and capital grew the national civil class, the bourgeoisie, in the modern sense of the word; therefore, it is the closed nation-state that guarantees capitalism its prospects for survival; until it gives way to a world empire, capitalism will continue (Weber, 2014). The political system is the basis of the determination of society, it is a landmark of social movement, and as much as the state creates a political system (we mean the people as the basic element of the state), the political system itself influences the definition of the contours of the state through ideological-institutional instruments. The founder of modern sociology, the creator of sociologism, David Emil Durkheim, believes that until the beginning of the 19th century, most philosophical works were dominated by one idea that prevented social science from being established. Namely, almost all

of these political theorists saw society as a human work, the fruit of skill and reflective thinking. According to them, people stopped living together because they found it useful and good; it was an artificial creation that they came up with in order to slightly improve their position. The nation, therefore, would not be a natural product, like an organism or a plant that is born, grows and develops due to internal necessity, but would rather resemble those machines made by people and all parts of which are assembled according to a previously conceived plan. If the cells that make up the body of an adult animal became what they are, it is because it was in their nature to become so (Durkheim, 2007). Therefore, the political system is defined according to predetermined ideological (theoretical) rules, in interaction with the factors of the political reality it adapts and society adapts, and in this combination of two actions what we call a political system is created today. A unique conclusion can be drawn from this statement, which is that a political system is created at the moment when an identified, national, sovereign, internationally recognized, territorially demarcated, symbolized, legal, institutional, formally recognized society is created. Prof. Dr. Radomir D. Lukić talks about the two faces of politics, namely, he separates politics as a science and politics as a skill. There is no doubt that politics is a science with elements of skill. What is taken as the subject of politics is the entire political process, which by its very nature is very complex and dynamic, and therefore it is difficult to organize it in a planned way and guide it theoretically prognostically, rather, the consequences obtained from action and reaction are considered an essential product of the political system through which implements the mentioned policy. Within each political system, a political process or socio-political process, more precisely defined, takes place. The socio-political process means the entire political process that takes place in society, i.e. the connected action of the political activities of political subjects, which, taken as a whole, directs the movement of society in one specific direction, primarily with the help of the state. At the center of the political process is the state. The activity of state subjects is carried out through political processes, by implementing state power, which means that political subjects also perform certain political activities that aim to direct society in a certain direction and without an immediate goal (Lukić, 1995). Today, democracy has more of its forms and as such it is more susceptible to influences that, whether internal or external in nature, limit freedom, which automatically means that they nullify the existence of equal rights for all. From there, it can be clearly concluded that all the limitations that exist as such before every model of democracy directly call into question the general survival of democracy in general. The fact that since the beginning of democracy two and a half thousand years ago until today, citizens decide less and less directly, in the future may lead to the establishment of a virtual democracy based on the use of the Internet in electoral and other activities, which prevents some previous forms of manipulation from which all democratic societies, it also opens some new, even

more dangerous possibilities of highly sophisticated and technologized forms of manipulation (Simeunović, 2022).

Conclusion

The basic feature of any modern political system should be the tendency towards class struggle. Class struggle is a permanent and essential feature of class society, as an antagonistic society. She is his dynamic force. But from the class struggle, as determined by Marx and Engels in the Manifesto of the Communist Party, two historical results can occur: 1) A progressive change of the existing social and political system, a change in the power relations of the conflicting classes that also causes the expansion of human emancipation and 2) The collapse of both basic classes in conflict and the historical discontent of society (Tadić, 2007)

What must be common to all modern political systems, of every country that is normatively governed by the constitution, is the fact that every country is governed by the constitution as the highest legal act, with the greatest legal force, from which all laws and regulations of a country derive and must be in accordance and that the constitution is fully respected, that is a key feature of the modern political system of any country. A prosperous political system should have a broader and more solid philosophical, primarily ontological-gnoseological and anthropological-ethical foundation. It should be borne in mind that our anticipations and projects, as an integral part of political existence and action, depend to a large extent on our cognitive capabilities and awareness of them and the nature of man in general (Vasović, 2008)

Politics is the essential link between positive law, natural law, ethics, philosophy, culture, tradition, logic, metaphysics, economics and sociology. Understanding politics is a crucial virtue of every thinking being, and as a sublime discipline, it appears primarily in the thought processes of intellectual people, not only today, but this characteristic of it has become the identity of every time and the people who belong to that time. If we were to say that politics is the teaching of the good and the just, then we can claim that as such it is a continuation of ethics. The place and role of man in every moment of earthly existence is the core of the idea of political progress of civilization and the process itself results in the creation of a political system. The political system is the basis of the determination of society, it is a landmark of social movement, and as much as the state creates a political system (we mean the people as the basic element of the state), the political system itself influences the definition of the contours of the state through ideological-institutional instruments.

The political system is not only a system of legal regulations, but it is a much more complex system that involves the participation of all agents of social processes and their interactions. Aristotle believed that law does not have the ability to create power without habit, because as he claims, law is nothing more

than "general custom". Therefore, the political system is a complex set of all the actors of social life and society itself, within a certain territory, so the nature of the political system is defined on the basis of such an interaction relationship.

Man is a social being who, even when he is alone, is not alone, because even then he is a part of society, as a wider system to which he belongs, therefore, man is directed by nature to live in society, i.e. the state, because the state is a class organization that arose on a certain level of development of human society. The goal of politics should therefore be the creation of the general Good as the supreme social value. The subject of politics should be nobility and justice, and the center of political science should be society, that is, the state.

Politics is a means by which ideas are spread and manifested, and ideas are implemented into ideology, and ideology, thanks to the masses, is implemented into reality - i.e. it creates political order - it is the determinant of every system, because without political ideology there is no political system, and vice versa, without political ideology there is no politics that determines the political system. The creation of a political system is a planned and often, from historical, economic, military, lucrative, strategic goals conceived and thought out in advance process, which almost always has geopolitical goals, which should achieve certain interests. Machiavelli, and especially Hegel, believe that political theory is in the interaction between those who rule and those who are ruled. In order for politics to exist, it is necessary for freedom to exist, which means that there is an equality between what is a political ideal and an ethical value.

The key factors that influence the progressive development of any political system, including the political system of the Republic of Serbia, are: the dependence of the specific political system on the external and internal politics of the countries in the region, the degree of democratic development of the country, and thirdly, and perhaps most significantly, on the state of international relations in closer and wider environment.

For any political system, the role of political, economic, social and cultural development of the country is of vital importance. What is common to all contemporary theorists of political systems is the assertion that the political system is a complex structural-functional entity based on the interaction of society and the political order (Blanuša, Vasilkov, Petrović, 2020) Politics is always created, if we are talking about national politics, regardless of whether it has left-wing or right-wing orientation, with economic (monetary) capital. Only puppet policies do not have to have a stable economy, but the financing of such policies is exclusively done through foreign funds and other sources of material power, which in return demand the renunciation of national sovereignty, and this includes the renunciation of monetary policy. The economic conditions of a country directly and unconditionally affect the social status of society, depending on the policy that is conducted and which gets the majority (in parliamentary

democracies), the social image of society is created, which can have a number of different forms, so we can talk about the welfare state, but also in the state of state kitchens and great social diversity within society, which implies the creation of extremely rich and extremely poor, and this kind of polarization of society is not and will never be a good form of social organization. Social organization affects the sustainability of a certain political ideology, and all these interactional processes create the culture of a society. Culture is always the purest mirror of society. Culture is an instrument for measuring ideological hunger, corrupt presence, mercenary politicization, social democratic appreciation, civic awareness, educational power of the individual and academic control, analysis and ability to create future political processes.

Therefore, we can say that the political system is a set of interconnected factors in the political sphere of society and that it is only one of a number of subsystems in the system of global social relations. The destatization and democratization of society must aim to theoretically explain and critically evaluate all social phenomena and changes through a university-defined educational process, and to find meaning and perspectives for further development in all these phenomena and changes. A necessary prerequisite for the creation of an academic and scientific affirmation of political systems is the determination of the concept and structure of the political system, an even study of its theory and practice, but also overcoming dogmatic positivism and apologetics, as well as nihilistic subjectivism, along with the rapid and indiscriminate raising of people's culture. In fact, the political system is an overall social structure to the extent that this same social structure is involved in the processes of shaping modern political life.

Literature

1. Blanuša A., Z. Vasilkov, S. Petrović. 2020. "Legal-political aspects of state management in the 21st century", Political Review. Institute for Political Studies, Belgrade 268 DOI:
2. Bodrožić Đ. 2023. "The role of the state in shaping and protecting national identity, Serbian political thought 2. Institute for Political Studies, Belgrade: 100-103
3. Božić S. 2023. "The influence of great powers on the national interests of the Republic of Serbia", Serbian Political Thought 3. Institute for Political Studies, Belgrade: 198 DOI: <https://doi.org/10.5937/spm81-45774>
4. Delayl SB 2010. Political ideals. Faculty of Law, University of Belgrade Belgrade: 221
5. Durkheim E. 2007. Society is God to man. Institute for Sociological Research. Faculty of Philosophy Belgrade 16 DOI: <https://doi.org/10.22182/spm.6532019.9>
6. Duraković N. 2007. Comparative political systems. Faculty of Law, University of Sarajevo, Sarajevo 44

7. Jovičić M. 2006. Constitutional and political systems. JP Official Gazette and Law Faculty of the University of Belgrade, Belgrade 567-568
8. Lukić DR 1995. Political theory of the state. Institute for textbooks and teaching aids Belgrade 137-138
9. Ljubojević R., S. Petrović. 2019. Key factors influencing the development of the political system of the Republic of Serbia. Institute for Political Studies, Serbian Political Thought 3. Belgrade: 225
10. Montesquieu. 2011. On the spirit of the law. Textbook Institute, Belgrade 11-12
11. Nohlen D., RO Schultze. 1992. Pipers Wörterbuch zur Politik I, München – Zürich: 132
12. Orlović S. 2021. "Political parties in Serbia between partocracy, Europeanization and democratization, Proceedings Serbian challenges in the world of global trends of the third decade of the 21st century. The Konrad Adenauer Foundation Belgrade in cooperation with the School of Political Ecology Zasavica Sremska Mitrovica, Belgrade: 41
https://www.researchgate.net/publication/356633727_POLITICKE_PARTIJE_U_SERBIJI_IZMEDU_PARTOKRATIJE_EVROPEIZACIJE_I_DEMOKRATIZACIJE
13. Petrović S., Z. Vasilkov. 2021. "Accession of the Republic of Serbia to the European Union - a never-ending process", Political Review. Institute for Political Studies, Belgrade: 194-195 DOI: <https://doi.org/10.22182/pr.6822021.8>
14. Primorac I. 1989. On tolerance - Debates on democratic culture. Filip Višnjić, Belgrade 389
15. Simeunović D. 2022. Politics as an art of illusion. Prometheus, Matica Srpska, Center for Cultural Integration, Novi Sad: 275
16. Stepić M. 2019. Serbian political pattern. Catena mundi, Belgrade: 360-361
17. Tadić Lj. 2007. Political science. Institute for textbooks Belgrade and JP Official Gazette Belgrade, Belgrade 97
18. Trkulja J. Political system (rider). 2011. Faculty of Law, University of Belgrade, Belgrade 77
19. Vasović V. 2008. Contemporary Democracies I. JP Official Gazette, Belgrade 132-133
20. Weber M. 2014. State. Mediterran publishing, Novi Sad 31

ZAŠTITA TV FORMATA PUTEM AUTORSKOG PRAVA – MOGUĆNOSTI I DILEME

Milica Njegovan³⁶, Iva Šidanić³⁷

doi: 10.59864/Oditor12407NJ

Pregledni rad

UDK: 347.78:654.197

Apstrakt

TV formati predstavljaju popularan medijski sadržaj, koji privlači veliki broj gledalaca širom sveta. Međutim, njihova pravna nije dovoljno uređena. Osnovnu dilemu u pravnoj teoriji i sudskoj praksi predstavlja mogućnost autorskopravne zaštite TV formata. Cilj ovog rada je da se analizom domaće i inostrane sudske prakse, kao i postojeće literature pokuša utvrditi mogućnost pravne zaštite TV formata kao autorskog dela. Iako su neki sudovi smatrali da se TV format može štiti u celini, uključujući i njegove tehničke elemente, ovo je više izuzetak nego pravilo. Uglavnom se sporno pitanje svodi na elemente koji su kopirani, a tiču se osnovne ideje ili koncepcije TV formata. Ipak, uočava se tendencija na međunarodnom planu ka sve češćem priznavanju autorskopravne zaštite TV formata, ali pod određenim uslovima. Tako, razređenost, originalnost i tipizirana struktura formata koja može biti ponovljena, te način definisanja autorskog dela u zakonodavstvima neki su od elemenata koji utiču na to da li će TV format biti prepoznat i zaštićen kao autorsko delo.

Ključne reči: TV formati, pravna zaštita, intelektualna svojina, autorsko pravo, kreativne industrije

JEL: K11, 034

Uvod

Poslednjih decenija su televizijski formati postali najgledaniji medijski sadržaji, koji privlače veliki auditorijum, kao i oglašivače. Podsećamo na neke od najpoznatijih televizijskih formata (u daljem tekstu: TV formati), koji su emitovani na brojnim TV kanalima širom sveta, kao što su „Veliki brat“, „Survivor“, „X faktor“, „Želite li da postanete milioner“, „The Office“ i drugi.

³⁶ Milica Njegovan, mast., Stručni saradnik, Fakultet tehničkih nauka, Trg Dositeja Obradovića 6, Novi Sad; Doktorand, Pravni fakultet, Univerzitet u Novom Sadu, E-mail: milica.njegovan@uns.ac.rs

³⁷ Dr Iva Šidanić, docent, Fakultet tehničkih nauka, Trg Dositeja Obradovića 6, Novi Sad, E-mail: iva.sidjanin@uns.ac.rs

Industrija TV formata, kao deo kreativnih industrija³⁸, vredi više milijardi dolara (Chalaby, 2012), a televizijske kompanije su uvek otvorene za nove i kreativnije formatirane televizijske sadržaje. Proverene „formule“ programa koji su se dokazali uspešnim na tržištima porekla, licenciraju se i emituju u drugim državama, i to neretko uz manje ili veće modifikacije, kako bi se prilagodile potrebama nacionalnog medijskog tržišta.

Televizijski format se definiše na različite načine. Tako, na primer, međunarodna Asocijacija za prepoznavanje i zaštitu TV formata (u daljem tekstu: FRAPA) opisuje TV format kao „karakterističnu kombinaciju sveobuhvatno opisanih televizijskih elemenata (i novih i uobičajenih, koji mogu ili ne moraju biti zaštićeni kao odvojene stavke intelektualne svojine), raspoređenih na nepromenljiv način u bilo kom materijalnom obliku koji stvara originalnu, ponavljajuću narativnu strukturu” (McKenzie, FRAPA, 2017). TV format se sastoji od „nepromenljivih elemenata u programu koji predstavlja osnovu za varijabilne elemente u pojedinačnim epizodama” (Bechtold, 2013). Moran i Malbon (2006) ističu da format obično uključuje zaplet, osnovnu liniju priče, temu, raspoloženje i dramaturgiju emocija, pravila, redosled događaja, režiju, muziku, grafiku, scenografiju i uputstva za produkcionu emisiju. TV formati su, dakle, sastavljeni od kreativnih, poslovnih i marketinških elemenata. Pored kreativne osnove koju poseduju, uslovljeni su žanrom, tehnologijom i ciljnom publikom programa. Upravo je specifična, jedinstvena kombinacija različitih elemenata ono što privlači gledaoce (Meadow, 1970).

Postoje brojne vrste TV formata, od *game show* programa, preko rijaliti emisija, takmičenja talenata, različitih kvizova i emisija dokumentarne zabave, a u poslednje vreme se proizvode i obrasci serija za globalno tržište. S obzirom na to da mediji masovnog komuniciranja, kako tradicionalni, tako i novi, poseduju velike mogućnosti proizvodnje i plasiranja sadržaja, za očekivati je da će programski formati u budućnosti dobiti nove žanrove i forme.

Međunarodna televizijska industrija definiše TV format kao emisiju koja je prodana na barem jednom stranom tržištu (Schmitt et al., 2005). Međutim, u širem smislu, TV format predstavlja „kalup“ za programski sadržaj, odnosno kombinaciju narativnih elemenata, prepoznatljivu i ponovljivu strukturu, bez obzira na to da li je licencirana i emitovana na stranom tržištu ili ne. Na primer, domaći kviz “Slagalica“ nije prodan na stranom tržištu, ali spada u TV formate. U tom smislu, bez obzira na to da li se radi o TV formatu koji je prodan na stranom tržištu, ili formatu koji je osmišljen i koji se emituje kao TV emisija samo u jednoj državi, ne tako retko, dolazilo je do njihove imitacije, ili kopiranja. Industrija TV

³⁸ Kreativne industrije se definišu kao delatnosti koje se zasnivaju na kreativnosti, veštinama i talentima pojedinca, i koje imaju potencijal za stvaranje bogatstva i radnih mesta pomoću generisanja i eksploatacije intelektualne svojine (Bop Consulting, 2010).

formata je naročito zainteresovana za problem zaštite od međunarodne „krađe“ onoga što smatraju svojim intelektualnim vlasništvom.

Prva varijanta „krađe“ TV formata javlja se u slučaju da stvaralac jednog formata predstavi ideju određenoj medijskoj kompaniji radi saradnje, te ona, nedugo nakon toga, napravi identičan ili veoma sličan program, bez priznavanja autorstva ili plaćanja bilo kakve naknade. U drugom slučaju je moguće da već emitovan TV format „inspiriše“ drugo medijsko preduzeće da plasira isti ili sličan sadržaj pod svojim zaštitnim znakom. Takvih primera je bilo u praksi, o čemu će biti reči u nastavku rada. To su neki od najočiglednijih razloga potrebe pravne zaštite TV formata, kako bi on što duže donosio materijalne koristi emiterima i autorima formata i obezbeđivao visoke rejtinge (Moran, 2004). Međutim, pravna zaštita bilo kog medijskog sadržaja, a posebno TV formata je vrlo složeno pitanje.

Problem sa zaštitom TV formata leži, pre svega, u njegovoj mešovitoj prirodi. Klasičan TV format se sastoji se iz različitih elemenata: osnovnog koncepta, specifične muzike, scenografije, loga, načina prezentacije određenih segmenata programa i slično. Osim toga, sama suština TV formata, kao manje ili više razrađene ideje, odnosno koncepta, dovodila je, a i dalje dovodi do oprečnih presuda sudova.

Kako je TV format sastavljen iz više raznorodnih elemenata (kako u kreativnom tako i u pravnom smislu), mogućnosti njegove pravne zaštite su različite, ali često nedovoljno pouzdane. Osnovni način zaštite za koji se zalažu kreatori TV formata jeste putem prava intelektualne svojine, konkretno autorskog prava. Osim autorskopravne zaštite, druge mogućnosti uključuju pravila o zaštiti konkurencije (kada se suprotno dobrim poslovnim običajima imitacijom stvara zabuna ili opasnost od zabune u privrednom prometu o nekom svojstvu proizvoda ili ako se parazitski iskorišćava tuđi rad ili ugled) (Popović, 2014), zaštite putem pravila o poslovnoj tajni (čime se sprečava zloupotreba *know-how* informacija), putem žiga (čime se štiti naziv ili logo programa) ili zaštite dizajna (za scenografske i dizajnerske elemente). Osim toga, industrija TV formata oslanja se i na vanpravne načine zaštite svog proizvoda.³⁹

Poznato je da mnogi TV formati imaju svoju „produkcijisku Bibliju“, koja sadrži pravila formata i druge ključne informacije o načinu adaptacije TV formata na lokalnim tržištima (Green, 2010). Ona predstavlja određeni „štit“ od plagiranja tuđeg rada, s obzirom na to da je za mnoge kupce sigurnije da kupe TV format sa svim neophodnim podacima kako bi osigurali uspeh i profitabilnost emisije, nego da ga kopiraju. Ipak, krađe i imitacije se i dalje dešavaju, te se stvaraoci TV formata zalažu za njihovu čvršću pravnu zaštitu.

³⁹ Neke od mogućih strategija su brzina izlaska na tržište i premijerno prikazivanje formata, Džentlmenski sporazum, brend, sistem „letećih producenata“, sistem registracije TV formata, i drugo (FRAPA, 2011).

U ovom radu fokus je se na autorskopravnoj zaštiti TV formata, odnosno na osnovnoj dilemi koja postoji u pravnoj teoriji i sudskoj praksi: da li se i pod kojim uslovima TV format može štiti kao autorsko delo. Kako je ovo višeslojni problem, izlaganje ćemo započeti analizom pojma intelektualnog dobra i intelektualne svojine, njenog pravno-političkog opravdanja, a zatim ćemo preći na analizu autorskog prava i sudske prakse, a sve u kontekstu TV formata.

Teorijska razmatranja o TV formatu kao intelektualnom dobru

Stvaranje TV formata predstavlja određeni kreativni proces pojedinca ili grupe ljudi. Utrošak vremena i materijalnih sredstava neophodnih da bi se osmislio TV format, a zatim i proizveo kvalitetan televizijski sadržaj naizgled opravdava posmatranje formata kao duhovne tvorevine vredne pravne zaštite. Zato se kreatori TV formata i televizijska industrija duži niz godina zalažu za njihovu sveobuhvatnu zaštitu, prevashodno putem prava intelektualne svojine.

Pravo intelektualne svojine nastaje kao rezultat potrebe da se kreativne duhovne tvorevine ljudskog uma, intelekta i duha zaštite pravom. Štaviše, intelektualna svojina poseduje značajnu ekonomsku vrednost, što potvrđuju i podaci da je ona danas jedna od najskupljih roba na svetskom tržištu (Marković, Miladinović, 2014). Drugim rečima, socijalne funkcije prava intelektualne svojine su dvojake. S jedne strane, cilj je ekonomsko stimulisanje subjekata da stvaraju nematerijalna dobra, što zahteva investiranje ličnih resursa. Sa druge strane, i kao posledica prve funkcije, jeste podsticanje ekonomskog, kulturnog i tehnološkog razvoja društva.

Prema *Strategiji razvoja intelektualne svojine* Republike Srbije, doslednom zaštitom intelektualne svojine stvaraju se uslovi za ekonomski razvoj države. To se može ilustrovati podatkom da ukupno učešće kreativnih industrija, koje počivaju na iskorišćavanju autorskih dela i srodnih prava, u stvaranju bruto domaćeg proizvoda (BDP) Srbije iznosi čak 4.61%.⁴⁰

Pravo intelektualne svojine možemo podeliti na pravo industrijske svojine i autorska i srodna prava. Autorsko delo štiti se autorskim pravom. Međutim, autorsko pravo nije samo pitanje zakonodavstva, već i ekonomsko i političko pitanje, s obzirom na to da ono služi kao instrument koji se može koristiti u ciklusu akumulacije kapitala za stvaranje novog bogatstva (Joonseok, 2019). Osim ekonomskog opravdanja intelektualne svojine, i pravda nalaže da se onemogućiti „besplatna vožnja“, tj. da se profitira na tuđem trudu. Nekažnjanim korišćenjem tuđeg izvornog autorskog dela narušava se „pravedna nagrada“, koja

⁴⁰ Zanimljivo je da kreativne industrije, među kojima su i radio i TV produkcija, stvaraju više BDP-a od rudarstva, a približno jednako kao finansijske usluge, osiguranje ili snabdevanje električnom energijom (Strategija razvoja intelektualne svojine za period od 2018. do 2022. godine).

bi inače usledila autoru (Marković, 2018). Dakle, jasno je da je određena zaštita ljudskog kreativnog dela od višestrukog značaja za društvo.

Činjenica je da se većina formata sastoji od jedinstvene kombinacije različitih elemenata, koji se tradicionalno štite različitim propisima (zakonom o autorskim i srodnim pravima, zakonom o žigu, zakonom o sprečavanju neloyalne konkurencije, zakonom o zaštiti poslovne tajne itd.). Zbog toga, u literaturi se vode polemike o pravnoj prirodi TV formata i mogućnostima njegove zaštite. Tako, neki autori se zalažu za priznavanje TV formata kao mogućeg objekta intelektualne svojine i to kroz više mogućnosti: kao dramsko delo, hibridni objekat, sintetički objekat, kompilacija ili složeni objekat. Sylkina (2020), na primer, predlaže priznavanje TV formata kao jedinstvenog, *sui generis* složenog objekta intelektualne svojine na koji bi trebalo primeniti jedinstven sistem zaštite. To bi uključivalo mogućnost njegove eksploatacije bez potrebe za koordinacijom svih lica koja su učestvovala u stvaranju objekta i njegovu lakšu pravnu zaštitu. I drugi pravni teoretičari, ali i eksperti TV industrije se zalažu za snažniju i konkretniju zaštitu stvaralaca TV formata od imitiranja, kao legitimnih originalnih duhovnih tvorevina, koje zaslužuju da se njihovim autorima priznaju materijalna i imovinska prava (Koros, 2019).

S druge strane, Gotlib (Gottlieb, 2010) je naveo četiri glavna argumenta protiv zaštite TV formata putem prava intelektualne svojine koja se sreću u literaturi: (1) prekomerno širenje tradicionalnih granica intelektualne svojine, (2) postojanje druge vrste podsticaja za stvaranje formata, čime se umanjuje značaj pravne zaštite, (3) tvrdnja da takva zaštita dovodi do ekonomske neefikasnosti, i (4) intelektualna svojina stvara neprihvatljiv tržišni monopol. U tom smislu Marković (2018: 323) navodi da bi trebalo zaustaviti dalje jačanje prava intelektualne svojine, s obzirom na “nedostatak naučne verifikacije neto društvene koristi od prava intelektualne svojine”.

Naveli smo da je osnovna ekonomska uloga prava intelektualne svojine u omogućavanju subjektu zaštite da ostvari materijalnu korist od privredne eksploatacije predmeta zaštite, što podrazumeva isključenje konkurencije. Međutim, pravo intelektualne svojine mora da omogući kompromis između zaštite tvorca intelektualnog dobra i njegove investicije, s jedne strane, i potrebe da se ne ugrozi opšti interes zajednice za razvojem i širenjem kulturne baštine, s druge strane (Marković, Popović, 2021). Kako se TV format nalazi u „sivoj zoni prava“ (Malbon, 2006: 128), upravo je pitanje kompromisa između ova dva zaštitna objekta ključno u kontekstu razmatranja pravne prirode i mogućnosti zaštite formata putem prava intelektualne svojine, a naročito putem autorskopravne zaštite.

TV format – autorsko delo, opšta ideja ili tehničko uputstvo?

Stvaraoci TV formata se najviše zalažu za to da formati budu priznati kao autorska dela zaštićena autorskim pravom. Tu se kao sporno javlja pitanje zaštite koncepta, odnosno „ideje“ formata, a ređe problem krađe nespornih autorskih elemenata, kao što su muzika ili grafički elementi, koja se u praksi retko javlja (Popović, 2014). Na primer, plagijator će uglavnom izbeći da upotrebi istu muziku, logo ili scenografiju, ali će osnovni koncept formata biti vrlo sličan ili identičan.

U pravnoj i medijskoj teoriji postoje različiti stavovi u pogledu mogućnosti i svrsihodnosti autorskopravne zaštite TV formata i njegovih posebnih žanrova. Na primer, Bergmanova (2011) smatra da rijaliti formati, kao posebna vrsta TV formata, moraju ostati u javnom domenu, kako se ne bi sputavala kreativnost. Stoga, ona navodi da rijaliti formati, kao najspontaniji vidovi formata, ne mogu biti predmet zaštite autorskog prava. S druge, Čalabi (Chalaby, 2011) insistira na tome da se TV formati ne sastoje samo od ideja, već da je u procesu njihovog stvaranja potrebna velika stručnost. Koros (2019) smatra je format konkretni izražaj ideje koji ima strukturu jedinstvenih prepoznatljivih elemenata, te da zaslužuje autorskopravnu zaštitu.

Međutim, u zakonodavstvu Republike Srbije, a i u mnogim zemljama širom sveta, televizijski format nije predviđen kao posebno intelektualno dobro, koje uživa zaštitu u celini. Nije naveden ni kao posebno autorsko delo. Prema *Zakonu o autorskom i srodnim pravima RS*, „autorsko delo je originalna duhovna tvorevina autora, izražena u određenoj formi, bez obzira na njegovu umetničku, naučnu ili drugu vrednost, njegovu namenu, veličinu, sadržinu i način ispoljavanja, kao i dopuštenost javnog saopštavanja njegove sadržine“. Naš zakon spada u zakone koji sadrže otvorenu listu mogućih autorskih dela, za razliku od drugih, pretežno anglo-saksonskih pravnih sistema, koji predviđaju tačno određene moguće forme autorskih dela. Dakle, naš zakon egzemplarno navodi primere autorskih dela (pisana dela, govorna dela, dramska dela itd.), što znači su mogući i drugi oblici, pod uslovom da ispunjavaju zakonski propisane uslove. Drugim rečima, autorsko delo može da bude izraženo i u nekoj drugoj formi, tako da ona može biti saopštena javnosti. S druge strane, ideja kao takva, ne uživa zaštitu, dok ne dobije određenu formu, odnosno dok ne bude materijalizovana u nekom obliku (Vodinić, 2017).

Dakle, pravo ne štiti ideje koje nisu materijalizovane u nekoj formi. Međutim, Marić smatra da je odredba našeg zakona o isključivanju opštih ideja iz autorskopravne zaštite nedovoljno precizna, i da bi zapravo trebalo da glasi “misao”. Na taj način se bolje razume distinkcija između misli, kao *neopredmećene* ideje, od ideje koja može biti *izražena* u nekoj formi. Takođe, postavlja se pitanje kako tumačiti pojam “opšte ideje”, koje su eksplicitno

isključene iz zaštite. Isti autor smatra da bi to trebalo da budu vrlo uopštene „zamisli, želje i planovi” da se neko pitanje reši, da se nešto uradi itd. Drugim rečima, ne bi bile isključene iz zaštite sve ideje (pod uslovom da su materijalizovane), već one koje predstavljaju javno dobre, koje su rudimentarne, opšte poznate i slično (Marić, 2021). Odnosno, ukoliko je ideja konkretizovana, to jest dovoljno detaljno razrađena, može da bude autorsko delo: „ideja kao koncept ili koncepcija autorskog dela sadrži već i predlog kako će određeno pitanje da bude rešeno, osnovnu struktura onoga što će izrasti u autorsko delo, a ne samo nameru autora da ga reši“ (Marić, 2021:60).

Iz zaštite su isključeni i postupci, metode rada, ili matematički koncepti kao takvi, kao i načela, principi i uputstva koji su sadržani u autorskom delu. Ovo nam je posebno značajno za dalju analizu, jer je suština dileme u tome da li konstitutivni elementi TV formata, njegovo idejno jezgro, predstavljaju samo puki koncept, odnosno opštu ideju ili tehnička uputstva, koja nisu zaštićena autorskim pravom, ili predstavljaju originalni *izraz* te ideje, koji se kao takav može pravno štiti (Boppert, 2018).

Za autorsko delo se zahteva i postojanje originalnosti. Pojam originalnosti ne znači da delo mora da bude u potpunosti novo, jer svako delo proizilazi iz društvene i kulturne tradicije, ali mora da ima određene elemente koji su originalni, kao i da bude odraz ličnosti autora (Popović, 2014). To znači da delo ne sme biti rezultat namernog ili nesvesnog podražavanja postojeće kulturne baštine, ili intelektualnog rada determinisanog pravilima koja ne ostavljaju prostora za izražavanje lične duhovne originalnosti.⁴¹

TV format nije izričito predviđen kao posebno autorsko delo. To znači da mogućnost njegove zaštite moramo tražiti u opštem pojmu autorskog dela. Osim toga, po ugledu na film, TV format bi mogao biti neka vrsta koautorskog dela, ukoliko su delovi neodvojivi ili su koautori imali cilj da stvore jedno zajedničko delo. S druge strane, domaće zakonodavstvo predviđa i postojanje spojenog dela, u smislu da je svaki deo celine moguće zasebno koristiti, što bi možda i najviše odgovaralo prirodi ovog intelektualnog dobra. Ipak, brojni i različiti elementi TV formata komplikuju ovu diskusiju, s obzirom na to da se neki od njih mogu posmatrati kao tehnička uputstva, ili da pripadaju nekom drugom pravu intelektualne svojine, a ne autorskom pravu.

Kako je plagiranje, odnosno kopiranje TV formata predmet brojnih sporova, potrebno je analizirati i pojam plagijata. Sudska praksa poznaje dve vrste plagijata: konceptualni i doslovni plagijat. Plagiranje ne podrazumeva samo doslovno preuzimanje reči, ili nota iz nečijeg autorskog dela, već i preuzimanje koncepta. Konceptualni plagijat bi predstavljao preuzimanje osnovne suštine ili

⁴¹ Presuda Privrednog apelacionog suda Pž n5211/17 do 14. juna 2018. godine (Stamenković, 2020).

strukture određenog dela, uz određenje varijacije na osnovu čega nastaje „novo“ autorsko delo (Marić, 2021 89).

Kako nam postojeći propisi i literatura ne pružaju definitivne odgovore, nužno je analizirati primere iz srpske i inostrane sudske prakse. Sudska praksa u pogledu TV formata nije ujednačena.

Primeri iz sudske prakse u Republici Srbiji

Iako u ovoj oblasti ne postoji veliki broj sporova u Republici Srbiji, niti je sudska praksa formalni izvor prava, izložićemo, kao ilustraciju problema, nekoliko presuda domaćih sudova.

U prvom predmetu koji se analizira, tužilac je osmislio TV igru koja se može komercijalizovati, a koja se sastojala u prodaji stvari javni nadmetanjem sa najnižom jedinstvenom ponudom. Tu ideju je detaljno izrazio u brošuri, koju je zatim i deponovao u Zavodu za intelektualnu svojinu Republike Srbije.⁴² Nakon toga, tužilac je sa jednom televizijskom kompanijom zaključio ugovor o poslovno-tehničkoj saradnji, na osnovu čega je trebalo da se emituje emisija zasnovana na brošuri tužioca, a u kojoj bi građani slali SMS poruke i licitirali najnižu cenu za određeni proizvod. Međutim, emisija je ubrzo skinuta sa programa. Nekoliko godina nakon toga, tužena strana „Državna lutrija Srbije“ je priredila igru na sreću „RTS licitacija“ koja se zasnivala na simulaciji inverzne aukcije (inverzne licitacije) u kojoj učesnici slanjem ponuda putem SMS poruka dostavljaju najniže fiktivne ponude za predmet licitacije. Tužilac je tvrdio da je tužena strana narušila njegovo autorsko pravo i „ukrala“ njegovu ideju za emisiju.

Sud je analizirao činjenično stanje i zaključio da su inverzne aukcije zasnovane na već poznatom, standardnom principu koji je sličan tradicionalnoj aukciji sa jedinstvenom ponudom, kao i da je ovaj način prodaje postao popularan od 2002. godine, te da tužiočeva ideja da se roba prodaje javnim nadmetanjem po pravilu najniže jedinstvene ponude cene, „koja jeste stekla materijalizaciju kroz TV format emitovanjem na televiziji, ne predstavlja autorsko delo“, odnosno da je opšte dobro i ne podleže autorskoj zaštiti. Sud se osvrnuo i na tvrdnju tužioca da je on svoje autorsko delo zaštitio prijavom kod Zavoda za intelektualnu svojinu. Sud je naveo da unošenje u evidenciju i deponovanje autorskih dela ne utiče na nastanak autorskog prava, već služi samo kao podatak da je određeno delo evidentirano.

Prvostepeni sud je procenio da se radi o opštoj ideji a ne autorskom delu, a tuženi su osporili da je brošura tužioca autorsko delo. Po pravilima o teretu

⁴² Zavod za intelektualnu svojinu je posebna organizacija u sistemu državne uprave Republike Srbije u čijoj su nadležnosti poslovi koji se odnose na prava industrijske svojine i autorska i srodna prava.

dokazivanja⁴³, tužilac je bio u obavezi da predloži veštačenje „na okolnost da li se radi o originalnoj duhovnoj tvorevini, odnosno da se njegova ideja aukcije po najnižoj jedinstvenoj ceni po svojim karakteristikama razlikuje od svih aukcija sličnog žanra“, što on nije učinio. Dakle, zaključak prvostepenog suda, što je potvrdio i apelacioni sud je bilo da *prima facie* takve aukcije postoje od ranije, a i da predstavljaju opštu ideju, te ne mogu da uživaju autorsku zaštitu.⁴⁴

U drugom predmetu radilo se o sinopsisu⁴⁵ za potencijalni mega šou program, koji je upisan u evidenciju dela domaćih autora 2008. godine. Sinopsis je predviđao da će u šou biti birani top model, naj manekenka i fotomodel, od strane profesionalnog žirija, jedne popularne estradne ličnosti i glasanjem gledaoca putem SMS poruka. Prema sinopsisu su precizirani još neki detalji, kao što je cilj emisije, način snimanja i mogući kandidati. Tužena strana je 2011. emitovala serijal sa sličnom radnjom, uz saglasnost američke kompanije, koja je registrovala autorska prava na serijalu „ANTM“ kod Zavoda za zaštitu autorskih prava SAD. Tužbom se tvrdilo da je emitovanjem sporne emisije 2011. godine, tužena strana povredila autorsko pravo tužioca, jer je emitovana serija identična sa idejom i konceptom tužiočevog autorskog dela. Sud je zaključio da je autorstvo tužioca zavedeno značajno kasnije nego što je originalni američki serijal, na osnovu koga je proizvedena emisija tuženog, registrovan kao autorsko delo kod američkog zavoda, što se desilo već 2003. godine. Osim toga, takav serijal je emitovan i u drugim evropskim zemljama.

Veštak je dao svoj nalaz i mišljenje da autorizovani sinopsis tužioca poseduje elemente nacрта, skice, pregled siže, ali ne i sadržaj, formu i funkciju scenarija, odnosno da sinopsis nije scenario, a da su slične emisije postojale i ranije. Kako je tužilac registrovao sinopsis koji ima veliku sličnost sa formatom koji je već ranije registrovan i emitovan u drugim državama, ne može se smatrati da je tuženi povredio autorsko pravo tužioca. Tuženi je svoje pravo na emitovanje izvodio iz dozvole nosioca autorskog dela američke kompanije, čije je autorstvo priznato ranije. Sud se, međutim, nije bavio pitanjem prirode sinopsisa kao autorskog dela, s obzirom da je autorstvo u konkretnom slučaju sporno jer je emisija tužene strane zasnovana na formatu koji je registrovan ranije nego što je tu učinio tužilac.⁴⁶

U vreme pisanja ovog rada aktuelan je i slučaj koji je privukao veliku medijsku pažnju u Srbiji. Radi se o sporu između kreatorke TV emisije „Utisak nedelje“, popularne političke *talk show* emisije, u kojoj se omogućava kontakt sa

⁴³ Zakon o parničnom postupku (“Sl. glasnik RS”, br. 72/2011, 49/2013 - odluka US, 74/2013 - odluka US, 55/2014, 87/2018 i 18/2020), čl. 231.

⁴⁴ Presuda Apelacionog suda u Beogradu, Gž4 132/18, 19. 5. 2021. godine.

⁴⁵ Kako navode Micić i ostali (1980: 53): „Sinopsis je ideja budućeg dela, u kome je veoma sažeto iznesena njena tema i ideja. Obim sinopsisa može da varira ali najčešće ima nekoliko kucanih stranica.

⁴⁶ Presuda Vrhovnog kasacionog suda, Rev 1026/2016, 16. 05. 2018. godine.

gledaocima, i u kojoj gostuju poznate ličnosti koji iznose svoje utiske o najaktuelnijim društvenim događajima, s jedne strane, i koautora navodnog plagijata, emisije „Hit-tvit“ koja se emituje ne jednoj drugoj televiziji, s druge strane. Prvostepeni sud je zaključio da format „Hit-tvit“ predstavlja plagijat autorskog dela tužilje, deponovanog kod autorske agencije za Srbiju još 1995. godine, odnosno da je povređeno njeno autorsko pravo. Međutim, drugostepeni sud je ukinuo presudu i vratio na odlučivanje prvostepenom sudu.

Naime, drugostepeni sud je naveo da je prvostepeni pogrešio što nije angažovao trećeg veštaka, jer su veštaci obe strane dali različite nalaze veštačenja. Iako su se veštaci složili da se u oba slučaja radi o „audiovizuelnim delima po modelu kontakt programa sa voditeljkom i gostima u studiju i glasanjem gledao za predloge“, veštaci se nisu složili da emisija „Hit-tvit“ predstavlja plagijat. Sud se osvrnuo na to da ovakva forma programa nije originalna tvorevina, jer je takvih emisija bilo i ranije, što je poznata činjenica, te da između emisija moraju postojati neke druge sličnosti. Kako spor još nije okončan, ne možemo da damo zaključnu ocenu, međutim zanimljiv je stav drugostepenog suda da je potrebno utvrditi da li su imitirani originalni segmenti emisije, te da li postoji i nešto što je originalno u emisiji tuženih.⁴⁷

Iz ovih predmeta može se izvesti nekoliko zaključaka. Prvo, deponovanje autorskog dela u Zavodu za intelektualnu svojinu ne čini to delo zaštićenim autorskim pravom, ali predstavlja značajno olakšanje prilikom dokazivanja autorstva. Da li se u datom slučaju radi o autorskom delu ili ne, prema Zakonu o autorskim i srodnim pravima, zavisi od njegove originalnosti, što je faktičko pitanje, o čemu se uglavnom izvodi veštačenje stručnjaka iz ove oblasti. Drugo, na tužiocu je da dokazuje da njegovo delo jeste autorsko delo, odnosno da je delo tuženog plagijat. Sud se, u prvom primeru, i sam osvrnuo na to da su određeni elementi TV formata, koji je bio predmet spora, opšte dobro, odnosno da nemaju dovoljnu originalnost da uživaju autorskopravnu zaštitu.

Zbog okolnosti ovih slučajeva, nažalost, ostali smo uskraćeni za detaljnije razmatranje sudova o elementima originalnosti TV formata i u čemu se sastoji plagijat.

Primeri iz inostrane sudske prakse

Inostrana sudska praksa je daleko bogatija u pogledu TV formata, ali su sudovi dolazili do različitih zaključaka. Predmet *Green vs. Broadcasting Corporation of New Zealand* iz 1989. godine predstavlja značajan momenat u razvoju pravne zaštite TV formata, koji je postavio negativan precedents za kreatore formata u *common law* pravnim sistemima. Naime, voditelj Hjui Grin je tužio New Zealand Broadcasting Corporation da je plagirala njegov talent šou “Opportunity Knocks”.

⁴⁷ Rešenje Apelacionog suda u Beogradu, GŽ4 201/21, 24. 12. 2021. godine.

Sud je odlučio da je njegova tužba bespredmetna jer se ideja ne može štititi autorskim pravom. Takođe je zaključio da format *nije dramsko delo* s obzirom na to da ne postoji dovoljno jedinstvo ili koherentnost.⁴⁸

Sličnu argumentaciju imao je i Savezni sud Nemačke u predmetu *TV-Design v. SWR*, koji se ticao navodnog imitiranja TV formata „L'école des fans“. Sud je naveo da je TV format pre *skup uputstava* za pretvaranje određenog TV programa u formu, nego što je forma sam po sebi. Postupanje po uputstvima ili receptu za televizijski program ne može predstavljati povredu autorskog prava. Ono što može da uživa zaštitu jeste *scenario*, koji zaista i predstavlja autorsko delo (FRAPA, 2011).

Međutim, postoje određeni primeri koji pokazuju da sudovi ipak priznaju autorskopravnu zaštitu TV formatima, pod određenim uslovima. U predmetu *TV Globo & Endemol v. TV SBT*, brazilski sud je stao na stanovište da je *produksijska Biblija* izraz ideje, koja se može koristiti kao dokaz originalnosti TV formata. Sud je zaključio da je format *Big Brother* zaštićen autorskim pravom i da je emisija „Casa dos Artistas“ predstavljala kopiju. Sudija je naveo, na osnovu veštačenja, sledeće:

„ogromna sličnost između oba programa ne proizilazi iz slučajnosti, već iz loše prikrivene i grube kopije formata programa Veliki brat... (koji) promišlja program sa početkom, sredinom i krajem, sa detaljnim opisom, ne samo atmosfere u kojoj će ljudi živeti određeno vreme, već i mesta gde su kamere postavljene. Format se sastoji od detalja kao što je upotreba mikrofona vezanih za tela učesnika, povezana 24 sata dnevno, muzički stilovi, aktivnosti itd.“

Zanimljivo je da je sud u ovom slučaju priznao zaštitu kako umetničkim tako i tehničkim elementima formata, kao što su pozicije kamera, vizuelni i audio elemente, čiji je cilj predstavljanje određene dramske situacije, te je zaključio da je emisija „Casa dos Artistas“ predstavljala povredu autorskog prava autora formata „Big Brother“.

Format „Big Brother“ je bio predmet još jednog spora, ali kao tužena strana. Tužilac je tvrdio da format „Survivor“ predstavlja autorsko delo, a da je „Big Brother“ njegov plagijat. Holandski vrhovni sud je stao na stanovište da kombinacija dvanaest elemenata „Survive“ formata uzetih zajedno jeste dovoljno jedinstvena i specifična da bi bila original i zato predstavlja zaštićeno delo „u celini“. Ipak, sud je presudio da *Big brother* nije kopija ove emisije (FRAPA,

⁴⁸ Apelacioni sud Novog Zelanda, *Green v. Broadcasting Corporation of New Zealand* [1988] 2 NZLR 490 (CA).

2011).⁴⁹ Zanimljiv je i predmet *Twentieth Century Fox Film Corporation v Zee Telefilms Ltd & Ors*, u kome je tužilac tvrdio da emisija predstavlja nedozvoljenu upotrebu njegovog serijala 24. Sud je odbio navode tužioca i zaključio da su teme serijala opšte, ali da se narativi dovoljno razlikuju. Sud je naveo da puka sličnost u prezentaciji serijala nije dovoljan osnov za autorskopravnu zaštitu. Sud je izložio i nekoliko važnih vodećih principa koji se tiču zaštite formata. Naime, da bi se pokazalo da je delo plagijat potrebno je da je prekopiran značajan deo, i to onaj koji se tiče kvaliteta, a ne kvantiteta; nema zaštite za ideju, koncept, princip ili otkriće, potrebna je originalnost; puka tema ili okvir ne može biti zaštićen pravom intelektualne svojine. Ipak, jedinstvena i prepoznatljiva tema ili radnja jeste zaštićena kao književno ili dramsko delo.⁵⁰

U predmetu *Maradentro Producciones S.L. v Sogecable, S.A.* španski sud je naveo da se formati *načelno mogu štiti autorskim pravom* zato što autorsko pravo štiti scenario i priču, crteže, planove, modele, skice. Ukoliko se format može uporediti sa pričom ili scenarijom onda se takođe mora štiti, ali mora da postoji „kvalitativni skok od pukog opšteg koncepta“ koji rezultira u stvaranju kompleksne kreacije, koja je detaljna i formalno strukturisana (FRAPA, 2011). U duhu prethodne odluke, u predmetu *Atomis Media, S.A & Outright Distribción Ltd v Televisión De Galicia, S.A. & CTV, S.A.*,⁵¹ iz 2010. godine, španski sud je zaključio da formati mogu biti zaštićenim autorskim pravom ukoliko ih je stvorio čovek, ukoliko su izraženi putem nekog medija i ukoliko su originalni. Sud je naveo da format mora biti sličan scenariju ili priču. Ukoliko se format sastoji od niza elemenata, koji su strukturisani i kombinovani na određeni način, nije neophodno da svaki individualni element bude originalan, ali njihova jedinstvena kombinacija omogućava autorskopravnu zaštitu. U konkretnom slučaju, format nije bio zaštićen s obzirom na to da je sud zaključio da nije bio dovoljno originalan, i da nije uključivao „kompleksan proces“ (FRAPA, 2011).

Neke od novijih odluka takođe priznaju formatima pravo na zaštitu. Tako, italijanski Vrhovni kasacioni sud je u presudi iz 2017. godine⁵² zaključio da TV formati mogu biti zaštićeni u skladu sa italijanskim Zakonom o autorskim pravima, te pojasnio koji su uslovi da bi takva zaštita bila moguća. Naime, delo se može kvalifikovati kao format, ukoliko ima logičku i tematsku vezu koja se sastoji od naslova, osnovne narativne strukture, scenografije i fiksnih likova, što

⁴⁹ Vrhovni sud Holandije, *Castaway Television Productions Ltd & Planet 24 Productions Ltd v. Endemol Entertainment & Jon De Mol Productions*, predmet br. C02/284HR, 2000. (FRAPA, 2011: 17-18).

⁵⁰ Delhi High Court. *Twentieth Century Fox Film .. vs Zee Telefilms Ltd. & Ors.* on 10 July, 2012. <https://indiankanoon.org/doc/72003037/>

⁵¹ Apelacioni sud u Korunji, *Atomis Media, S.A. & Outright Distribution Ltd v. Television De Galicia S.A. & CTV, S.A.*, 31. jul 2010.

⁵² RTI Reti Televisive Italiane Spa v *Ruvido Produzioni Srl*, Vrhovni sud, presuda 18633/17 (27 Juli 2017).

rezultuje strukturom koja se može ponavljati. Navedeno je i da ukoliko se TV program sastoji pretežno od improvizovanih elemenata, ne može se smatrati formatom (Rosati, 2017).

Zanimljivo je da je turski Vrhovni apelacioni sud 2008. godine utvrdio da TV format koji je razrađen na osnovu teksta i sadrži gotovo sve detalje, kao što su specifične formulacije koje će se koristiti prilikom najave reklama, svetla kamere i tehnike snimanje biće zaštićeno kao *naučno i književno delo*.⁵³ U jednom drugom sporu iz 2016. godine turski sud je ustanovio da „format koji ne sadrži detaljan opis neće uživati zaštitu autorskih prava, jer ne odražava osobine njegovog autora“, što podrazumeva da formati koji imaju karakteristike i nadilaze apstraktna objašnjenja ideje su zaštićene autorskim pravima.⁵⁴ Dakle, u Turskoj TV formati mogu da uživaju zaštitu prema Zakonu o autorskim pravima pod uslovom da izražavaju osobine svojih autora i da su posebno detaljni (Basaran, 2019).

Diskusija i zaključak

Televizijska industrija se duži niz godina oslanja na TV formate kao proverene „mamce“ za gledaoce. Putem prodaje i licenciranja na međunarodnom tržištu TV formati čine vrlo unosan biznis. Iz ovih razloga kreatori TV formata, njihova udruženja i televizijska industrija se zalažu za konkretniju i sigurniju pravnu zaštitu od plagijata, pre svega putem autorskog prava.

Na osnovu analiziranih predmeta iz strane sudske prakse, uočava se širok spektar odluka, koje se kreću od potpunog odbacivanja mogućnosti autorskopravne zaštite za TV formate, zato što su oni samo ideja ili puki skup uputstava, do stavova da mogu da se štite kao dramsko delo, pod uslovom da su dovoljno koherentni, ili kao scenario, ukoliko su dovoljno detaljni, pa do priznavanja svih elemenata TV formata, uključujući i tehničke elemente, kao jedinstvenu celinu koja je zaštićena autorskim pravom.

Takođe, s izvesnom rezervom, može se uočiti i sve češća sklonost sudova različitih država da priznaju načelnu mogućnost zaštite TV formata kao autorskih dela i sankcionisanja onih koji su povredili imovinska i moralna prava njihovih autora. Međutim, kako će sud koji odlučiti, zavisi od više faktora i okolnosti svakog konkretnog slučaja. Ukratko, najviše izgleda za zaštitu poseduje materijalizacija ideje formata kroz pisani tekst, brošuru ili scenario, koji je dovoljno detaljan, koji sadrži kako originalne, tako i neoriginalne elemente, povezane na taj način da je nesumnjivo da predstavljaju izraz ličnosti kreatora,

⁵³ Presuda 11. građanskog odeljenja Vrhovnog apelacionog suda br. E. 2008/5996, K. 2008/12126, od 03.11.2008, (<http://www.kazanci.com>)

⁵⁴ Presuda 11. građanskog odeljenja Vrhovnog apelacionog suda br. E. 2015/10650, K. 2016/5199, od 9.5.2016 (<http://www.kazanci.com>).

dovoljno razrađeni da nisu puka opšta ideja, već da imaju originalnu, specifičnu i prepoznatljivu strukturu. Krajnje rudimentarne ideje, žanrovske karakteristike, i neoriginalni elementi formata ne bi mogli da budu zaštićeni autorskim pravom. Takođe, način na koji je definisan pojam autorskog dela u zakonodavstvima može da igra ulogu. Šire, otvorene definicije zaštićenih autorskih dela, ili onoga šta predstavlja kršenje prava, ostavljaju veći prostor sudovima da se prilagode socio-kulturnim i tehničko-tehnološkim inovacijama (Ohly, 2009).

Nakon što je utvrđeno da je TV format autorsko delo, prelazi se na analizu da li je program tužene strane njegova kopija ili ne, odnosno da li je došlo do kršenja moralnih i imovinskih prava autora. To je uglavnom faktičko pitanje, koje zavisi od analize suda i veštačenja stručnjaka. Ono što je jasno jeste da obimom autorskopravne zaštite nisu obuhvaćeni neoriginalni elementi autorskog dela. Odnosno, ukoliko se „kopiranje“ sastoji samo u adaptaciji opštih mesta, ideja koje nisu originalne, već poznate od ranije i predstavljaju opšte dobro, niti dovoljno razrađene načelno neće doći do povrede prava. Međutim, kopiranje određenog broja originalnih elemenata TV formata (aspekt kvantiteta) i to takvih da čine suštinu onoga što predstavlja njegovu originalnost (aspekt kvaliteta), svakako da ispunjava uslove da bude protivpravno.

Sumarno, da bi određeno lice uspelo u svom zahtevu, mora prvo da dokaže postojanje autorskog dela i da je on autor tog dela. Zatim je potrebno dokazati da se plagijatorsko delo potpuno ili u bitnoj meri podudara sa izvornim delom, kao i da je to drugo delo nastalo kasnije. Neophodan element je i da je plagijatorsko delo nastalo namernim ili nemarnim preuzimanjem izvornog dela, da je objavljeno bez navođenja originalnog dela, da je objavljeno kao sopstveno te da protivpravnost objavljivanja nije izuzetno isključena.⁵⁵

Polazeći od toga da u osmišljavanje mnogih TV formata ulazi značajna kreativnost, znanje, veština i trud, može se zaključiti da postoje argumenti u prilog njegove autorskopravne zaštite. Kreativnost stvaralaca TV formata se ogleda u spajanju različitih elemenata u originalnu strukturu, na osnovu sopstvenog promišljanja, veštine i kreativnosti. S obzirom na to da medijske kompanije iskazuju potrebu za novim televizijskim formatima, pitanje njihove zaštite biće aktuelno i u budućnosti. Štaviše, novi vidovi ljudske kreativnosti otelotvoreni u složenim medijskim formama će zahtevati i novo promišljanje pravne zaštite i prilagođavanje propisa i njihovog tumačenja savremenim prilikama.

Literatura

1. Bechtold S. 2013. The Fashion of TV Show Formats. Michigan State Law Review 2013, (2): 451-512.

⁵⁵ Presuda Apelacionog suda u Beogradu, GŽ4 br. 92/17, 25. 06. 2018. godine.

2. Bergman J. E. 2011. No More Format Disputes: Are Reality Television Formats the Proper Subject of Federal Copyright Protection? *The Journal of Business, Entrepreneurship & the Law* 4, (2). <https://digitalcommons.pepperdine.edu/jbel/vol4/iss2/1>
3. Boppert, P. 2018. What is the Status Quo of Copyright Protection for TV Formats in National Jurisdictions and Under International Treaties, and Does it Suffice? <https://ssrn.com/abstract=3143110>
4. Bop Consulting (2010). Mapping the Creative industries: a toolkit. Creative and Cultural Economy series/2. The British Council.
5. Başaran, S. 2019. Turkey: Protection Of TV Formats And Shows. <https://www.mondaq.com/turkey/copyright/867104/protection-of-tv-formats-and-shows>
6. Chalaby J. K. 2012. At the Origin of a Global Industry: The TV Format Trade as an Anglo-American Invention. *Media Culture & Society* 34, (1): 36-52. DOI:10.1177/0163443711427198
7. Chalaby J. K. 2011. The Making of an Entertainment Revolution: How the TV Format Trade Became a Global Industry December 2011. *European Journal of Communication* 26, (4): 293-309.
8. Day L.A. 1978. A copyright dilemma: The TV forma., *Journal of Broadcasting* 22 (2): 249-257, DOI: 10.1080/08838157809363882.
9. Department for Culture, Media and Sport. 2016. Creative Industries Economic Estimates. https://assets.publishing.service.gov.uk/media/5a80889a40f0b62305b8bb4e/Creative_Industries_Economic_Estimates_January_2016_Update_d_201605.pdf
10. FRAPA, McKenzie, B. 2017. Frapa Legal Report 2017.
11. FRAPA. 2011. The FRAPA Report 2011: Protecting Format Rights. https://frapa.org/wp-content/uploads/Report/FINAL%20FRAPA_Report_2011.pdf
12. Gottlieb N. E. (2010). Free to Air? Legal Protection for TV Program Formats. John M. Olin Program in Law and Economics. Working Paper No. 513, Chicago: The University of Chicago, Law School.
13. Green S. 2010cha. Former executive producer at Reg Grundy and Fremantle Media, head of Powerlocal. Power Television, interview with author, 4 June 2010.
14. Joonseok C. 2019. The commodification of television formats: the role of distribution in the emergence of the commodity form. PhD thesis, University of Iowa. <https://doi.org/10.17077/etd.u8xu-wtw6>
15. Koros C. D. 2019. Protection of TV Formats: Legal vs. Non-Legal Approaches. *Queen Mary Law Journal* 10: 7.

16. Marković S., i Popović D. 2021. Pravo intelektualne svojine. Beograd: Pravni fakultet Univerziteta u Beogradu.
17. Marić V. 2021. Originalnost autorskog dela. Beograd: Službeni glasnik.
18. Marković, S. M., Miladinović, Z. 2014. Autorsko parvo I srodna prava. Pravni fakultet Univerziteta u Kragujevcu.
19. Marković S. M. 2018. Pravo intelektualne svojine i informaciono društvo. Beograd: Službeni glasnik.
20. Moran A. 2004. New Television, New Formats. In; Adair, David & Albert Moran (eds.), At the TV Format Coalface. Working Papers in Communication 2/2004. Griffith, University, Brisbane.
21. Moran A., and Malbon, J. 2006. Understanding the Global TV format. UK: Intellect Books.
22. Meadow R. 1970. Television Formats – The Search for Protection. California Law Review 58 (4): 1169-1197.
23. Micić S., Babac M., Težak S., Vrabec M. 1980. Osnovi filmske kulture. Novi Sad: Radnički unniverzitet „Radivoj Čirpanov.
24. Ohly A. 2009. Economic rights, in: Research handbook on the future of EU copyright, edited by Estelle Declaire, Edward Elgar Publishing.
25. Popović D. 2014. Televizijski formati kao (ne) zaštićena intelektualna dobra. Anali Pravnog fakulteta u Beogradu 62, (1): 84-101.
26. Rosati E. 2017. Italian Supreme Court confirms availability of copyright protection to TV formats. Journal of Intellectual Property Law & Practice, 12, (12): 968-969 <https://doi.org/10.1093/jiplp/jpx197>.
27. Schmitt D., Bisson G., Fey C. 2005. The global trade in television formats. London, UK: Screen Digest Ltd and FRAPA with the support of the German Federal State of North Rhine-Westphalia.
28. Sylkina A. 2020. Approaches to Defining a Television Format as one of Intellectual Property Law objects: Ukrainian and Foreign Experiences. European Journal of Sustainable Development 9, (4): 364-375.
29. Stamenković J. 2020. Zbirke sudske prakse privrednih sudova iz oblasti zaštite intelektualne svojina, knjiga druga (2016-2019). Beograd: Službeni glasnik.
30. Strategija razvoja intelektualne svojine za period od 2018. do 2022. godine. “Službeni gasnik RS”, br. 78 od 19. oktobra 2018.
31. Vodinelic V. V. 2017. Građansko pravo: uvod u građansko pravo i opšti deo građanskog prava. Beograd: Pravni fakultet Univerziteta Union, Službeni glasnik.

Datum prijema (Date received): 15.11.2023.

Izvršena prva korekcija (The first correction was made): 08.12.2023.

Datum prihvatanja (Date accepted): 02.03.2024.

TV FORMAT PROTECTION THROUGH COPYRIGHT - OPPORTUNITIES AND DILEMMA

Milica Njegovan⁵⁶, Iva Šidjanin⁵⁷

Abstract

TV formats represent popular media content, which attracts a large number of viewers around the world. However, their legal is not regulated enough. The basic dilemma in legal theory and judicial practice is the possibility of copyright protection of TV formats. The aim of this paper is to try to determine the possibility of legal protection of the TV format as an author's work by analyzing domestic and foreign judicial practice, as well as the existing literature. Although some courts have held that a TV format can be protected as a whole, including its technical elements, this is more the exception than the rule. Most of the time, the disputed question comes down to the elements that have been copied, and concerns the basic idea or concept of the TV format. Nevertheless, there is a tendency on the international level towards more and more frequent recognition of copyright protection of TV formats, but under certain conditions. Thus, rarefaction, originality and typed structure of the format that can be repeated, as well as the way of defining the author's work in legislation are some of the elements that influence whether the TV format will be recognized and protected as an author's work.

Keywords: *TV formats, legal protection, intellectual property, copyright, creative industries*

JEL: *K11, 034*

Introduction

In recent decades, television formats have become the most watched media content, attracting large audiences as well as advertisers. We recall some of the most famous television formats (hereinafter: TV formats), which were broadcast on numerous TV channels around the world, such as "Big Brother" "Survivor" "X Factor", "Do you want to become a millionaire" "The Office" and others. The TV format industry, as part of the creative industries⁵⁸, is worth several billion dollars

⁵⁶Milica Njegovan, mast., Professional Associate, Faculty of Technical Sciences, Trg Dositeja Obradovića 6, Novi Sad; Doctoral student, Faculty of Law, University of Novi Sad, E-mail: milica.njegovan@uns.ac.rs

⁵⁷Dr. Iva Šidjanin, assistant professor, Faculty of Technical Sciences, Trg Dositeja Obradovića 6, Novi Sad, E-mail: iva.sidjanin@uns.ac.rs

⁵⁸Creative industries are defined as activities that are based on the creativity, skills and talents of an individual, and that have the potential to create wealth and jobs through the generation and exploitation of intellectual property (Bop Consulting, 2010).

(Chalaby, 2012), and television companies are always open to new and more creatively formatted television content. Proven "formulas" of programs that have proven successful in their markets of origin are licensed and broadcast in other countries, often with minor or major modifications, in order to adapt to the needs of the national media market.

The television format is defined in different ways. So, for example, the international Association For recognition and for protection TV format (hereinafter: FRAPA) describes the TV format as "characteristic" combination comprehensive described television elements i new ones and ordinary ones who I can or not they have to to be for the protected like separate items intellectual properties arranged on the immutable the way in there were com material form which one creates the original I will repeat narrative structure" (McKenzie, FRAPA, 2017). The TV format consists of "invariable elements in a program that form the basis for variable elements in individual episodes" (Bechtold, 2013). Moran and Malbon (2006) point out that format usually includes plot, basic story line, theme, mood and emotion dramaturgy, rules, sequence of events, direction, music, graphics, set design and instructions for the show's production process. TV formats are therefore composed of creative, business and marketing elements. In addition to the creative basis they possess, they are conditioned by the genre, technology and target audience of the program. It is precisely the specific, unique combination of different elements that attracts viewers (Meadow, 1970).

There are numerous types of TV formats, from *game* shows, through reality shows, talent competitions, various quizzes and documentary entertainment shows, and recently, series models for the global market are being produced. Given that mass communication media, both traditional and new, have great possibilities for content production and marketing, it is to be expected that program formats will acquire new genres and forms in the future.

The international television industry defines a TV format as a program that has been sold in at least one foreign market (Schmitt et al., 2005). However, in a broader sense, the TV format represents a "mould" for program content, that is, a combination of narrative elements, a recognizable and repeatable structure, regardless of whether it is licensed and broadcast in a foreign market or not. For example, the domestic quiz "Slagalica" was not sold on the foreign market, but it belongs to TV formats. In this sense, regardless of whether it is a TV format that was sold on a foreign market, or a format that was designed and broadcast as a TV show only in one country, not so rarely, there was an imitation of them, or copying. The TV format industry is particularly interested in the problem of protection against international "theft" of what they consider their intellectual property.

The first variant of "theft" of a TV format occurs when the creator of a format presents an idea to a certain media company for cooperation, and it, not long after, makes an identical or very similar program, without acknowledging the authorship or paying any compensation. In another case, it is possible that an already broadcast TV format "inspires" another media company to market the same or similar content under its trademark. There were such examples in practice, which will be discussed later. These are some of the most obvious reasons for the need for legal protection of the TV format, so that it would bring material benefits to the broadcasters and authors of the format as long as possible and ensure high ratings (Moran, 2004). However, the legal protection of any media content, especially TV format, is a very complex issue.

The problem with the protection of the TV format lies, first of all, in its mixed nature. The classic TV format consists of various elements: basic concept, specific music, scenography, logo, way of presenting certain segments of the program and the like. In addition, the very essence of the TV format, as a more or less developed idea, that is, the concept, it led, and continues to lead to conflicting judgments of the courts.

As the TV format is composed of several diverse elements (both in the creative and legal sense), the possibilities of its legal protection are different, but often insufficiently reliable. The basic method of protection for which the creators of the TV format advocate is through intellectual property rights, specifically copyright. In addition to copyright protection, other possibilities include the rules on competition protection (when, contrary to good business practices, confusion or danger of confusion is created in the commercial circulation of some property of the product or if someone else's work or reputation is used parasitically) (Popović, 2014), protection through business secret rules (which prevents misuse of *know-how* information), through trademark (which protects the name or logo of the program) or design protection (for scenographic and design elements). In addition, the TV format industry relies on illegal means of protecting its product.⁵⁹

Many TV formats are known to have their own "production bible", which contains format rules and other key information on how to adapt the TV format to local markets (Green, 2010). It represents a certain "shield" against the plagiarism of someone else's work, given that for many customers it is safer to buy a TV format with all the necessary data to ensure the success and profitability of the show, than to copy it. However, thefts and imitations still happen, and the creators of TV formats are advocating for their stricter legal protection.

⁵⁹Some of the possible strategies are speed to market and format premiere, Gentleman's Agreement, branding, "flying producer" system, TV format registration system, and others (FRAPA, 2011).

In this paper, the focus is on the copyright protection of the TV format, that is, on the basic dilemma that exists in legal theory and judicial practice: whether and under what conditions the TV format can be protected as an author's work. As this is a multi-layered problem, we will begin the presentation with an analysis of the concept of intellectual property and intellectual property, its legal and political justification, and then we will move on to an analysis of copyright and court practice, all in the context of the TV format.

Theoretical considerations on the TV format as intellectual property

The creation of a TV format represents a certain creative process of an individual or a group of people. The expenditure of time and material resources necessary to design a TV format and then produce quality television content seemingly justifies viewing the format as a spiritual creation worthy of legal protection. That is why the creators of TV formats and the television industry have been advocating for their comprehensive protection for many years, primarily through intellectual property rights.

Intellectual property law arises as a result of the need to protect the creative spiritual creations of the human mind, intellect and spirit by law. Moreover, intellectual property has a significant economic value, which is confirmed by the data today one of the most expensive goods on the world market (Marković, Miladinović, 2014) In other words, the social functions of intellectual property rights are twofold. On the one hand, the goal is the economic stimulation of subjects to create intangible goods, which requires the investment of personal resources. On the other hand, and as a consequence of the first function, is the encouragement of the economic, cultural and technological development of society.

According to *the Intellectual Property Development Strategy* of the Republic of Serbia, consistent protection of intellectual property creates conditions for the economic development of the country. This can be illustrated by the fact that the total participation of creative industries, which rest on the exploitation of copyrights and related rights, in the creation of the gross domestic product (GDP) of Serbia amounts to 4.61%.⁶⁰

Intellectual property law can be divided into industrial property law and copyright and related rights. Author's work is protected by copyright. However, the author's right it's not only Question legislation but also economic and politician question s considering on the that that servant like instrument which one se can to use in cycle accumulation capital For creation the new one wealth Joonseok 2019).

⁶⁰ It is interesting that creative industries, including radio and TV production, generate more GDP than mining, and approximately as much as financial services, insurance or electricity supply (Intellectual Property Development Strategy for the period from 2018 to 2022)

Apart from the economic justification of intellectual property, justice also dictates that the "free ride", i.e. to profit from someone else's effort. Unpunished use of someone else's original author's work violates the "just reward", which would otherwise follow the author (Marković, 2018). Therefore, it is clear that certain protection of human creative work is of multiple importance for society.

The fact is that most formats consist of a unique combination of different elements, which are traditionally protected by various regulations (the law on copyright and related rights, the law on trademarks, the law on the prevention of unfair competition, the law on the protection of business secrets, etc.). For this reason, there are polemics in the literature about the legal nature of the TV format and the possibilities of its protection. Thus some authors advocate For recognition TV format like I can eg of the object intellectual properties and that through the more possibilities as dramatic work hybrid object synthetic object compilation or complex object Sylkina (2020), for example, proposes the recognition of the TV format as a unique, *sui generis* complex object of intellectual property to which a unique system of protection should be applied. This would include the possibility of its exploitation without the need for coordination of all persons who participated in the creation of the object and its easier legal protection. Other legal theorists, as well as TV industry experts, are advocating for a stronger and more concrete protection of the creators of TV formats from imitation, as legitimate original spiritual creations, which deserve to have their authors' material and property rights recognized (Koros, 2019).

On the other hand, Gottlieb (Gottlieb, 2010) is stated four main argument against for shields TV format via rights intellectual properties which se good luck in literature (1) excessive expansion traditional border intellectual property (2) the existence of another type of incentive to create formats, which diminishes the importance of legal protection, (3) the claim that such protection leads to economic inefficiency, and (4) intellectual property creates an unacceptable market monopoly. In this sense, Markovi ć (2018: 323) states would be should have stop further strengthening rights intellectual property s considering on " lack science verification not that society uses from the rights intellectual properties "

We stated that the basic economic role of intellectual property rights is to enable the subject of protection to realize material benefits from the economic exploitation of the subject of protection, which implies the exclusion of competition. However, right intellectual properties must allow for a compromise between for shields creator of intellectual property and his investments, on the one hand, and the need not to jeopardize the community's general interest in the development and expansion of cultural heritage, on the other hand (Marković, Popović, 2021). As the TV format is in the "gray zone of law" (Malbon, 2006: 128), the question of compromise between these two protective objects is crucial in the context of considering the legal nature and the possibility of protecting the

format through intellectual property rights, and especially through copyright protection.

TV format - author's work, general idea or technical instruction?

Creators of TV formats are most advocating for formats to be recognized as works of authorship protected by copyright. This is where the question of protecting the concept, that is, the "idea" of the format, arises as a dispute, and less often the problem of theft of indisputable author's elements, such as music or graphic elements, which rarely occurs in practice (Popović, 2014). For example, a plagiarist will generally avoid using the same music, logo or scenery, but the basic concept of the format will be very similar or identical.

In legal and media theory, there are different views regarding the possibility and expediency of copyright protection of the TV format and its special genres. For example, Bergman (2011) believes that reality formats, as a special type of TV format, must remain in the public domain, so as not to hinder creativity. Therefore, she states that reality formats, as the most spontaneous types of formats, cannot be subject to copyright protection. On the other hand, Chalaby (Chalaby, 2011) insists that TV formats do not consist only of ideas, but that great expertise is required in the process of their creation. Koros (2019) considers the format to be a concrete expression of an idea that has a structure of unique recognizable elements, and that it deserves copyright protection.

However, in the legislation of the Republic of Serbia, and in many countries around the world the television format is not provided as a special intellectual property which enjoys protection as a whole. It is not listed as a separate author's work either. According to *the Law on Copyright and Related Rights of the RS* "author work is original spiritual creation author expressed in certain form without regardless on the his artistic scientific or another value his purpose size content and the way manifestations like and admissibility public announcements his content " Our law belongs to the laws that contain an open list of possible works of authorship, in contrast to other, predominantly Anglo-Saxon legal systems, which provide precisely defined possible forms of works of authorship. Therefore, our law exemplifies examples of author's works written works speech works dramatic works etc. what is it so other forms are also possible, provided they meet the legally prescribed conditions In other words, author's work can be expressed and in someone to another form like that she can to be tena 's statement public. On the other hand, an idea as such does not enjoy protection until it receives a specific form that is while not be materialized in someone form (Vodinelic, 2017)

Therefore, the law does not protect ideas that are not materialized in some form. However, Marić believes that the provision of our law on the exclusion of general ideas from copyright protection is insufficiently precise, and that it should actually read "thought". In this way, the distinction between thought, as *an unmaterialized*

idea, and an idea that can be *expressed* in some form is better understood. Also, the question arises how to interpret the term "general ideas", which are explicitly excluded from protection. The same author believes that these should be very general "ideas, wishes and plans" to solve an issue, to do something, etc. In other words, not all ideas would be excluded from protection (provided they are materialized), but those that represent public goods, that are rudimentary, generally known, and the like (Marić, 2021). That is, if the idea is concretized, i.e. worked out in sufficient detail, it can be an author's work: "an idea as a concept or conception of an author's work already contains a proposal for how a certain question will be solved, the basic structure of what will grow into an author's work, and not only the author's intention to solve it" (Marić, 2021:60).

Procedures, methods of work, or mathematical concepts as such, as well as principles, principles and instructions contained in the author's work are also excluded from protection. This is particularly important to us for further analysis, because the essence of the dilemma is whether the constituent elements of TV format, its conceptual core, represent only mere concept that is general idea or technical instructions which they are not for the protégé author's by right or represent the original *expression* of the ideas which seem like such a can legally protect (Boppert, 2018).

Originality is also required for an author's work. The concept of originality does not mean that the work must be completely new, because every work stems from social and cultural tradition, but it must have certain elements that are original, as well as be a reflection of the author's personality (Popović, 2014). This means that the work must not be the result of deliberate or unconscious imitation of the existing cultural heritage, or intellectual work determined by rules that leave no room for the expression of personal spiritual originality.⁶¹

The TV format is not expressly intended as a separate author's work. This means that we have to look for the possibility of its protection in the general concept of author's work. In addition, following the example of the film, the TV format could be a kind of co-authored work, if the parts are inseparable or the co-authors had the goal of creating one joint work. On the other hand, the domestic legislation also provides for the existence of a combined part, in the sense that each part of the whole can be used separately, which would perhaps best suit the nature of this intellectual property. However, the many and varied elements of the TV format complicate this discussion, given that some of them can be seen as technical instructions, or belong to some other intellectual property right than copyright.

Since plagiarism, i.e. copying TV formats, is the subject of numerous disputes, it is necessary to analyze the concept of plagiarism. Jurisprudence recognizes two

⁶¹Judgment of the Commercial Court of Appeal Pž n5211/17 until June 14, 2018 (Stamenković, 2020).

types of plagiarism: conceptual and literal plagiarism. Plagiarism does not mean only taking verbatim words or notes from someone else's work, but also taking over the concept. Conceptual plagiarism would represent the taking over of the basic essence or structure of a certain work, with the determination of a variation on the basis of which a "new" author's work is created (Marić, 2021:89).

As the existing regulations and literature do not provide us with definitive answers, it is necessary to analyze examples from Serbian and foreign judicial practice. Jurisprudence regarding TV formats is not uniform.

Examples from court practice in the Republic of Serbia

Although there is not a large number of disputes in this area in the Republic of Serbia, nor is judicial practice a formal source of law, we will present, as an illustration of the problem, several judgments of domestic courts.

In the first case under analysis, the plaintiff devised a commercializable TV game that consisted of selling items by public bidding to the lowest unique bidder. He expressed this idea in detail in a brochure, which he then deposited in the Intellectual Property Office of the Republic of Serbia.⁶² After that, the plaintiff concluded a contract on business and technical cooperation with a television company on the basis of which a program based on the plaintiff's brochure was to be broadcast, in which citizens would send SMS messages and bid the lowest price for a certain product. However, the show was soon taken off the air. A few years after that, the defendant "State Lottery of Serbia" organized a game of chance "RTS auction" which was based on the simulation of an inverse auction (inverse auction) in which participants send bids via SMS messages to submit the lowest fictitious bids for the auction item. The plaintiff claimed that the defendant infringed his copyright and "stole" his idea for the show.

The court analyzed the factual situation and concluded that reverse auctions are based on an already known, standard principle that is similar to a traditional auction with a unique offer, as well as that this method of sale has become popular since 2002, and that the plaintiff's idea to sell goods to the public by tendering as a rule the lowest unique price offer, "which has materialized through the TV format by being broadcast on television, does not represent an author's work", i.e. that it is a public good and is not subject to copyright protection. The court also referred to the plaintiff's claim that he protected his copyright by registering with the Intellectual Property Office. The court stated that the registration and deposit of copyright works does not affect the creation of copyright, but serves only as information that a specific work has been registered

⁶²The Intellectual Property Office is a special organization in the system of state administration of the Republic of Serbia, whose competence is related to industrial property rights and copyright and related rights.

The first-instance court assessed that it was a general idea and not an author's work, and the defendants contested that the plaintiff's brochure was an author's work. According to the rules on the burden of proof ⁶³, the prosecutor was obliged to propose expert testimony " about whether it is an original spiritual creation, that is, that his idea of an auction at the lowest single price differs from all auctions of a similar genre in terms of its characteristics ", which he did not do. Therefore, the conclusion of the first-instance court, which was also confirmed by the appellate court, was that *prima facie* such auctions have existed since before, and that they represent a general idea, so they cannot enjoy copyright protection.⁶⁴

In the second case, it was about a synopsis ⁶⁵for a potential mega show program, which was registered in the register of works by domestic authors in 2008. The synopsis predicted that the top model, top model and photo model will be chosen in the show by a professional jury, a popular pop personality and by viewer voting via SMS messages According to the synopsis, some other details are specified, such as the goal of the show, the method of filming and possible candidates. In 2011, the defendant broadcast a series with a similar plot, with the consent of the American company, which registered the copyright of the series "ANTM" with the US Copyright Office. The lawsuit claimed that by broadcasting the disputed show in 2011, the defendant violated the plaintiff's copyright, because the broadcast series is identical to the idea and concept of the plaintiff's original work. The court concluded that the plaintiff's authorship was filed significantly later than the original American series, based on which the defendant's show was produced, registers n as author's work at the Institute of Statistics, which happened already in 2003. In addition, such a series was broadcast in other European countries

The expert gave his findings and opinion that the authorized synopsis of the plaintiff has elements of drafts, sketches, overview, but not the content, form and function of the script, that is, that the synopsis is not a script, and that similar shows existed before. As the plaintiff has registered a synopsis that has a great similarity with the format that has already been registered and broadcast in other countries, it cannot be considered that the defendant has violated the copyright of the plaintiff. The defendant derived his right to broadcast from the license of the copyright holder of the American company, whose authorship was recognized earlier. The court, however, did not deal with the issue of the nature of the synopsis as an author's work, given that the authorship in the specific case is

⁶³ Law on Civil Procedure ("Official Gazette of RS", no. 72/2011, 49/2013 - US decision, 74/2013 - US decision, 55/2014, 87/2018 and 18/2020), Art. 231.

⁶⁴Verdict of the Court of Appeal in Belgrade Gž4 132/18 19 May 2021.

⁶⁵As stated by Micić et al. (1980: 53): "A synopsis is the idea of a future work, in which its theme and idea are presented very succinctly." The length of the synopsis can vary, but it usually has several typed pages.

disputed because the defendant's show is based on a format that was registered earlier than the plaintiff did ⁶⁶

At the time of writing this paper, there is also a current case that attracted a lot of media attention in Serbia. It is a dispute between the creator of the TV show "Impression of the Week", a popular political *talk show* in which contact with viewers is possible, and in which celebrities are guests who express their impressions of the most current social events, on the one hand, and the co-author of the alleged plagiarism, of the "Hit-Twit" show, which is broadcast on no other television, on the other hand. The first-instance court concluded that the "Hit-tweet" format represents plagiarism of the plaintiff's author's work, deposited with the copyright agency for Serbia in 1995, that is, that her copyright was violated. However, the second-instance court annulled the verdict and sent it back to the first-instance court for decision.

Namely, the second-instance court stated that the first-instance was wrong in not hiring a third expert, because the experts of both sides gave different expert opinions. Although the experts agreed that in both cases they were "audiovisual works based on the model of a contact program with the presenter and guests in the studio and watched by voting for suggestions", the experts did not agree that the show "Hit-Tweet" represented plagiarism. The court referred to the fact that this form of program is not an original creation, because there were such shows before, which is a known fact, and that there must be some other similarities between the shows. As the dispute has not yet been concluded, we cannot give a final assessment, however, the opinion of the second-instance court is interesting that it is necessary to determine whether the original segments of the show were imitated, and whether there is something original in the show of the defendants.⁶⁷

Several conclusions can be drawn from these cases. First, depositing an author's work in the Intellectual Property Office does not make that work protected by copyright, but it is a significant relief when proving authorship. According to the Law on Copyright and Related Rights, whether a given case is an author's work or not depends on its originality, which is a factual question, on which the expertise of experts in this field is mainly performed. Second, it is up to the plaintiff to prove that his work is an author's work, that is, that the defendant's work is plagiarism. In the first example, the court itself referred to the fact that certain elements of the TV format, which was the subject of the dispute, are common good, that is, they do not have sufficient originality to enjoy copyright protection.

Due to the circumstances of these cases, unfortunately, we were deprived of a more detailed consideration of the courts on the elements of the originality of the TV format and what constitutes plagiarism.

⁶⁶Judgment of the Supreme Court of Cassation Rev 1026/2016, 16. 05. in 2018

⁶⁷ Decision of the Appellate Court in Belgrade Gž 4 201/21 24. 12. in 2021

Examples from foreign court practice

Foreign jurisprudence is far richer in terms of TV formats, but the courts have come to different conclusions. The case of *Green vs. Broadcasting Corporation of New Zealand* from 1989 represents a significant moment in the development of legal protection of TV formats which set a negative precedent for format creators in *common law* legal systems. Namely, presenter Huey Green sued the New Zealand Broadcasting Corporation for plagiarizing his talent show "Opportunity Knocks". The court ruled that his lawsuit was moot because the idea could not be protected by copyright. He also concluded that the format *is not a dramatic work* given that there is not enough unity or coherence.⁶⁸

The Federal Court of Germany had a similar argument in the case of *TV-Design v. SWR* which concerned the alleged imitation of the TV format "L'école des fans". The court stated that a TV format is *a set of instructions* for converting a particular TV program into a form, rather than a form in itself. Following instructions or a recipe for a television program cannot constitute copyright infringement. What can enjoy protection is *the screenplay* which really represents the author's work (FRAPA, 2011).

However, there are certain examples that show that courts still recognize copyright protection for TV formats, under certain conditions. In the case of *TV Globo & Endemol v. TV SBT* the Brazilian court took the view that *the production Bible* is an expression of an idea, which can be used as proof of the originality of the TV format. The court concluded that the *Big Brother format* is protected by copyright and that the show "Casa dos Artistas" was a copy. The judge stated the following, based on expert testimony:

"the enormous similarity between the two programs does not arise from coincidence, but from a poorly disguised and crude copy of the format of the Big Brother program .. (which) contemplates a program with a beginning, middle and end, with a detailed description, not only of the atmosphere in which people will live a certain time, but also the places where the cameras are placed. The format consists of details such as the use of microphones attached to the participants' bodies, connected 24 hours a day, musical styles, activities, etc."

It is interesting that in this case the court recognized the protection of both the artistic and technical elements of the format, such as camera positions, visual and audio elements, the aim of which is to present a certain dramatic situation, and concluded that the show "Casa dos Artistas" represented an infringement copyright of the author of the "Big Brother" format.

⁶⁸ Court of Appeal of New Zealand *Green c Broadcasting Corporation of New Zealand* [1988] 2 NZLR 490 CA

The "Big Brother" format was the subject of another dispute, but as a defendant. The plaintiff claimed that the "Survivor" format was a work of authorship, and that "Big Brother" was his plagiarism. The Dutch Supreme Court held that the combination of the twelve elements of the "Survive" format taken together is sufficiently unique and specific to be an original and therefore constitutes a protected work "as a whole". However, the court ruled that *Big Brother* is not a copy of this show (FRAPA, 2011).⁶⁹ Also interesting is the case of *Twentieth Century Fox Film Corporation v Zee Telefilms Ltd & Ors* in which the plaintiff claimed that the show constituted an unauthorized use of his series *24*. The court rejected the plaintiff's allegations and concluded that the themes of the series are general, but that the narratives are sufficiently different. The court stated that the mere similarity in the presentation of the series is not a sufficient basis for copyright protection. The court also laid out several important guiding principles regarding format protection. Namely, in order to show that the work is plagiarism, it is necessary that a significant part has been copied, namely the one that concerns quality, not quantity; no protection for idea, concept, principle or discovery, originality required; a mere theme or framework cannot be protected by intellectual property rights. However a unique and recognizable theme or action is protected as a literary or dramatic work.⁷⁰

In *Maradentro Producciones SL v Sogecable, SA* the Spanish court stated that formats *can in principle be protected by copyright* because copyright protects the script and story, drawings, plans, models, sketches. If the format can be compared to a story or screenplay then it must also be protected, but there must be a "qualitative leap from a mere general concept" that results in the creation of a complex creation, which is detailed and formally structured (FRAPA, 2011). In the spirit of the previous decision, in the case *Atomis Media, SA & Outright Distribción Ltd v Televisión De Galicia, SA & CTV, SA*⁷¹ from 2010, the Spanish court concluded that formats can be protected by copyright if they are created by a person, if they are expressed through a medium and if they are original. The court stated that the format must be similar to a screenplay or story. If the format consists of a series of elements, which are structured and combined in a certain way, it is not necessary that each individual element be original, but their unique combination enables copyright protection. In this particular case, the format was not protected as the court concluded that it was not original enough, and did not involve a "complex process" (FRAPA, 2011).

⁶⁹Supreme Court of the Netherlands, *Castaway Television Productions Ltd & Planet 24 Productions Ltd v. Endemol Entertainment & Jon De Mol Productions*, case no. C02/284HR, 2000. (FRAPA, 2011: 17-18).

⁷⁰Delhi High Court. *Twentieth Century Fox Film .. vs Zee Telefilms Ltd. & Ors.* on July 10, 2012. <https://indiankanoon.org/doc/72003037/>

⁷¹Court of Appeal in A Coruña, *Atomis Media, SA & Outright Distribution Ltd v. Television De Galicia SA & CTV, S.A.* July 31, 2010.

Some of the more recent decisions also recognize formats as being entitled to protection. Thus, the Italian Supreme Court of Cassation ruled in 2017 years⁷² concluded that TV formats can be protected in accordance with the Italian Copyright Law and clarified the conditions for such protection to be possible. Namely, a work can be qualified as a format if it has a logical and thematic connection consisting of a title, a basic narrative structure, scenography and fixed characters, which results in a structure that can be repeated. It was also stated that if a TV program consists mainly of improvised elements, it cannot be considered a format (Rosati, 2017)

It is interesting that in 2008, the Turkish Supreme Court of Appeal found that a TV format that is developed on the basis of the text and contains almost all the details, such as the specific wording that will be used during the announcement of commercials, camera lights and recording techniques will be protected as *scientific and literary work*⁷³In another dispute from 2016, Turkish the court is established that "a format that does not contain a detailed description will not enjoy copyright protection, because it does not reflect the characteristics of its author", which implies that formats that have characteristics and go beyond abstract explanations of ideas are protected by copyright.⁷⁴ Thus in Turkey, TV formats can enjoy protection under the Copyright Law provided that they express the characteristics of their authors and are particularly detailed (Basaran, 2019)

Discussion and conclusion

For years, the television industry has relied on TV formats as proven "bait" for viewers. Through sales and licensing on the international market, TV formats make a very profitable business. For these reasons, the creators of TV formats, their associations and the television industry advocate for more concrete and safer legal protection against plagiarism, primarily through copyright.

Based on the analyzed cases from foreign court practice, a wide range of decisions can be observed, ranging from completely rejecting the possibility of copyright protection for TV formats, because they are just an idea or a mere set of instructions, to the views that they can be protected as a dramatic work, on the condition that they are coherent enough, or as a script, if they are detailed enough, until the recognition of all elements of the TV format, including technical elements, as a unique whole that is protected by copyright.

⁷²RTI Reti Televisive Italiane Spa v Ruvido Produzioni Srl, Supreme Court, judgment 18633/17 (27 July 2017).

⁷³Judgment of the 11th civil department of the Supreme Court of Appeal no. E. 2008/5996, K. 2008/12126, dated November 3, 2008, (<http://www.kazanci.com>)

⁷⁴Judgment of the 11th Civil Department of the Supreme Court of Appeals no. E. 2015/10650, K. 2016/5199, dated May 9, 2016 (<http://www.kazanci.com>).

Also, with a certain reserve, one can observe the increasingly common tendency of the courts of different countries to recognize the possibility in principle of protecting TV formats as works of authorship and sanctioning those who have violated the property and moral rights of their authors. However, how the court will decide depends on several factors and the circumstances of each specific case. In short, the materialization of the idea of the format through a written text, brochure or script, which is sufficiently detailed, which contains both original and non-original elements, connected in such a way that they are undoubtedly an expression of the personality of the creator, is sufficiently elaborated that they are not a mere general idea, but to have an original, specific and recognizable structure. The most rudimentary ideas, genre features, and unoriginal elements of the format would not be copyrightable. Also, the way in which the notion of author's work is defined in legislation can play a role. Broader, open definitions of copyrighted works, or what constitutes infringement, leave more room for courts to adapt to socio-cultural and technical-technological innovations (Ohly, 2009).

After it has been determined that the TV format is an author's work, the next step is to analyze whether the defendant's program is a copy of it or not, that is, whether there has been a violation of the author's moral and property rights. It is mainly a factual question, which depends on the analysis of the court and the expertise of experts. What is clear is that the scope of copyright protection does not include non-original elements of the author's work. That is, if "copying" consists only in the adaptation of common places, ideas that are not original, but known from before and represent the common good, nor will it be sufficiently developed in principle that there will be no violation of rights. However, copying a certain number of original elements of the TV format (aspect of quantity) and such that they form the essence of what represents its originality (aspect of quality), certainly meets the conditions to be illegal.

In summary, in order for a certain person to succeed in his claim, he must first prove the existence of the author's work and that he is the author of that work. Then it is necessary to prove that the plagiarized work completely or substantially matches the original work, as well as that the other work was created later. A necessary element is that the plagiarized work was created by deliberate or negligent copying of the original work, that it was published without citing the original work, that it was published as one's own, and that the illegality of the publication is not exceptionally excluded⁷⁵

Starting from the fact that considerable creativity, knowledge, skill and effort go into designing many TV formats, it can be concluded that there are arguments in favor of its copyright protection. The creativity of the creators of the TV format is reflected in combining different elements into an original structure, based on their

⁷⁵ Verdict of the Appellate Court in Belgrade, Gž 4 no 92/17 25. 06. in 2018

own thinking, skill and creativity. Given that media companies express the need for new television formats, the issue of their protection will be relevant in the future as well. Moreover, new forms of human creativity embodied in complex media forms will require a new rethinking of legal protection and adaptation of regulations and their interpretation to contemporary circumstances.

Literature

1. Bechtold S. 2013. The Fashion of TV Show Formats. *Michigan State Law Review* 2013, (2): 451-512.
2. Bergman JE 2011. No More Format Disputes: Are Reality Television Formats the Proper Subject of Federal Copyright Protection? *The Journal of Business, Entrepreneurship & the Law* 4, (2). <https://digitalcommons.pepperdine.edu/jbel/vol4/iss2/1>
3. Boppert, P. 2018. What is the Status Quo of Copyright Protection for TV Formats in National Jurisdictions and Under International Treaties, and Does it Sufficient? <https://ssrn.com/abstract=3143110>
4. Bop Consulting (2010). Mapping the Creative industries: a toolkit. Creative and Cultural Economy series / 2. The British Council.
5. Başaran, S. 2019. Turkey: Protection Of TV Formats And Shows. <https://www.mondaq.com/turkey/copyright/867104/protection-of-tv-formats-and-shows>
6. Chalaby JK 2012. At the Origin of a Global Industry: The TV Format Trade as an Anglo-American Invention. *Media Culture & Society* 34, (1): 36-52. DOI:10.1177/0163443711427198
7. Chalaby J. K. in 2011 The Making of an Entertainment Revolution: How the TV Format Trade Became a Global Industry December 2011. *European Journal of Communication* 26, (4): 293-309.
8. Day LA 1978. A copyright dilemma: The TV form., *Journal of Broadcasting* 22 (2): 249-257, DOI: 10.1080/08838157809363882.
9. Department for Culture, Media and Sport. 2016. Creative Industries Economic Estimates. https://assets.publishing.service.gov.uk/media/5a80889a40f0b62305b8bb4e/Creative_Industries_Economic_Estimates_January_2016_Updated_201605.pdf
10. FRAPA, McKenzie, B. 2017. Frapa Legal Report 2017.
11. FRAPA. 2011. The FRAPA Report 2011: Protecting Format Rights. https://frapa.org/wp-content/uploads/Report/FINAL%20FRAPA_Report_2011.pdf
12. Gottlieb NE (2010). Free to Air? Legal Protection for TV Program Formats. John M. Olin Program in Law and Economics. Working Paper No. 513, Chicago: The University of Chicago, Law School.

13. Green S. 2010cha. Former executive producer at Reg Grundy and Fremantle Media, head of Powerlocal. Power Television, interview with author, June 4, 2010.
14. Joonseok C. 2019. The commodification of television formats: the role of distribution in the emergence of the commodity form. PhD thesis, University of Iowa. <https://doi.org/10.17077/etd.u8xu-wtw6>
15. Koros CD 2019. Protection of TV Formats: Legal vs. Non-Legal Approaches. *Queen Mary Law Journal* 10: 7.
16. Marković S., and Popović D. 2021. Intellectual property law. Belgrade: Faculty of Law, University of Belgrade.
17. Marić V. 2021. Originality of the author's work. Belgrade: Official Gazette.
18. Marković, SM, Miladinović, Z. 2014. Copyright parvo and related rights. Faculty of Law, University of Kragujevac.
19. Markovic SM 2018. Intellectual property law and information society. Belgrade: Official Gazette.
20. Moran A. 2004. New Television, New Formats. In; Adair, David & Albert Moran (eds.), *At the TV Format Coalface. Working Papers in Communication* 2/2004. Griffith, University, Brisbane.
21. Moran A., and Malbon, J. 2006. *Understanding the Global TV format.* UK: Intellect Books.
22. Meadow R. 1970. Television Formats – The Search for Protection. *California Law Review* 58 (4): 1169-1197.
23. Micić S., Babac M., Težak S., Vrabec M. 1980. *Foundations of film culture.* Novi Sad: Workers' University "Radivoj Chirpanov.
24. Ohly A. 2009. Economic rights, in: *Research handbook on the future of EU copyright*, edited by Estelle Declaire, Edward Elgar Publishing.
25. Popović D. 2014. Television formats as (not) protected intellectual property. *Annals of the Faculty of Law in Belgrade* 62, (1): 84-101.
26. Rosati E. 2017. Italian Supreme Court confirms availability of copyright protection to TV formats. *Journal of Intellectual Property Law & Practice*, 12, (12): 968-969 <https://doi.org/10.1093/jiplp/jpx197>.
27. Schmitt D., Bisson G., Fey C. 2005. *The global trade in television formats.* London, UK: Screen Digest Ltd and FRAPA with the support of the German Federal State of North Rhine-Westphalia.
28. Sylkina A. 2020. Approaches to Defining a Television Format as one of Intellectual Property Law objects: Ukrainian and Foreign Experiences. *European Journal of Sustainable Development* 9, (4): 364-375.

29. Stamenković J. 2020. Collections of case law of commercial courts in the field of intellectual property protection, book two (2016-2019). Belgrade: Official Gazette.
30. Intellectual property development strategy for the period from 2018 to 2022. "Official Gasnik RS", no. 78 of October 19, 2018.
31. Vodinelić VV 2017. Civil law: introduction to civil law and general part of civil law. Belgrade: Law Faculty of Union University, Official Gazette.

ANALIZA ODNOSA INDEKSA DIGITALNIH VEŠTINA I RAZVOJA EKONOMIJE

Dragana Stefanović⁷⁶, Ignjatijević Svetlana⁷⁷, Ivan Božović⁷⁸

doi: 10.59864/Oditor12408S

Pregledni rad

UDK: 330.341.1:[004:007

658:[004:007

Apstrakt

Prelazak iz industrijskog doba u doba znanja ili informatičko doba, podrazumeva usvajanje novih znanja i veština koje postaju glavni resurs poslovanja. Posledica konstantnih tehnoloških inovacija je potreba za novim znanjima i veštinama, kao što su digitalna pismenost i digitalne veštine, koje su postale jedan od najvažnijih resursa za razvoj industrije, a samim tim i ekonomije. Predmet istraživanja u ovom radu je analiza DSI indeksa (Digital Skill Index) za 2021. i 2023. godinu i DQL indeksa (Digital Quality of Life Index) za period od pet godina, sa ciljem da se izvrši komparacija podataka i ukaže na značaj koji posedovanje digitalnih veština i upotreba društvenih mreža ima na razvoj ekonomije. U istraživanju je korišćena kvantitativna metoda istraživanja i sprovedena je dinamička analiza DSI i DQL indeksa za Srbiju i komparativna analiza sa drugim zemljama u datom vremenskom periodu. Rezultati istraživanja DSI indeksa za 2021. i 2023. godinu za 36 zemalja Evrope pokazuju da su vodeće pozicije zauzele zemlje Severne Evrope, Holandija, Irska, Španija i Luksemburg, dok je Srbija zauzela 30. poziciju. Pojedine zemlje koje su zauzele središnje pozicije u tabeli 2019. godine, 2023. godine su nazadovale, odnosno napredovale, ali ne u značajnom nivou. Sa druge strane, analiza DQL indeksa za 50 zemalja sveta u periodu od 2019. do 2023. godine pokazuje da su evropske zemlje zauzele više od 50 odsto među najbolje rangiranim zemljama u celom vremenskom periodu, dok Srbija nije analizirana 2019. godine, ali je u naredne četiri analizirane godine dospela u prvih 50 rangiranih zemalja sveta. Takođe, u radu je prikazan značaj razvijenosti digitalnih veština i upotrebe društvenih mreža u rastu i razvoju ekonomije.

Ključne reči: DSI indeks, DQL indeks, digitalne veštine, društvene mreže, rast i razvoj ekonomije

⁷⁶ Asistent, Fakultet za ekonomiju i inženjerski menadžment u Novom Sadu, Cvećarska 2, 21000 Novi Sad, Srbija, e-mail: draganavstefanovic@gmail.com

⁷⁷ Redovni profesor, Fakultet za ekonomiju i inženjerski menadžment u Novom Sadu, Cvećarska 2, 21000 Novi Sad, Srbija, e-mail: ceca@fimek.edu.rs

⁷⁸ Vanredni profesor, dr Ivan Božović, Univerzitet u Prištini sa privremenim sedištem u Kosovskoj Mitrovici, Ekonomski fakultet, Kolašinska 156, Kosovska Mitrovica +381 63 85 50 947, E-mail: ivan.bozovic@pr.ac.rs

Uvod

Pojava Interneta transformisala je poslovanje i ubrzala razmenu informacija i komunikaciju kompanija sa potrošačima, ali i dobavljačima i drugim poslovnim partnerima. Mnogi poslovni procesi su postali efikasniji, zahvaljujući tehnološkim inovacijama i digitalnim veštinama. U industrijskom dobu glavni resursi su bili sredstva za rad, dok se u informatičkom dobu znanje smatra najvrednijim resursom poslovanja (Dašić, 2023, Vuković, et al., 2023). Prema Vidas-Bubanja i Bubanja (2016) „informaciono-komunikacione tehnologije su osnovna infrastruktura za inovacije u svim oblastima i ključna determinanta konkurentnosti država i kompanija u budućnosti“ (Ala-Mutka, 2011).

Tehnološke mogućnosti u vidu digitalnog povezivanja sveta menjaju način poslovanja kompanija (Perović & Đukić, 2023) i kreira se novi idnustrijski ekosistem koji menja poslovno okruženje kako bi se ono adaptiralo potrebama informacione ere (Vidas-Bubanja, Bubanja, 2016).

U korak sa tehnološkim napretkom i inovacijama, kompanije su shvatile značaj posedovanja digitalnih veština, a zatim ih okarakteriale kao jedan od prioriteta za sopstveni razvoj i prosperitet (Zupur & Janjetović, 2023; Vukosavljević et al., 2023). Ovaj trend prvo su usvojile i primenile velike korporacije, da bi se vremenom i mala i srednja preduzeća prilagodile novonastalim uslovima poslovanja. Kako su velike korporacije važan makroekonomski pokazatelj razvoja nacionalne ekonomije, tako su i mala i srednja preduzeća značajna karika u analizi kretanja GDP-a.

Digitalne veštine, digitalna pismenost i kompetencije se veoma često posmatraju kao sinonimi, stoga je važno obrazložiti razlike između ova tri pojma. Digitalnu kompetenciju Ala-Mutka (2011) definiše kao „sposobnost primene znanja i veština u različitim kontekstima, kao što su posao, slobodno vreme ili učenje“ (Vidas-Bubanja, Popovčić-Avrić, 2017). Prema van Deursenu and van Dajku (2011) „digitalna pismenost se odnosi na određene kompetencije i znanja, dok se digitalne veštine odnose na više tehničkih aspekata ovih kompetencija i znanja“ (Van Deursen & Van Dijk, 2011). Oni su prvobitno izdvojili četiri vrste veština koje su usmerene na praksu (Van Deursen & Van Dijk, 2011):

- 1.operativne veštine koje se odnose na operativnu manipulaciju softvera i hardvera,
- 2.formalne veštine koje podrazumevaju sposobnost razumevanja i upotrebe formalne karakteristike računara i Interneta,
- 3.informacione veštine odnosno veštine neophodne za pretraživanje, rukovanje digitalnim medijskim sadržajima, njihov izbor i kritičku procenu,
- 4.strateške veštine – kapacitet za korišćenje Interneta u svoju ličnu korist; da bi kasnije uvrstali i dodatne dve veštine, a to su:

5.veštine komunikacije

6.veštine kreiranja sadržaja (Van Deursen et al.,2014; Van Deursen & Van Dijk, 2014)

UNESCO (2018) definira digitalnu pismenost kao „sposobnost pristupa, upravljanja, razumevanja, integracije, komunikacije, procene i kreiranja informacija bezbedno i na odgovarajući način putem digitalnih tehnologija za zapošljavanje, pristojne poslove, i preduzetništvo. Uključuje kompetencije koje se odnose na kompjutersku pismenost, informaciono-komunikacionu tehnološku pismenost, informatičku pismenost i medijsku pismenost“ (UNESCO, 2018). Autori Tinmaz, Yoo-Taek, Fanea-Ivanovici i Baber (2022) ukazuju na uticaj digitalne pismenosti na različite aspekte ljudskih života, kao što su obrazovanje, poslovanje, zdravlje, upravljanje itd., te da bi za svaku od ovih dimenzija mogle sprovesti pojedinačne studije slučaja. Oni smatraju da je važno istražiti ulogu digitalne pismenosti posebno na doživotno učenje, obrazovanje uopšte, kao i efekte digitalnog usavršavanja na fleksibilnost tržišta rada (Tinmaz, et al., 2022).

Lopez (2013) smatra da je korišćenje društvenih mreža jedna od podvarijabli digitalne pismenosti(Lopez, 2013).

Struktura ovog rada usmeriće se na DSI indeks i DQL indeks, kao i na društvene mreže, kao značajan faktor digitalnih veština i njihov uticaj na rast i razvoj ekonomije. Metodologija rada obuhvatiće komparativnu analizu indeksa digitalnog kvaliteta života u nekoliko zemalja, uključujući i Srbiju, u vremenskom periodu od pet godina, kao i komparativnu analizu indeksa digitalnih veština za 36 zemalja Evrope za 2021.i 2023.godinu. Cilj rada je da se ukaže na realno stanje i pravce kretanja ka poboljšanju ovih vrednosti.

Digitalne veštine kao neizostavan faktor održivog poslovanja i razvoja

U uvodu ovog rada, dat je kratak pregled pojmova digitalna pismenost, digitalne veštine i digitalne kompetencije. U ovom poglavlju, biće detaljnije analizirane sličnosti i razlike ovih pojmova, a akcenat će svakako biti na digitalnim veštinama.

Pored van Deursenove (2011) već spomenute obuhvatnosti digitalnih veština, mnogi autori su nadograđivali ovu podelu, i istakli svoja poimanja digitalnih veština. Međutim, klasifikacija Dženkinsa (2006) se izdava jer polazi od zajednice i samih učesnika. Umesto da isključivo ističe pojedinačne atribute, Dženkins uokviruje ono što naziva nova medijska pismenost kao kulturne kompetencije i društvene veštine koje su razvijene kroz saradnju i umrežavanje, a definiše jedanaest različitih novih veština:

1. Igra –sposobnost da se eksperimentiše sa okolinom kao oblik rešavanja problema,

2. Učinak – sposobnost usvajanja alternativnih identiteta u svrhu improvizacija i otkrivanja,
3. Simulacija – sposobnost tumačenja i konstruisanja dinamičkih modela realnih svetskih procesa,
4. Prisivajanje – sposobnost smislenog uzorkovanja i izmene medijskih sadržaja,
5. Multitasking – mogućnost skeniranja okoline i pomeranja fokusa kao potrebe za istaknutost detalja,
6. Distribuirana kognicija – sposobnost smislene interakcije sa alatima kako bi se proširili mentalni kapaciteti,
7. Kolektivna inteligencija – sposobnost udruživanja znanja i upoređivanje beleški sa drugima u kretanju ka istom cilju,
8. Procena – sposobnost procene kredibiliteta i pouzdanosti različitih izvora informacija,
9. Transmedijska navigacija – sposobnost praćenja tokova priča i informacija uz pomoć različitih modaliteta,
10. Umrežavanje – sposobnost traženja, sinteze i širenja informacija,
11. Pregovaranje – sposobnost putovanja kroz različite zajednice, pronicljivost i poštovanje različitih perspektiva, i shvatanje i praćenje alternativne norme (Jenkins, 2006).

Značaj digitalne pismenosti i digitalnih veština, kao i kompetencija u savremenom poslovanju, ključni su faktori za održivost konkurentnosti i razvoja ekonomije. Zbog toga se od pojave Interneta pažljivo izučavaju efekti koje digitalna era ima na mikroekonomiju, a onda i na makroekonomiju. Digitalne veštine su jedan od osnovnog pokazatelja praćenja razvoja digitalne ekonomije, stoga se prati kretanje ovog pokazatelja u dužem vremenskom periodu i analiziraju razlozi takvog kretanja.

Digitalna pismenost i digitalne veštine su neizostavan element privatnog i poslovnog života danas, i veoma je malo industrija u kojima se ne traže ove veštine i znanja. Osim toga, znanja u digitalnoj sferi se konstantno unapređuju i inoviraju, te su posebne digitalne veštine često tražene od strane poslodavaca.

Đorđević i saradnici (2022) smatraju da su veštine neophodne u kontekstu globalizacije poslovanja: saradnja i timski rad, planiranje i organizovanje, osnovne digitalne veštine, prilagodljivost, upravljanje vremenom, pregovaranje, rešavanje konflikata, kreativno, inovativno i kritičko mišljenje, komunikacija, rešavanje problema itd. (Đorđević et al., 2022).

GSM Association (Global System for Mobile Communications) definiše mobilne digitalne veštine kao znanje i veštine neophodne za efektivnu i sigurnu upotrebu mobilnog telefona, mobilne usluge i mobilnog Interneta (2021). Pri tom, digitalne veštine nisu samo tehničke veštine koje su ljudima neophodne da koriste Internet, već obuhvataju niz kognitivnih i nekognitivnih veština kao one povezane sa

komunikacijom i medijskom pismenošću, bezbednošću i privatnošću (Jacobs, 2021).

Sa druge strane, ako posmatramo upotrebu Interneta i društvenih mreža u svrhu zabave, odnosno privatne svrhe, digitalna pismenost i digitalne veštine su važni faktori i za prevenciju sajber kriminalnih aktivnosti (Baltazarević, 2022).

Digitalna pismenost i digitalne veštine u svetu

UNESCO (2018) je proučio i analizirao oblasti kompetencija i digitalne pismenosti i referentne okvire ovih kategorija prikazao u tabeli 1, koje je kasnije istraživao u 47 zemalja u svetu, te ih razvrstao po geografskom regionu i nivou dohotka, što je prikazano u tabeli 2.

Tabela 1. DigCom 2.0 oblasti kompetencija i kompetencije (UNESCO, 2018)

Oblasti kompetencija	Kompetencije
1. Informatička pismenost i sposobnosti obrade podataka	1.1 Pregledanje, pretraživanje i filtriranje podataka, informacija i digitalnog sadržaja 1.2 Procena podataka, informacija i digitalnog sadržaja 1.3 Upravljanje podacima, informacijama i digitalnim sadržajem
2. Komunikacija i saradnja	2.1 Interakcija putem digitalnih tehnologija 2.2 Deljenje putem digitalnih tehnologija 2.3 Angažovanje u građanstvu putem digitalnih tehnologija 2.4 Saradnja putem digitalnih tehnologija 2.5 Pravila prikladnog ponašanja 2.6 Upravljanje digitalnim identitetom
3. Kreiranje digitalnog sadržaja	3.1 Razvoj digitalnog sadržaja 3.2 Integracija i ponovna razrada digitalnog sadržaja 3.3 Autorska prava i licence 3.4 Programiranje
4. Bezbednost	4.1 Zaštita uređaja 4.2 Zaštita ličnih podataka i privatnosti 4.3 Zaštita zdravlja i blagostanja 4.4 Zaštita okoline
5. Rešavanje problema	5.1 Rešavanje tehničkih problema 5.2 Identifikovanje potreba i tehnoloških odgovora

	5.3 Kreativna upotreba digitalnih tehnologija 5.4 Identifikacija nedostataka u digitalnim kompetencijama
--	---

<https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>

Tabela 2. Distribucija digitalne pismenosti i oblasti kompetencija u 47 zemalja po geografskim regionima i nivoima prihoda (UNESCO, 2018)

Geografski region	Nivo dohotka zemlje				Ukupno
	Visok	Srednje visok	Srednje nizak	Nizak	
1. Azija	1	3	7		11
2. Evropska Unija	1	1			2
3. Države sa visokim nivoom dohotka van EU	2				2
4. Latinska Amerika	1	4			5
5. Bliski Istok i Severna Afrika	4	4	4		12
6. Podsaharska Afrika		4	6	3	13
7. Ostale		1	1		2
Total	9	17	18	3	47

<https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>

Tabela 2. analizira nivo dohotka zemalja po regionima i okvire digitalne pismenosti u tim zemljama. Rezultati istraživanja koje je sproveo UNESCO su pokazala da multinacionalne kompanije imaju glavnu ulogu u uticaju na digitalne kompetencije i digitalnu pismenost, koje se podučavaju i procenjuju, naročito u zemljama u razvoju. Međunarodne kompanije ponekad održavaju kurseve i ispite, a ponekad u saradnji sa nacionalnim provajderima.

DSI indeks i DQL indeks

Digitalne kompetencije se mere na osnovu već navedenih pet stavki: Informatička i data pismenost, komunikacija i saradnja, kreiranje digitalnog sadržaja, bezbednost i rešavanje problema.

Evropska komisija analizira DESI (Digital Economy and Society Index) od 2015.godine i rangira 28 zemalja, članica Evropske Unije na osnovu sledećih pokazatelja:

1. Konekcija (pokrivenost domaćinstava Internet konekcijom, procenat korisnika brzog Interneta, mobilna konekcija),
2. Ljudski kapital (korisnici Interneta, osnovne digitalne veštine, ICT specijalisti, stručnjaci iz oblasti matematike, nauke i tehnologije),
3. Upotreba Interneta (vesti, muzika i zabava, video pozivi, društvene mreže, bankarstvo, kupovina),
4. Integracija digitalne tehnologije (deljenje informacija, društvene mreže, e-fakture, klad, identifikacija putem radio frekvencije, prodaja online, međunarodna online prodaja),
5. Digitalni javni servis (korisnici elektronskog javnog servisa, unapred popunjeni formulari, završavanje usluge online, dostupnost podataka).

Tek od 2021.godine Eurostat uvodi novi koncept, DSI indeks (Indeks digitalnih veština) kojim obuhvata zemlje članice EU, zemlje kandidate za članstvo u EU, potencijalne zemlje kandidate za članstvo u EU, Island, Švajcarsku i Norvešku. Za analizu DSI indeksa, odnosno digitalnih veština građana uzrasta od 16-74 godine, Eurostat ocenjuje sledeće indikatore:

1. **Veštine informacione pismenosti i sposobnosti obrade podataka** („Formulisanje potrebe za informacijama, lociranje i preuzimanje digitalnih podataka, informacija i sadržaja, procena relevantnosti izvora i njegovog sadržaja, skladištenje, upravljanje i organizovanje digitalnih podataka, informacija i sadržaja“ *),
2. **Veštine komunikacije i saradnje** („Sposobnosti pojedinaca za integraciju, komunikaciju i saradnju putem digitalnih tehnologija uz svest o kulturnim i generacijskim razlikama, socijalizacija kroz javne i privatne digitalne ustanove i participativno građanstvo, upravljanje sopstvenim digitalnim identitetom i reputacijom“ *),
3. **Veštine kreiranja digitalnog sadržaja** („Kreiranje i uređivanje digitalnog sadržaja, poboljšanje i integracija informacija i sadržaja u postojeći korpus znanja uz razumevanje načina na koja se autorksa prava i licence primenjuju, znanje za davanje razumljivih uputstava za računarski sistem“ *),

4. **Veštine bezbednosti** („Zaštita uređaja, sadržaja, ličnih podataka i privatnosti u digitalnom okruženju, zaštita psihičkog i fizičkog zdravlja, biti svestan uticaja digitalnih tehnologija na društveno blagostanje i socijalnu inkluziju, biti svestan uticaja digitalnih tehnologija na životnu sredinu i njihovu upotrebu“ *),
5. **Veštine rešavanja problema** („Identifikacija potreba i problema i rešavanje konceptualnih problema u digitalnom okruženju, upotreba digitalnih alata za inoviranje procesa i proizvoda, biti u toku sa digitalnom evolucijom“ *⁷⁹).

Vremenski okvir koji se odnosio na upotrebu Interneta je bio 3 meseca, a svaki od ovih indikatora se ocenjuje kao osnovni nivo, nivo iznad osnovnog nivoa i bar osnovni nivo: osnovni nivo ili iznad osnovnog nivoa. Istraživanje je sprovedeno na uzorku od 75% populacije u analiziranim zemljama 2021.godine i 2023.godine.

Na osnovu ovih elemenata, Eurostat je rangirao zemlje prema nivoima digitalnih veština.

Tabela 3. Kriterijumi na osnovu kojih su određeni nivoi digitalnih veština

Nivo		
1	Pojedinci sa osnovnim ili nivoom iznad osnovnih digitalnih veština	Svih pet indikatora su ocenjeni kao osnovni nivo ili nivo iznad osnovnog nivoa dig.veština
2	Pojedinci sa nivoom iznad osnovnih digitalnih veština	Svih pet indikatora su ocenjeni kao iznad osnovnog nivoa dig. veština
3	Pojedinci sa osnovnim nivoom digitalnih veština	Svi indikatori su ocenjeni kao nivo osnovnih dig. veština ili nivo iznad osnovnih dig. veština, ali nisu svi indikatori ocenjeni kao nivo iznad osnovnih dig.veština
4	Pojedinci sa niskim nivoom digitalnih veština	4/5 indikatora su ocenjeni kao nivo osnovnih ili nivo iznad osnovnih dig.veština
5	Pojedinci sa neadekvatnim nivoom digitalnih veština	3/5 indikatora su ocenjeni kao nivo osnovnih ili nivo iznad osnovnih dig.veština
6	Pojedinci sa ograničenim nivoom digitalnih veština	2/5 idnikatora su ocenjeni kao nivo osnovnih ili nivo iznad osnovnih dig.veština
7	Pojedinci bez osnovnog nivoa digitalnih veština	Bez osnovnih dig.veština

⁷⁹ *Definicija u okviru Digital Competence Framework 2.0

8	Nivo digitalnih veština nije mogao da se utvrdi	Pojedinci nisu koristili Internet u poslednja 3 meseca
---	---	--

https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en

Tabela 4. Nivo digitalnih veština pojedinaca za 2021. godinu

R.br	Država	Nivo 1 (Nivo 2 +Nivo 3) %	Nivo 2 %	Nivo 3 %	Nivo 4 %	Nivo 5 %	Nivo 6 %	Nivo 7 %	Nivo 8 %
1	Island	80.99	44.77	36.23	12.10	4.93	0.74	0.68	0.56
2	Finska	79.18	48.13	31.04	12.58	3.59	1.02	0.33	3.29
3	Holandija	78.94	51.77	27.18	11.40	3.39	0.46	0.32	5.48
4	Norveška	78.71	42.59	36.12	15.03	4.33	0.86	0.49	0.58
5	Švajcarska	77.79	40.26	37.53	12.22	4.60	2.17	1.36	1.86
6	Irska	70.49	39.69	30.80	14.17	7.60	4.83	1.85	1.07
7	Danska	68.65	37.37	31.27	20.17	8.04	1.14	0.89	1.11
8	Švedska	66.60	35.68	30.92	17.92	7.93	2.78	1.53	3.24
9	Španija	64.16	38.06	26.11	15.44	7.44	4.47	2.39	6.10
10	Luksemburg	63.79	31.81	31.98	20.41	8.32	4.70	1.44	1.34
11	Hrvatska	63.37	31.18	32.19	11.57	4.73	1.49	0.10	18.75
12	Austrija	63.33	33.28	30.05	16.95	6.82	3.38	2.05	7.47
13	Francuska	61.96	31.25	30.71	16.07	8.47	3.74	1.32	8.45
14	Malta	61.23	35.49	25.74	15.45	6.09	3.25	1.46	12.53
15	Češka	59.69	24.06	35.63	17.36	8.42	2.42	0.96	11.15
16	Estonija	56.37	27.68	28.69	19.13	9.82	3.37	2.28	9.02
17	Portugal	55.31	28.54	26.76	12.64	6.99	4.76	2.60	17.69
18	Slovačka	55.18	20.83	34.36	18.15	8.93	4.40	2.26	11.07
19	Belgija	54.23	26.34	27.89	18.59	11.71	5.24	3.01	7.21
20	Grčka	52.48	21.70	30.78	10.64	7.86	5.45	2.07	21.51
21	Letonija	50.80	23.79	27.01	20.70	12.37	5.05	2.37	8.70
22	Kipar	50.21	20.95	29.26	20.58	10.07	6.98	2.92	9.24

23	Slovenija	49.67	19.72	29.95	20.48	11.21	4.80	2.84	11.00
24	Mađarska	49.09	21.54	27.56	20.51	11.91	4.98	2.14	11.36
25	Nemačka	48.92	18.84	38.88	21.22	11.51	6.19	3.58	8.57
26	Litvanija	48.84	23.01	25.83	18.61	10.41	5.84	3.23	13.07
27	Crna Gora	47.21	9.14	30.08	25.44	7.91	1.65	0	17.78
28	Italija	45.60	22.52	23.08	16.34	9.84	6.12	3.69	18.41
29	Poljska	42.93	20.64	22.28	18.82	11.45	7.31	4.88	14.63
30	Srbija	41.30	12.32	28.97	18.67	10.48	6.65	4.08	18.83
31	Bosna i Hercegovina	34.65	5.35	29.29	21.53	10.17	7.17	2.16	24.32
32	Severna Makedonija	34.62	8.15	26.48	18.28	15.93	11.71	5.85	13.60
33	Bugarska	31.18	7.82	23.36	14.51	11.67	11.75	6.16	24.73
34	Turska	30.12	9.87	20.25	19.64	14.34	10.00	7.32	18.59
35	Rumunija	27.82	8.73	19.09	16.53	14.23	14.88	10.13	16.41
36	Albanija	23.80	4.01	19.79	16.80	17.39	14.42	6.96	20.63

https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en

U tabeli je rangirano 36 država na osnovu nivoa digitalnih veština, s tim da su prvorangirane zemlje one koje imaju najviše procenat nivoa 1, a koji predstavlja zbir nivoa 2 i nivoa 3, odnosno procenat pojedinaca sa nivoom iznad osnovnih digitalnih veština i procenat pojedinaca koji poseduju osnovne digitalne veštine. Analizom ostalih vrednosti, vidimo da ostali procenti pojedinaca u ostalim nivoima (nivo niskih digitalnih veština, nivo neadekvatnih digitalnih veština, nivo ograničenih digitalnih veština i nivo bez osnovnih digitalnih veština) nužno ne prate sled opadajućih vrednosti u poređenju sa vrednostima nivoa 1, odnosno zbira nivoa 2 i nivoa 3. Republika Srbija je na ovoj rang listi zauzela 30.poziciju sa sledećim vrednostima: Nivo 1 (41.30%), Nivo 2 (12.32%) i Nivo 3 (28.97%), što znači da ukupan procenat ispitanika koji poseduju nivo osnovnih digitalnih veština i nivo iznad osnovnih digitalnih veština manji od 50%, tačnije iznosi 41.30%. Kada je u pitanju Nivo 4 koji predstavlja procenat pojedinaca sa niskim nivoom osnovnih digitalnih veština, ta vrednost je 18.67%, procenat pojedinaca sa neadekvatnim nivoom digitalnih veština (nivo 5) iznosi 10.48% , a sledi 6.65% pojedinaca sa ograničenim nivoom digitalnih veština (nivo 6) i 4.08% pojedinaca bez osnovnih digitalnih veština (nivo 7). I na kraju nivo 8 sa vrednošću od 18.83% pojedinaca za koje nije bilo moguće utvrditi nivo digitalnih veština, jer nisu koristili Internet u poslednja tri meseca. Taj procenat je izuzetno veliki s obzirom da je to otprilike petina ispitanika. Negativan značaj ova vrednost dobija naročito

ako se uzme u obzir pandemija Covid-19, koja je u veoma kratkom roku transformisala učenje i rad uživo u digitalnu sferu.

abela 5. Nivo digitalnih veština pojedinaca za 2023.godinu

R.br	Država	Nivo 1 (Nivo 2 +Nivo 3) %	Nivo 2 %	Nivo 3 %	Nivo 4 %	Nivo 5 %	Nivo 6 %	Nivo 7 %	Nivo 8 %
1	Holandija	82.70	54.53	28.16	12.12	3.43	0.65	0.25	0.85
2	Finska	81.99	53.63	28.36	11.28	3.01	0.80	0.62	2.30
3	Norveška	81.09	50.71	30.38	14.66	3.24	0.29	0.39	0.32
4	Švajcarska	77.52	42.69	34.83	13.21	5.42	1.81	1.29	0.75
5	Danska	69.62	39.37	30.25	19.62	7.12	1.54	0.90	1.20
6	Češka	69.11	35.48	33.63	13.89	5.32	2.59	1.13	7.96
7	Irska	68.65	37.88	30.77	15.93	7.31	3.34	0.65	4.12
8	Švedska	66.44	36.51	29.93	19.57	8.19	2.37	1.03	2.41
9	Španija	66.18	38.65	27.52	15.25	7.15	4.36	2.51	4.55
10	Austrija	64.68	32.04	32.64	17.01	7.49	4.13	2.03	4.67
11	Malta	63.02	36.98	26.04	16.68	7.52	3.52	1.34	7.93
12	Estonija	62.61	34.84	27.76	17.40	8.06	3.23	1.89	6.80
13	Luksemburg	60.14	27.86	32.28	20.13	10.16	5.05	3.87	0.65
14	Francuska	59.67	30.62	29.06	16.73	9.30	4.65	2.48	7.17
15	Belgija	59.39	28.26	31.12	18.46	10.30	4.36	2.12	5.37
16	Hrvatska	58.95	25.00	33.94	15.93	6.27	2.16	0.09	16.60
17	Mađarska	58.89	28.13	30.76	18.60	8.54	3.89	1.53	8.55
18	Portugal	55.97	29.93	26.04	14.39	7.59	5.15	2.69	14.21
19	Litvanija	52.91	25.90	27.01	16.40	10.34	6.07	2.79	11.50
20	Grčka	52.40	20.02	32.38	14.98	8.51	6.31	2.81	14.99
21	Nemačka	52.22	19.79	32.43	20.89	11.44	5.61	2.32	7.52
22	Crna Gora	52.02	10.55	41.48	25.44	7.61	3.15	0.14	11.64
23	Slovačka	51.31	21.70	29.61	19.30	10.55	4.00	2.05	12.79
24	Kipar	49.46	24.96	24.51	23.51	9.64	6.35	2.27	8.78
25	Slovenija	46.70	18.88	27.82	20.64	12.86	6.48	3.71	9.62
26	Italija	45.75	22.21	23.54	18.23	10.70	7.15	5.09	13.08

27	Letonija	45.34	16.55	28.79	22.22	15.82	6.30	2.65	7.67
28	Poljska	44.30	20.05	24.25	20.36	11.56	6.41	3.79	13.59
29	Bugarska	35.52	7.73	27.79	15.59	13.36	10.03	5.88	19.61
30	Turska	33.11	10.61	22.51	20.91	16.60	9.05	6.29	14.03
31	Srbija	32.81	12.17	20.64	31.33	11.15	7.27	2.80	14.64
32	Bosna i Hercegovina	30.08	6.88	23.20	23.94	13.65	10.75	4.96	16.62
33	Rumunija	2.73	8.97	18.77	18.73	17.47	15.35	9.91	10.80
34	Island	:	:	:	:	:	:	:	:
35	Severna Makedonija	:	:	:	:	:	:	:	:
36	Albanija	:	:	:	:	:	:	:	:

https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en

Rezultati DSI indeksa za 2023.godinu su pokazali negde manje značajne, a negde značajnije razlike u odnosu na DSI indeks 2021. godine. Prvo što je važno napomenuti je da podaci 2023.godine nisu prikupljeni i analizirani za svih 36 zemalja, kao 2021.godine, odnosno nedostaju podaci za Island, Severnu Makedoniju i Albaniju. Kada su u pitanju Severna Makedonija i Albanija, one su 2021.godine zauzele niske pozicije, međutim interesantno je da je Island 2021.godine imao lidersku poziciju kada je u pitanju indeks digitalnih veština u Evropi.

S obzirom na nedostatak podataka za Island za 2023.godinu, koja je 2021.godine imala vodeću poziciju, sada je vodeću poziciju preuzela Holandija sa 82.70% populacije koja poseduje osnovni nivo digitalnih veština ili nivo iznad osnovnog. Finska je zadržala drugu poziciju sa nešto većim procentom populacije sa osnovnim nivoom digitalnih veština i nivoom iznad osnovnog, 2021.godine procenat je iznosio 79.18, a 2023.godine iznosi 81.99%. U samom vrhu, pozicije su zadržale i Norveška, Švajcarska, Irska, Švedska, Danska i Španija, dok su se u odnosu na 2021.godinu, kada se među prvih 10 rangiranih zemalja nalazio i Luksemburg, sada su se tu našle Češka i Austrija. 2021.godine Češka je bila na 15.poziciji, dok je 2023.godine vrednost njenog DSI ideksa zabeležila skok na čak 6.poziciju. Luksemburg je spao sa 10.mesta na 13.mesto, što ne predstavlja značajniju promenu. Isto tako, Austrija je 2021.godine zauzela 12.mesto, a 2023.godine je zabeležila rast na 10.mesto.

Što se ostalih značajnih promena tiče, Belgija beleži pad za 4 pozicije 2023.godine u odnosu na 2021.godinu, Hrvatska pad za 5 pozicija, isto kao i Slovačka, dok su Turska, Bugarska, Nemačka i Estonija zabeležile rast za 4

pozicije. Najveći rast zabeležile su Mađarska i Litvanija, čak za 7 pozicija, a zatim Letonija rast za 6 pozicija i Crna Gora rast za 5 pozicija.

Kada je Srbija u pitanju, ona je zabeležila pad za jednu poziciju i u odnosu na 30.poziciju koju je zauzela 2021.godine, vrednost DSI indeksa Srbije 2023.godine zauzima 31.poziciju. Ipak, zbog nedostatka podataka za Island, Albaniju i Severnu Makedoniju za 2023.godinu, ovi rezultati ne predstavljaju u potpunosti realnu sliku. Ali, ono što se može zaključiti je da su prvih deset pozicija obe godine zabeležile većinom iste zemlje, i to zemlje Severne i Zapadne Evrope.

U nastavku rada, analizira se DQL indeks (Digital Quality of Life) na globalnom nivou za period od 2019-2023.godine te ćemo napraviti komparaciju rezultata, odnosno sličnosti i razlike sa DSI indeksom.

DQL Indeks (The Digital Quality of Life) razmatra sledeće faktore na osnovu kojih rangira 121 državu po indeksu digitalnog kvaliteta života:

1. Pristupačnost Interneta,
2. Kvalitet Interneta,
3. Elektronska infrastruktura,
4. Elektronska bezbednost,
5. Digitalizacija državnih ustanova.

Ovi kriterijumi se razmatraju od 2020.godine, dok su se 2019. godine razmatrali malo drugačiji elementi za manji broj država, tačnije 65. Ti elementi su:

1. Brzina interneta,
2. Sajber bezbednost zemlje,
3. Dostupnost usluga e-uprave,
4. Dostupnost i raznovrsnost e-zabave,
5. Prisustvo zakona o zaštiti ličnih podataka.

Među analiziranim zemljama 2019.godine nema Republike Srbije, dok je Kina uključena u izveštaj, ali kao poseban slučaj. U analizi 2020. godine, razmatrano je 85 država, među kojima se nalazi i Srbija. Za 2021.godinu broj analiziranih zemalja je povećan na 110, dok je za 2022.godinu broj analiziranih zemalja iznosio 117. 2023.godine analizirana je 121 država.

Tabela 6. DQL Index u periodu od 2019-2023. godine

R.b r	Država	DQL Index 2019.	Država	DQL Index 2020.	Država	DQL Index 2021.	Država	DQL Index 2022.	Država	DQL Index 2023.
1	Australija	0.7992	Danska	0.79	Danska	0.8313	Izrael	0.7610	Francuska	0.7902
2	Francuska	0.7985	Švedska	0.79	J. Koreja	0.7608	Danska	0.7347	Finska	0.7483
3	Singapur	0.7854	Kanada	0.78	Finska	0.7562	Nemačka	0.7123	Danska	0.7377

4	Norveška	0.7607	Francuska	0.77	Izrael	0.7387	Francuska	0.7105	Nemačka	0.7357
5	Japan	0.7606	Norveška	0.75	USA	0.7360	Švedska	0.6895	Luxemburg	0.7357
6	Kanada	0.7516	Holandija	0.74	Singapur	0.7192	Holandija	0.6843	Španija	0.7232
7	Danska	0.7479	UK	0.74	Francuska	0.7128	Finska	0.6826	Estonija	0.7185
8	J. Koreja	0.7448	Izrael	0.73	Švajcarska	0.7093	Japan	0.6785	Austrija	0.7166
9	Italija	0.7361	Japan	0.72	Nemačka	0.7071	UK	0.6685	Švajcarska	0.7106
10	Švedska	0.7360	Poljska	0.72	UK	0.7065	J. Koreja	0.6660	Singapur	0.7096
11	SAD	0.7341	Finska	0.71	Holandija	0.7060	Litvanija	0.6648	Švedska	0.7079
12	Holandija	0.7331	Singapur	0.71	Japan	0.6983	USA	0.6572	Holandija	0.7063
13	Izrael	0.7269	Estonija	0.7	Švedska	0.6972	Švajcarska	0.6570	Litvanija	0.6957
14	Švajcarska	0.7223	Austrija	0.7	Norveška	0.6916	Estonija	0.6554	Rumunija	0.6944
15	Španija	0.7061	Švajcarska	0.7	Luxemburg	0.6867	Singapur	0.6547	UK	0.6296
16	Island	0.7045	Nemačka	0.69	Litvanija	0.6863	Španija	0.6533	Japan	0.6807
17	UK	0.7035	Novi Zeland	0.69	Australija	0.6835	Norveška	0.6389	Izrael	0.6660
18	Finska	0.7033	Španija	0.69	Španija	0.6744	Luksemburg	0.6347	Poljska	0.6613
19	Nemačka	0.6914	Australija	0.68	Estonija	0.6662	Italija	0.6330	SAD	0.6598
20	Novi Zeland	0.6872	Italija	0.67	Kanada	0.6635	Portugal	0.6260	J. Koreja	0.6559
21	Belgija	0.6690	Litvanija	0.67	Austrija	0.6620	Belgija	0.6235	Belgija	0.6540
22	Austrija	0.6687	SAD	0.67	Kina	0.6529	Austrija	0.6214	Kanada	0.6527
23	Litvanija	0.6553	Slovenija	0.67	Novi Zeland	0.6492	Poljska	0.6150	Irska	0.6501
24	Mađarska	0.6529	Belgija	0.66	Irska	0.6459	Irska	0.6149	Italija	0.6500
25	Portugal	0.6478	Mađarska	0.65	Belgija	0.6360	Češka	0.6123	Češka	0.6477
26	Poljska	0.6442	Bugarska	0.65	Poljska	0.6360	Kanada	0.6038	Norveška	0.6452
27	Rusija	0.6439	Letonija	0.65	Italija	0.6352	Mađarska	0.5999	Novi Zeland	0.6432
28	Estonija	0.6431	Irska	0.64	Češka	0.3267	Novi Zeland	0.5966	Letonija	0.6391
29	Slovenija	0.6302	Portugal	0.63	Slovačka	0.6210	Slovačka	0.5932	Portugal	0.6360
30	Irska	0.6242	Slovačka	0.62	Portugal	0.6176	Bugarska	0.5907	Australija	0.6324
31	UAE	0.6215	UAE	0.62	Malezija	0.6108	Hrvatska	0.5880	Kipar	0.6299
32	Indija	0.6165	Češka	0.61	Mađarska	0.6083	Slovenija	0.5867	Malta	0.6239
33	Rumunija	0.6110	Katar	0.61	Katar	0.6050	Letonija	0.5854	Slovačka	0.6215

34	Katar	0.6057	Hrvatska	0.6	Rumunija	0.5975	Rumunija	0.5847	Mađarska	0.6149
35	Turska	0.6049	Kipar	0.6	Kipar	0.5951	Australija	0.5806	Slovenija	0.6148
36	Slovačka	0.5867	Urugvaj	0.59	Slovenija	0.5950	Malta	0.5747	Hrvatska	0.6057
37	Meksiko	0.5846	Grčka	0.58	Hrvatska	0.5932	Kipar	0.5683	Malezija	0.5869
38	Hrvatska	0.5832	Kina	0.58	Grčka	0.5879	Malezija	0.5580	UAE	0.5821
39	Letonija	0.5791	Rumunija	0.58	Bahrain	0.5873	Grčka	0.5561	Grčka	0.5781
40	Južna Afrika	0.5738	Azerbejdžan	0.57	Malta	0.5834	Čile	0.5481	Bugarska	0.5704
41	Malezija	0.5727	Malezija	0.57	Letonija	0.5785	Urugvaj	0.5472	Urugvaj	0.5652
42	Urugvaj	0.5702	Rusija	0.57	UAE	0.5735	Rusija	0.5325	Čile	0.5625
43	Ukrajina	0.5639	Kuvajt	0.54	Čile	0.5713	Kina	0.5261	Argentina	0.5624
44	Čile	0.5624	Turska	0.54	Tajland	0.5672	UAE	0.5130	Kina	0.5577
45	Češka	0.5598	Saudijska Arabija	0.53	Bugarska	0.5664	Argentina	0.5106	Saudijska Arabija	0.5365
46	Albanija	0.5564	Makedonija	0.52	Srbija	0.5654	Katar	0.5088	Ukrajina	0.5295
47	Kina	0.5548	Kazahstan	0.52	Ukrajina	0.5640	Jermenija	0.5052	Kazahstan	0.5280
48	Grčka	0.5534	Argentina	0.52	Filipini	0.5584	Srbija	0.4976	Katar	0.5277
49	Gruzija	0.5499	Srbija	0.52	Argentina	0.5573	Tajland	0.4904	Brazil	0.5245
50	Azerbejdžan	0.5312	Meksiko	0.52	Saudijska Arabija/ Moldavija	0.5523	Ukrajina	0.4893	Srbija	0.5236

<https://surfshark.com/dql>, <https://surfshark.com/dql2020>, <https://surfshark.com/dql2021>,
<https://surfshark.com/dql2022>, <https://surfshark.com/dql2023>

Poredeći DQL Indekse za rangiranih 50 zemalja u periodu od 2019.godine do 2023.godine, neophodno je istaći da su kriterijumi po kojima je vršeno rangiranje 2019.godine drugačiji u odnosu na kriterijume narednih godina, zbog čega izvor, Surfshark, ističe da su indeksi od 2020.godine do 2023.godine upoređljivi. Ono što je već navedeno, ali važno za analizu, jeste da se sa godinama povećavao broj zemalja čiji DQL je analiziran, kao i da Srbija nije bila među analiziranim zemljama 2019.godine. Na ovom prikazu predstavljene su vrednosti DQL Indeksa za 50 zemalja širom sveta, kao i kretanja ovog indeksa po godinama i zemljama, na osnovu kojeg su pojedine države zauzimale višu ili nižu poziciju, dok su se neke države prvi put pojavile među prvih 50, a neke spale na poziciju ispod 50.mesta.

Analizom pokazatelja DQL za svih pet godina, evidentno je da su evropske države zauzele više od 50 % među 50 najbolje rangiranih zemalja. Naročito se ističu zemlje Skandinavije, koje su svake godine zauzele neke od prvih deset

pozicija, a interesantno je da su 2023. godine prvih devet pozicija na listi zauzele evropske zemlje.

Što se Srbije tiče, analiza DQL Indexa u Srbiji počela je od 2020.godine i vrednosti za period od 2020-2023 godine pokazuju da se Srbija nalazi među prvih 50 rangiranih zemalja, i to 2020.godine je zauzela 49.poziciju sa indeksom 0.52, zatim 2021.godine Srbija je napredovala na 46.poziciju sa indeksom 0.5654, da bi 2022.godine nazadovala do 48.pozicije sa indeksom 0.4976, i na kraju 2023.godine Srbija je zauzela 50.poziciju sa indeksom 0.5236.

Komparacija rezultata DSI indeksa i DQL indeksa pokazuje odnosno potvrđuje da se u vrhu rangiranih zemalja nalaze zemlje Severne i Zapadne Evrope, a za Srbiju je važno da iako je u rangiranju DSI indeksa (36 zemalja Evrope), u rangiranju DQL indeksa na globalnom nivou zauzela pozicije među prvih 50 zemalja, u odnosu na rangiranih 85,110,117 i 123 zemalja respektivno. To znači da je Srbija poslednjih nekoliko godina ostala konstantna kada je u pitanju ulaganje u digitalnu transformaciju i sticanje digitalnih veština.

Odnos DQL indeksa, DSI indeksa i razvoja ekonomije

Surfshark pruža i kratku analizu DQL indeksa i GDP-a po glavi stanovnika, pri čemu daje jasan zaključak da su države sa manjim DQL indeksom upravo i države sa manjom vrednošću GDP-a po glavi stanovnika. Rast vrednosti DQL indeksa od 0.0300 bi moglo potencijalno uticati na rast od 10.000,00 dolara GDP-a po glavi stanovnika zemlje. Ipak, 2019.godine, nekoliko zemalja je pokazalo iznenađujuće dobre performanse u određenim digitalnim oblastima, uprkos malim vrednostima GDP-a po glavi stanovnika. To su: Rusija, Mađarska, Portugal, Poljska, Estonija, Slovenija, Litvanija, Indija, Rumunija i Turska. Srednja vrednost DQL indeksa iznosi 0.6110/1.000, što ukazuje da je digitalni kvalitet života na osnovu ovog faktora prosečan. Ni jedna zemlja nije ostvarila vrednost preko 0.800 ukazujući da je bilo prisutno mnogo nedostataka u različitim oblastima. Od suštinskog značaja je i dobro razvijena Internet infrastruktura, a ključ je u investicijama u mobilni Internet. Kada su u pitanju zakoni o zaštiti ličnih podataka, 62 od 65 analiziranih zemalja ima zakone o zaštiti ličnih podataka, međutim u mnogim slučajevima je posvećenost zaštiti ličnih podataka nerealna.

Prema izveštaju za 2020.godinu ističe se da napredak u e-infrastrukturi korespondira sa ekonomskim bogatstvom samo do određene tačke. Države sa vrednostima GDP-a po glavi stanovnika iznad proseka ne garantuju bolje internet tehnologije ili veće upotrebe interneta (Milenković et al., 2023). Tri zemlje sa relativno visokim vrednostima GDP-a po glavi stanovnika, Kuvajt, Bahrain i Saudijska Arabija, su podbacile kada su u pitanju nivo kvaliteta Interneta i elektronske bezbednosti.

Vrednosti DQL indeksa i njihova analiza pokazuje da ulaganja u elektronsku infrastrukturu i digitalizaciju državnih ustanova imaju najveći doprinos

poboljšanju digitalnog kvaliteta života ljudi, dok se pristupačnost Interneta pokazala kao najmanje važan faktor za DQL indeks. Kada je u pitanju GDP po glavi stanovnika, izveštaj pokazuje da njegova vrednost nužno ne određuje kvalitet elektronske infrastrukture države. U odnosu na 2020.godinu, uticaj GDP-a po glavi stanovnika na elektronsku bezbednost je 2021.godine opao. Srbija je, uz još 20 zemalja, među kojima su i zemlje regiona: Hrvatska, Bugarska, Rumunija i Mađarska, su nadmašile ostale zemlje u obezbeđivanju viših nivoa elektronske bezbednosti i elektronske infrastrukture. Iako GDP po glavi stanovnika u velikoj meri korespondira sa DQL indeksom, postoje zemlje koje imaju bolji digitalni kvalitet života sa nižim GDP-om po glavi stanovnika od očekivanog, što ukazuje da postoji potencijal za podizanje nivoa kvaliteta digitalnog života i uz manje resurse i fokusiranije strateško planiranje.

Za 2022.godinu, rezultati su praktično isti kada je u pitanju korelacija GDP-a po glavi stanovnika i DQL indeksa, s tim da se te godine izdvojilo 17 zemalja koje su nadmašile očekivanja po pitanju DQL indeksa, a kada su u pitanju elektronska bezbednost, digitalizacija državnih ustanova (e-uprava) i elektronska infrastruktura. Među ovim zemljama se ponovo našla i Srbija, kao i Mađarska, Hrvatska, Bugarska i Rumunija.

I kada je u pitanju izveštaj za 2023.godinu, evropske zemlje nastavljaju da zauzimaju najviše rangirane pozicije po pitanju DQL indeksa. Zapadna Evropa je lider po pitanju DQL indeksa, ali i po pitanju ekonomskog bogatstva. Zanimljiv podatak za 2023.godinu je da iako region Severne Evrope beleži 15% manju vrednost GDP-a po glavi stanovnika u odnosu na Severnu Ameriku, vrednosti DQL indeksa u Severnoj Evropi su više u odnosu na Severnu Ameriku. Takođe, interesantan podatak je da, iako je GDP po glavi stanovnika Zapadne Azije veći u odnosu na globalni prosek za 38%, vrednost DQL indeksa Zapadne Azije pada ispod globalnog proseka. Ovi podaci ponovo potvrđuju da je korelacija između DQL indeksa i GDP-a po glavi stanovnika važna, ali GDP ne predstavlja najvažniji pokazatelj kvaliteta digitalnog života građana određene zemlje. Ponovo su se Srbija, Rumunija, Hrvatska, Bugarska i Mađarska, uz još 17 zemalja od ukupno 121 rangirane zemlje, pokazale kao zemlje koje su sa nižim vrednostima GDP-a, uspele da postignu više od očekivanih vrednosti elektronske bezbednosti, elektronske infrastrukture i e-uprave (digitalizacije državnih ustanova). Pokazalo se da zemlje koje investiraju u e-upravu, imaju veće šanse da poboljšaju vrednost DQL indeksa, s obzirom da je vrednost e-uprave faktor čija vrednost ima najveći uticaj u odnosu na ukupan DQL indeks.

Analizom rezultata DSI indeksa i DQL indeksa, a uzimajući u obzir i ostale faktore koji određuju rast i razvoj ekonomije, evidentno je da su bolje pozicije zauzele zemlje sa razvijenom ekonomijom, poput Švajcarske, Norveške, Austrije, Japana, Belgije, SAD, Australije, Singapura, Južne Koreje i mnogih drugih.

Tomše i Snoj (2016) su utvrdili da razvoj ICT sektora ima pozitivne efekte na ekonomiju, konkretno kada je u pitanju GDP po glavi stanovnika, ali negativan uticaj kada je u pitanju stopa nezaposlenosti. Autori ističu da je index razvoja ICT sektora u pozitivnoj korelaciji sa indeksom inovativnosti, te stoga preporučuju ulaganja u ICT sektor, kako bi se održala globalna konkurentna prednost (Tomše, Snoj, 2016; Tomše, Snoj, 2016; Tomše, Snoj, 2016).

Milojević i saradnici su još 2012.godine prepoznali potencijal ICT sektora u Republici Srbiji i ističu da je i pored malog tržišta, ovaj sektor učestvovao u GDP-u sa 5%, ali da su neophodna značajna ulaganja kako bi ICT tržište imalo pozitivan efekat na nivo preduzeća i nivo nacionalne privrede (Milojević, Cvijanović, Ignjatijević, 2012)

Atkinson i Stjuart (2013) su naglasili pozitivne efekte ICT sektora na ekonomiju (Atkinson, Stewart, 2013):

- a. Stvaranje visoko plaćenih poslova,
- b. 2011.godine IT industrija je doprinela 4,3% GDP-a Sjedinjenih Američkih Država,
- c. 2010.godine globalni output IT sektora je više nego dupliran na \$2.8 triliona u odnosu na \$1.2 triliona 1995.godine,
- d. IT sektor je zaslužan za 75% rasta produktivnosti u Sjedinjenim Američkim Državama u periodu od 1995-2002.godine i 44% u periodu od 2000-2006.godine,
- e. zbog uticaja dot.com Intrenet domena, godišnji globalni GDP Sjedinjenih Američkih Država je \$1.5 triliona veći,
- f. od 2006.godine do 2010.godine, korporacije koje su investirale više u IT sektor su postigle rast produktivnosti tri puta brže u odnosu na korporacije koje su investirale manje,
- g. stvaranje visokorastućih kompanija,
- h. building high-growth companies,
- i. stvaranje novih sektora i strategija poslovanja,
- j. pokreće inovacije,
- k. ključni je izvor konkurentne prednosti.

GDP po glavi stanovnika je jedan od glavnih pokazatelja razvoja ekonomije, ali tu su i stopa nezaposlenosti, spoljnotrgovinska razmena, nacionalni dohodak i drugi. Mnogi autori ističu da je digitalizacija ili „digitalna ekonomija“ strategija bez koje zemlje ne bi uspele da beleže rast i razvoj ekonomije. Digitalna transformacija podrazumeva ne samo uvođenje novih tehnologija u proces proizvodnje i poslovanja, već i u kompletnu organizacionu strukturu. Daub i Wiesinger (2015) smatraju da su ključni faktori zaposleni i znanje, odnosno u ovom slučaju digitalne veštine (Daub, Wiesinger, 2015).

Đorđević i saradnici (2022) smatraju da u vremenu koje dolazi, digitalne veštine moraju biti dostupne. Kako bi se održao korak sa tehnološkim promenama i razvojem na globalnom tržištu, neophodno je kontinuirano ulaganje u usavršavanje zaposlenih i sticanje novih veština, jer je znanje postalo izvor strateške prednosti, ekonomske moći i bogatstva(Đorđević et al., 2022).

Digitalna transformacija je obeležila 21. vek, ali ne samo u vidu razvoja i implementacije novih tehnologija, već se sve više pažnje usmerava na humani kapital i znanje, odnosno veštine koje poseduje ljudski kapital, te tako i na razvoj i usavršavanje istih. Pored toga, mnoge zemlje koje napreduju u digitalnoj transformaciji, susreću se sa manjkom stručne radne snage, odnosno ljudskog kapitala sa odgovarajućim znanjem i digitalnim veštinama.

Olszewska (2017) je analizirala digitalne performanse zemalja Centralne i Istočne Evrope u periodu od 2010-2015.godine, gde su, između ostalih faktora, analizirani: nivo digitalnih veština, obuka za ICT i dostupnost savremenih tehnologija koje zaposlenima pružaju kompanije, i nivo performansi u oblasti ponude i potražnje digitalnih veština. Analizirane zemlje su Bugarska, Hrvatska, Češka Republika, Estonija, Mađarska, Poljska, Letonija, Litvanija, Rumunija, Slovačka i Slovenija. Rezultati pokazuju da je u skoro svim zemljama pozitivan ishod preduzetničke kulture, ali niske performanse u oblasti digitalne infrastrukture i integracije digitalnih tehnologija, kao i niske nivoe digitalnih veština zaposlenih. Autorka zaključuje da postoji potencijal za digitalni rast, ali su neophodna velika ulaganja u ICT sektor i poboljšanje performansi kompanija u sektoru integrisanja digitalnih tehnologija u poslovanje. Isto tako, naglašava da je jedan od najvećih barijera za digitalni rast upravo nedostatak digitalnih veština (Olszewska, 2017).

Prema istraživanju AWS (Amazon Web Service) i Gallup – Work Place Consulting & Global Research, svet u kojem živimo i radimo postaje sve više digitalan, a informaciona tehnologija pokreće značajnu transformaciju širom sveta, na individualnom, organizacionom i makroekonomskom nivou. AWS i Gallup su sprovedi jedno od najvećih međunarodnih istraživanja o digitalnim veštinama. U istraživanju je učestvovalo više od 30.000 radnika i 9.000 poslodavaca u 19 zemalja, koje čine 67% globalnog GDP-a. Metodologija ovog istraživanja je obuhvatila klasifikaciju prihoda po zemljama od strane Svetstke banke, pri čemu od ukupno analiziranih 19 zemalja, 13 zemalja imaju visoke prihode i to su: Australija, Kanada, Francuska, Nemačka, Hong Kong, Italija, Japan, Novi Zeland, Singapur, Južna Koreja, Tajvan, SAD, UK, i 6 zemalja sa srednjim nivoom prihoda: Brazil, Kina, Indija, Indonezija, Malezija i Tajland. Istraživanje je obuhvatilo period od 2020-2022.godine. Rezultati istraživanja su pokazala ekonomsku vrednost i značaj digitalnih veština za preduzeća, uticaj na rast GDP-a, na rast prihoda, inovacija, sigurnog posla i boljih plata.

Kada su u pitanju napredne digitalne vještine, one generišu procenjenih 4.2 triliona dolara godišnjeg GDP-a u analiziranih 19 zemalja i 6.3 biliona dolara globalnom nivou zbog prihoda i produktivnosti radnika sa naprednim digitalnim vještinama. Kada se naprednim digitalnim vještinama dodaju nivo osnovnih digitalnih vještina i srednji nivo digitalnih vještina, ukupna godišnja globalna vrednost digitalnih vještina iznosi 18.5 biliona dolara, što je otprilike 12% globalnog GDP-a. U periodu od 2000-2021.godine, u SAD-u, obrada podataka, Internet izdavaštvo, i industrija informacionih usluga porasla je pet puta, a četiri sektora informacionih tehnologija doprinele su rastu GDP-a sa 2% na 8%. Takođe, Informaciono-tehnološke kompanije u Aziji i Evropi su najbržerastuće kompanije.

Lightcast je za 2021.godinu sumirao 4 velika trenda promena u vještinama na osnovu sprovedenog istraživanja u 2022.godini koje se odnosi na promene radnih vještina u odnosu na 2016.godinu(Ercegovac, 2022):

1. Rast nivoa digitalnih vještina nije ograničen samo u IT sektoru, već one igraju sve veću ulogu u drugim industrijama. Ove vještine uključuju digitalni marketing, digitalne vještine u proizvodnji, analizu podataka i umrežavanje.
2. Digitalni poslovi ne zahtevaju samo vještine programiranja, već i balans vještina poput upravljanja vremenom, organizacije, liderstva, verbalne komunikacije, pozitivnog razmišljanja, slušanja, kritičnog razmišljanja i izgradnje efikasnih odnosa, jer su timovi zaposlenih u kompanijama sve više interaktivniji i kooperativniji.
3. Upotreba vizualizacije podataka je postala mnogo važnija kada su u pitanju sva zanimanja. Tražene vještine su: D3.js, Canva, Adobe Analytics, MS Visio, Alteryx...
4. Karijere se razvijaju prema trenutnoj aktuelnosti medija, gde je tehnologija široko dostupna, pristupačnija i fleksibilna sve vreme. Mnogi poslovi sada zahtevaju znanje i vještine upravljanja društvenim mrežama. Primeri traženih vještina su Adobe InDesign, YouTube....

Evropska Unija je usvojila strategiju za digitalnu transformaciju pod nazivom „Evropa prilagođena digitalnom dobu 2020.godine. Ova strategija nudi osnovu za jačanje konkurentske prednosti Evropske Unije u tzv.“četvrtoj industrijskoj revoluciji“, a od 2022.godine usvojena je najnovija regulativa obuhvaćena „Programom digitalne decenije do 2030.godine“.Ovaj program usmerava digitalnu transformaciju Evrope sa konkretnim ciljevima za 2030.godinu:

1. Rast digitalno kvalifikovane populacije I visokokvalifikovanih profesionalaca sa ciljem postizanja rodne ravnoteže, gde najmanje 80%

- populacije uzrasta od 16-74 poseduje najmanje osnovne digitalne veštine i zaposlenost najmanje 20 miliona specijalista ICT sektora ,
2. Bezbedna, efikasna i odzivna digitalna infrastruktura, gde će svi krajnji korisnici biti pokriveni gigabitnom mrežom do krajnje tačke mreže, a sva naseljena područja pokrivena bežičnim mrežama velike brzine sledeće generacije sa performansama koje su najmanje ekvivalentne 5G. Proizvodnja najsavremenijih poluprovodnika u EU, u skladu sa pravom EU o održivosti životne sredine iznosi najmanje 20% vrednosti svetske proizvodnje. Najmanje 10.000 klimatski neutralnih visoko bezbednih rubnih čvorova je raspoređeno u EU, tako da garantuje pristup uslugama podataka sa kašnjenjem od svega nekoliko milisekundi gde god da se preduzeća nalaze i da do 2025.godine Evropska Unija dođe do prvog računara sa kvantnim ubrzanjem, čime bi njen digitalni potencijal mogao biti na vrhuncu kvantnih mogućnosti do 2030.godine.
 3. Digitalna transformacija preduzeća, gde je najmanje 75% preduzeća EU prezelo usluge računarstva u cloud-u, u skladu sa svojim poslovanjem, velike podatke ili veštačku inteligenciju. Više od 90% malih i srednjih preduzeća EU dostiže barem osnovni nivo digitalnog intenziteta. EU olakšava rast svojih inovativnih proširenja i poboljšava njihov pristup finansijama, što dovodi barem do udvostručenja broja tzv.jednoroga (unicorns).
 4. Digitalizacija javnih usluga, gde su ključne javne usluge 100% onlajn dostupne i gde je moguće da građani i preduzeća uspostave onlajn interakciju sa javnom administracijom, 100% građana EU ima pristup svojim elektronskim zdravstvenim kartonima, 100% građana EU ima pristup sredstvima bezbedne elektronske identifikacije koja su priznata širom EU, što im omogućava potpunu kontrolu nad transakcijama koje uključuju njihov identitet i nad ličnim podacima koje dele (Decision (EU) 2022/2481).

Vlada Republike Srbije prati Strategiju EU, te je 2021.godine usvojila “Strategiju razvoja informacionog društva i informacione bezbednosti za period od 2021-2026.godine”, sa ciljem da se nastavi sa daljim unapređenjem digitalnih znanja i digitalnih veština svih građana, zatim da se podigne kapacitet zaposlenih i u javnom i u privatnom sektoru za korišćenje novih tehnologija, kao i da se unapredi digitalna infrastruktura u obrazovnim ustanovama (“Službeni glasnik RS”, broj 86. od 3.septembra 2021.godine).

Društvene mreže kao važan deo digitalnih veština i digitalne pismenosti

Društvene mreže nastale su krajem 20. veka u svrhu uspostavljanja komunikacije ljudi iz različitih delova sveta. Iako je prvobitna uloga društvenih mreža bila socijalna, zbog eksplozivnog skoka popularnosti među korisnicima širom sveta, i industrija je prepoznala potencijalne koristi uvrštavanja društvenih mreža u

portfolio svog poslovanja, te su se efekti ove strategije veoma brzo pokazale i te kako profitabilnim. Ipak, za razliku od korisnika društvenih mreža, industrija je nešto kasnije prepoznala potencijalne benefite ovog fenomena, što se naročito razlikovalo u razvijenim zemljama i zemljama u razvoju.

Prema Global Web Index-u, društvene mreže su u potpunosti promenile koncept marketinga, a njihova popularnost i dalje raste pokazuju statistički podaci za 2023. godinu. U prilog tome govore podaci da društvene mreže koristi 60% populacije širom sveta, dok je prosečno vreme upotrebe društvenih mreža dnevno 2 sata i 24 minuta. Koje društvene mreže su najzastupljenije među korisnicima zavisi od njihovog životnog doba, kao i od zemlje u kojoj žive. Zbog životnih navika ljudi i činjenice da su društvene mreže postale sastavni deo života više od 60 % populacije, neminovno je bilo da industrija prepozna fenomen društvenih mreža kao izvor prihoda, posredno ili neposredno. Bilo da se društvene mreže koriste kao jedini instrument marketinga ili u kombinaciji sa drugim instrumentima, prisustvo na društvenim mrežama u 21. veku je neizostavan faktor. Sama svrha prisutnosti na društvenim mrežama može biti oglašavanje, informisanje potrošača, izgradnja i održavanje brenda i mnogi drugi, ali je komunikacija sa potrošačima putem društvenih mreža je najvredniji marketinški alat svake kompanije.

Značaj upotrebe društvenih mreža u komercijalne svrhe je višestruk. Pored ostvarivanja brze i dvosmerne komunikacije sa potrošačima, promovisanja proizvoda i/ili usluga, prevođenja potrošača iz stanja kupca i konzumenta u stanje „promotera“, kada potrošači preporučuju proizvod i/ili uslugu referentnim grupama (Rakić, Rakić, 2008). Zbog toga što se socijalne mreže smatraju prenosnicima informacija koje kupci ocenjuju kao kredibilne, Levy (2010) ističe da organizacije teže stvaranju pozitivnog imidža na toj osnovi (Levy, 2010). Banković i Gijić (2010) ukazuju da je još jedan razlog sve veće komercijalne upotrebe Internet društvenih mreža, konstantan eksponencijalni rast broja korisnika društvenih mreža, ali i njihove aktivnosti na mreži (Banković, D., Gijić. N. (2010).

Sa ovim viđenjem slažu se i Kotler i saradnici (2017) i kažu da tržište postaje inkluzivno, a društvene mreže smanjuju barijere u komunikaciji između preduzeća i potrošača, pri čemu potrošači prenose savete i preporuke od preduzeća i od potrošača i prelaze iz stanja svesnosti (ja znam o proizvodu), ka delovanju (ja kupujem proizvod) do zastupanja (ja preporučujem proizvod) (Kotler, et al., 2017).

Među pravcima unapređenja poslovanja u domaćim preduzećima, a u cilju održavanja konkurentstke prednosti, Bešić i saradnici (2022), između ostalog navode i primenu savremenih dostignuća u oblasti informacionih i komunikacionih tehnologija (Bešić et al., 2022).

Neosporno je da je poslovanje mnogih industrijskih branši prešlo i na poslovanje putem društvenih mreža, čak su mnoge kompanije prešle isključivo na poslovanje putem društvenih mreža. Uz razvoj ICT sektora i digitalne transformacije, potražnja za ljudskim kapitalom koji poseduje digitalne veštine iz godine u godinu raste. Društvene mreže su omogućile globalizaciju, odnosno priliku kompanijama da se usmere sa lokalnog, nacionalnog, regionalnog ili međunarodnog tržišta na globalno tržište. U prilog tome govore i rast elektronske trgovine, kao i rast digitalnog opismenjavanja populacije, naročito starijih građana, korisnika društvenih mreža, i mlađe populacije koja za potrebe zapošljavanja usavršava digitalne veštine.

Gardašević (2021) ističe da su društvene mreže u potpunosti promenile način na koji korisnici koriste Internet, što je dovelo do neophodnih adaptacija u poslovanju kako velikih kompanija, tako i malih i srednjih preduzeća (Gardašević, 2020). Osim toga, Gardašević, Ćirić i Carić (2018) ističu važnost razumevanja motiva upotrebe društvenih mreža od strane potrošača (Gardašević et al., 2018), kako bi kompanije na adekvatan način mogle da reaguju i svoju marketing i poslovnu strategiju usmere ka ostvarivanju krajnjih ciljeva (Obradović, 2022).

Zaključak

Informatičko doba ili doba znanja bazira se na znanju, odnosno na ljudskom kapitalu. Od pojave prvih računara, Interneta i mobilnih telefona, način poslovanja i način života menjao se iz korena, da bi danas život bez ovih uređaja i bez svetske globalne mreže, u civilizovanom svetu bio nezamisliv.

Uz sva tehnološka dostignuća i promene, koje se odavno ne dešavaju na nivou decenije, već na godišnjem, pa čak i kvartalnom nivou, stanovništvo u svetu, kao i industrija, prilagođavaju se tim sve učestalijim promenama koje ubrzavaju proces poslovanja i čine ga značajno efikasnijim. Sa druge strane, te promene iziskuju nove veštine i znanja kako bi se tehnološke inovacije implementirale u poslovanje na adekvatan način.

Sam proces digitalne transformacije podrazumeva savladavanje digitalnih veština, odnosno konstantno usavršavanje i dokvalifikacije radne snage u ICT sektoru. Značaj ulaganja u digitalnu transformaciju za rast i razvoj kompanija i njihove konkurentnosti, a onda i za rast i razvoj ekonomije, prepoznale su kompanije i sa vremenom izdvajaju i plasiraju sve veće iznose kapitala u tehnološke inovacije i usavršavanja digitalnih znanja i veština radne snage (Dašić, G. 2023).

Značaj ulaganja u digitalne veštine i znanja prepoznale su i vodeće ekonomske sile, a njih prate i zemlje u razvoju usvajanjem Nacionalnih strategija koje se odnose na plan razvoja digitalnih performansi i ubrzavanja digitalnog procesa transformacije.

Digitalne veštine i znanja ponajviše se odnose na umeće upravljanja društvenim mrežama, koje su postale sastavni deo poslovanja, odnosno komunikacije kompanija sa potrošačima, promocije proizvoda, kao i trgovine putem interneta, ne samo na lokalnom i nacionalnom, već i na regionalnom i globalnom nivou.

Literatura

1. Ala-Mutka, K. (2011). *Mapping Digital Competence: Towards a Conceptual Understanding*. European Commission, Seville, Spain, DOI:10.13140/RG.2.2.18046.00322, Report number: JRC67075, pp. 18.
2. Atkinson, R. D., and Stewart, L. A. (2013). Just the Facts: The Economic Benefits of Information and Communications Technology. (I. T. Foundation, Edit.), pp.3-4.
3. Baltazarević, R. M. (2022), *Digitalna pismenost kao sredstvo prevencije protiv sajber kriminala*, Baština, Institut za srpsku kulturu Priština, Leposavić, br.57, DOI: <https://doi.org/10.5937/bastina32-38103>, str.131-139.
4. Banković, D., Gijić, N. (2010). *Application of WEB 2.0 Technology in Business*, In Application of New Technologies in Management/2nd International Conference ANTiM2010, Tara: Faculty for Education of the Executives of the University of business Academy, 2010, pp.390-395.
5. Bešić, C., Bešić Vukašinović, D.C., Bešić, S. (2022). Izazovi globalne ekonomije i unapređenje poslovanja domaćih cpreduzeća, Zbornik radova sa konferencija JUSK, Beograd, Srbija, str. 8-13.
6. Dašić, G. (2023). Digital transformation in the sports industry. In: Dašić, D (ed.) *SPORTICOPEDIA - SMB, 1(1)*, 309-318. <https://doi.org/10.58984/smbic2301309d>
7. Dašić, D. (2023) Application of delphi method in sports. *Sports, media and business*, 9(1), 59-71. <https://doi.org/10.58984/smb2301059d>
8. Daub, M., Wiesinger, A. (2015). *Acquiring the Capabilities, You Need to Go Digital*. McKinsey Digital. Retrieved from <http://www.mckinsey.com/insights/business technology/acquiring the capabilities you need to go digital>, dostupno 23.01.2024.
9. Đorđević, D., Čočkalović, D., Bogetić, S., Bešić, C. (2022). *Analiza osnovnih apstekata poslovanja u novom tržišnom okruženju*, Zbornik radova sa konferencija JUSK, Beograd, Srbija, str. 36-44.
10. Đorđević, D., Čočkalović, D., Bešić, C., Bogetić, S., Bakator, M. (2022). *Značaj novih znanja i veština za postizanje održivosti u novoj paradigmi poslovanja*, Zbornik radova sa konferencija JUSK, Beograd, Srbija, str. 60-68.
11. Decision (EU) 2022/2481 of the European Parliament and of the Council of the 14 December 2022, establishing the Digital Decade Policy Programme

- 2030, Article 4: Digital targets, <https://eur-lex.europa.eu/eli/dec/2022/2481/oj>, dostupno 04.02.2024.
12. Gardašević, J. (2020). *Entrepreneurship and Facebook: Analyzing the Network usage on a daily and weekly basis among Serbian and American Respondents*, Journal of Entrepreneurship and Business Resilience, Faculty of Economics and Engineering Management, University Business Academy in Novi Sad, Vol 3, No 1, pp. 5-65.
 13. Gardašević, J., Ćirić, M., Carić, M. (2018). *Razumevanje motiva koršćenja društvenih mreža u funkciji unapređenja komunikacije sa potrošačima*, Časopis Marketing, Srpsko udruženje za marketing SeMA, Ekonomski fakultet u Beogradu, vol. 49, br. 4, str. 311-320.
 14. Ercegovac, I. (2022). Televizijski formati kao sadržaj koji generišu korisnici - Jutjub kao mas-medijski kanal influensera. *Društveni horizonti*, 2(3), 59-73. <https://doi.org/10.5937/drushor2203059E>
 15. <https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts>, dostupno 24.01.2024.
 16. https://ec.europa.eu/eurostat/cache/metadata/en/isoc_sk_dskl_i21_esmsip2.htm, dostupno 30.01.2024.
 17. https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en, dostupno 24.01.2024.
 18. <https://surfshark.com/dql2023/methodology>, dostupno 24.01.2024.
 19. <https://surfshark.com/dql2020>, dostupno 24.01.2024.
 20. <https://surfshark.com/dql2021>, dostupno 24.01.2024.
 21. <https://surfshark.com/dql2022>, dostupno 24.01.2024.
 22. <https://surfshark.com/dql>, dostupno 24.01.2024.
 23. <https://assets.aboutamazon.com/dd/e4/12d668964f58a1f83efb7ead4794/aws-gallup-global-digital-skills-study-report.pdf>, dostupno 01.02.20234.
 24. [https://4906807.fs1.hubspotusercontent-na1.net/hubfs/4906807/Shifting%20Skills_Executive%20Summary%20\(1\).pdf](https://4906807.fs1.hubspotusercontent-na1.net/hubfs/4906807/Shifting%20Skills_Executive%20Summary%20(1).pdf), dostupno 01.02.2024.
 25. <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/> preuzeto 01.01.2024.
 26. Jacobs, L. (2021), *Developing mobile digital skills in low and middle-income countries*, GSMA, pp.4, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/11/Developing-mobile-digital-skills-in-low-and-middle-income-countries.pdf>, dostupno 28.01.2024.
 27. Jenkins, H. (2006). *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, Building the Field of Digital Media and Learning, The MacArthur Foundation, Chicago, Illinois, pp. 4.
 28. Kotler, P., Kartajaya, H., Setiawan, I. (2017). *Marketing 4.0*, John Wiley and Sons Inc, Hoboken, New Jersey, <https://www.drnishikantjha.com/booksCollection/Marketing%204.0%20Mov>

- [ing%20from%20Traditional%20to%20Digital%20\(%20PDFDrive%20\).pdf](#), dostupno 02.02.2024.
29. Levy, J.R. (2010). *Facebook Marketing: Design your next Marketing Campaign*, 2nd ed., Indianapolis: Pearson education, pp.125.
 30. Lopez 2013: Islas Lopez. "Digital literacy and academic success in online education for underprivi-legged communities : the prep@net case." Ph.D. Dissertation, University of Texas, Austin
 31. Milenković, N., Radosavljević, M., & Vladislavljević, V. (2023). Korišćenje aplikacija sa otvorenom licencom u razvoju programa poslovnog preduzeća. *Održivi razvoj*, 5(2), 35-49. <https://doi.org/10.5937/OdrRaz2302035M>
 32. Milojević, I., Cvijanović, D., Ignjatijević, S. (2012). *Makroekonomski okvir konkurentnosti srpske privrede i ICT sektora*, Međunarodni naučno-stručni časopis za ekonomiju i politiku tranzicije „Tranzicija“, Ekonomski institut Tuzla, JCEA Zagreb, IEP Beograda, feam Bukurest, Vol.14 No. 30, str. 93-98.
 33. Obradović, D. (2022). Operacije uticaja na društvenim mrežama kao hibridna pretnja. *Društveni horizonti*, 2(4), 217-233. <https://doi.org/10.5937/drushor22042170>
 34. Olszewska, K. (2017). The Digital Economy in Central and Eastern European Countries (CEECS) – The Case of Poland, International Scientific Conference on Economics and Management EMAN, Ljubljana, Slovenija, str. 363-370.
 35. Perović, A. & Đukić, S. (2023). Značaj komunikacije u sportu. *Menadžment u sportu*, 14(1), 103-118.
 36. Rakić, B, Rakić. M. (2008) *Marketing i inovacije u funkciji ra-zvoja organizacija i privrede*, Međunarodni naučni skup razvojne strategije preduzeća i privrede, Beograd: Mega-trend univerzitet, pp. 255-259.
 37. Strategija razvoja informacionog društva I informacione bezbednosti u Republici Srbiji za period od 2021. do 2026.godine, "Službeni glasnik RS", broj 86. od 3.septembra 2021.godine, <https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2021/86/1/reg>, dostupno 04.02.2024.
 38. Tinmaz, H., Lee, YT., Fanea-Ivanovici, M., Baber, H. (2022). A systematic review on digital literacy. *Smart Learn. Environ.* **9**, 21 (2022). <https://doi.org/10.1186/s40561-022-00204-y>
 39. Tomše, D., Snoj, B. (2016). *The impact of Information and Communications Technologies on Unemployment rate on OECD Countries*. Integrated Politics of Research and Innovations. International Scientific Conference, Limen, pp.605-610.
 40. Tomše, D., Snoj, B. (2016). *The impact of Information and Communications Technologies on GDP per Capita*. Knowledge Based Sustainable Economic Development. International Scientific Conference, Eraz, pp. 119-120.
 41. Tomše, D., Snoj, B. (2016). *The impact of Information and Communications Technologies on Innovations*. International Scientific Conference on Economics and Management EMAN, Ljubljana, Slovenija, str. 556-561.

42. Trifunović, D., Bogdanović Bulut I., Tankosić, M., Lalić, G. & Nestorović, M. (2023). Research in the use of social networks in business operations. *Akcionarstvo*, 29(1), 39-62
43. UNESCO (2018). "Global framework of reference on digital literacy skills for indicator 4.4.2: Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skill (Draft Report)." Paris: UNESCO. <https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>, dostupno 10.01.2024.
44. Vidas-Bubanja, M., Bubanja, I. (2016). *The High Quality and Sustainability as Characteristics of Doing Business in Digital Connected World*, International Journal of Advanced Quality, JUSK, UDC 658.5, ISSN 2217-8155, no 2, vol 44, pp. 7-12.
45. Vidas-Bubanja, M, Popovčić-Avrić, S. (2017). *Izazovi globalnog poslovanja kompanija u savremenom digitalnom okruženju*, International Scientific Conference on Economics and Management EMAN 2017, Ljubljana, Slovenija, str.544.
46. Van Deursen, A.J.A.M. & Van Dijk, J.A.G.M., (2011). Internet skills, and the digital divide. *New media & society*. DOI:[10.1177/1461444810386774](https://doi.org/10.1177/1461444810386774), pp. 893-911.
47. Van Deursen, A.J.A.M., Helsper, E.J., & Einon, R. (2014). *Measuring Digital skills: From Digital Skills to Tangible Outcomes project report*, University of Twente / London School of Economics / Oxford University, DOI:[10.13140/2.1.2741.5044](https://doi.org/10.13140/2.1.2741.5044), pp. 9-10.
48. Van Deursen, A.J.A.M. & Van Dijk, J.A.G.M. (2014). The digital divide shifts to gaps of usage. *New media & Society*, 16(3), pp. 507-526.
49. Vukosavljević, D., Vukosavljević, D., Miletić, V. (2023). Analysis of multidimensional globalization index on the example of the Republic of Serbia and the surrounding countries. *Akcionarstvo*, 29(1), 9-38
50. Vuković, M., Urošević, S., Dašić, D. (2023) Threats to objectivity in the social science research. *Sports, media and business*, 9(2), 143-158. <https://doi.org/10.58984/smb2302143v>
51. Zupur, M., & Janjetović, M. (2023). Održivost marketinga lične prodaje na savremenom tržištu. *Održivi razvoj*, 5(2), 7-19. <https://doi.org/10.5937/OdrRaz2302007Z>

Datum prijema (Date received): 23.11.2023.

Izvršena prva korekcija (The first correction was made): 19.01.2024.

Datum prihvatanja (Date accepted): 23.02.2024.

ANALYSIS OF THE RELATIONSHIP INDEX OF DIGITAL SKILLS AND ECONOMIC DEVELOPMENT

Dragana Stefanović⁸⁰, Ignjatijević Svetlana⁸¹, Ivan Božović⁸²

Abstract

The transition from the industrial age to the age of knowledge or information age implies the adoption of new knowledge and skills that become the main resource of business. The consequence of constant technological innovations is the need for new knowledge and skills, such as digital literacy and digital skills, which have become one of the most important resources for the development of industry, and therefore the economy. The subject of research in this paper is the analysis of the DSI index (Digital Skill Index) for the years 2021 and 2023 and the DQL index (Digital Quality of Life Index) for a period of five years, with the aim of comparing the data and pointing out the importance of having digital skills and the use of social networks have on the development of the economy. Quantitative research method was used in the research and was implemented dynamic analysis of DSI and DQL indices for Serbia and comparative analysis with other countries in a given time period. The results of the DSI index research for 2021 and 2023 for 36 European countries show that the leading positions were taken by the countries of Northern Europe, the Netherlands, Ireland, Spain and Luxembourg, while Serbia took the 30th position. Certain countries that occupied the central positions in the table in 2019, in 2023 have regressed, that is, progressed, but not to a significant level. On the other hand, the analysis of the DQL index for 50 countries of the world in the period from 2019 to 2023 shows that European countries occupied more than 50 percent among the best-ranked countries in the entire time period, while Serbia was not analyzed in 2019, but in the next four analyzed years, it reached the top 50 ranked countries in the world. Also, the paper shows the importance of the development of digital skills and the use of social networks in the growth and development of the economy.

Keywords: DSI index, DQL index, digital skills, social networks, economic growth and development

JEL: Q56

⁸⁰ Assistant , Faculty of Economics and Engineering Management in Novi Sad, Cvečarska 2, 21000 Novi Sad, Serbia, e-mail: draganavstefanovic@gmail.com

⁸¹ Regular professor , Faculty of Economics and Engineering Management in Novi Sad, Cvečarska 2, 21000 Novi Sad, Serbia, e-mail: ceca@fimek.edu.rs

⁸² Extraordinary professor , Dr. Ivan Božović, University of Pristina with temporary based in Kosovo Mitrovici , Ekonomski faculty , Kolašinska 156, Kosovska Mitrovica +381 63 85 50 947, E-mail: ivan.bozovic@pr.ac.rs

Introduction

The emergence of the Internet transformed business and accelerated the exchange of information and communication between companies and consumers, as well as suppliers and other business partners. Many business processes have become more efficient, thanks to technological innovations and digital skills. In the industrial age, the main resources were means of work, while in the information age, knowledge is considered the most valuable business resource (Dašić, 2023, Vuković, et al., 2023). According to Vidas-Bujanja and Bujanja (2016) "information and communication technologies are the basic infrastructure for innovation in all areas and a key determinant of the competitiveness of states and companies in the future"(Ala-Mutka, 2011).

Technological possibilities in the form of digital connection of the world are changing the way companies do business(Perović & Đukić, 2023) and a new industrial ecosystem is being created that changes the business environment in order to adapt it to the needs of the information age (Vidas-Bujanja, Bujanja, 2016).

In step with technological progress and innovation, companies have realized the importance of having digital skills, and then characterized them as one of the priorities for their own development and prosperity(Zupur & Janjetović, 2023; Vukosavljević et al., 2023). This trend was first adopted and implemented by large corporations, so that over time, small and medium-sized enterprises also adapted to the new business conditions. As large corporations are an important macroeconomic indicator of the development of the national economy, small and medium-sized enterprises are also an important link in the analysis of GDP trends.

Digital skills, digital literacy and competencies are very often seen as synonyms, so it is important to explain the differences between these three terms. Digital competence is defined by Ala-Mutka (2011) as "the ability to apply knowledge and skills in different contexts, such as work, leisure or learning"(Vidas-Bujanja, Popovčić-Avrić, 2017). According to van Deursen and van Dijk (2011) "digital literacy refers to certain competencies and knowledge, while digital skills refer to more technical aspects of these competencies and knowledge"(Van Deursen & Van Dijk, 2011). They initially singled out four types of practice-oriented skills (Van Deursen & Van Dijk, 2011):

1. operational skills related to the operational manipulation of software and hardware,
2. formal skills, which include the ability to understand and use the formal characteristics of computers and the Internet,
3. information skills, i.e. skills necessary for searching, handling digital media content, their selection and critical assessment,

4. strategic skills - the capacity to use the Internet for your personal benefit;
to later include two additional skills, namely:

5. communication skills

6. content creation skills (Van Deursen et al., 2014; Van Deursen & Van Dijk, 2014).

UNESCO (2018) defines digital literacy as “the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent work, and entrepreneurship. It includes competencies related to computer literacy, information and communication technology literacy, information literacy and media literacy” (UNESCO, 2018). The authors Tinmaz, Yoo-Taek, Fanea-Ivanovici and Baber (2022) indicate the impact of digital literacy on various aspects of human life, such as education, business, health, management, etc., and that for each of these dimensions, they could carry out individual case studies. They believe that it is important to investigate the role of digital literacy in particular on lifelong learning, education in general, as well as the effects of digital training on the flexibility of the labor market (Tinmaz, et al., 2022).

Lopez (2013) considers that the use of social networks is one of the sub-variables of digital literacy (Lopez, 2013).

The structure of this paper will focus on the DSI index and the DQL index, as well as on social networks, as a significant factor of digital skills and their impact on the growth and development of the economy. The work methodology will include a comparative analysis of the digital quality of life index in several countries, including Serbia, over a period of five years, as well as a comparative analysis of the digital skills index for 36 European countries for 2021 and 2023. The aim of the work is to point out the real situation and directions of movement towards the improvement of these values.

Digital skills as an indispensable factor of sustainable business and development

In the introduction of this paper, a brief overview of the terms digital literacy, digital skills and digital competences is given. In this chapter, the similarities and differences of these concepts will be analyzed in more detail, and the emphasis will definitely be on digital skills.

In addition to van Deursen's (2011) already mentioned comprehensiveness of digital skills, many authors have built on this division, and highlighted their notions of digital skills. However, the classification of Jenkins (2006) stands out because it starts from the community and the participants themselves. Rather than exclusively highlighting individual attributes, Jenkins frames what he calls new

media literacy as cultural competencies and social skills developed through collaboration and networking, and he defines eleven different new skills:

1. Play – the ability to experiment with the environment as a form of problem solving,
2. Performance - the ability to adopt alternative identities for the purpose of improvisation and discovery,
3. Simulation - the ability to interpret and construct dynamic models of real world processes,
4. Appropriation – the ability to meaningfully sample and modify media content,
5. Multitasking - the ability to scan the environment and shift the focus as needed to highlight details,
6. Distributed Cognition – the ability to meaningfully interact with tools to extend mental capacities,
7. Collective intelligence – the ability to combine knowledge and compare notes with others in moving towards the same goal,
8. Assessment - the ability to assess the credibility and reliability of various sources of information,
9. Transmedia navigation – the ability to follow the flow of stories and information with the help of different modalities,
10. Networking - the ability to search, synthesize and disseminate information,
12. Negotiation – the ability to travel through different communities, insight and respect for different perspectives, and understanding and following an alternative norm(Jenkins, 2006).

The importance of digital literacy and digital skills, as well as competence in modern business, are key factors for the sustainability of competitiveness and economic development. That is why, since the advent of the Internet, the effects that the digital era has on the micro-economy, and then on the macro-economy, have been carefully studied. Digital skills are one of the basic indicators for monitoring the development of the digital economy, therefore the movement of this indicator is monitored over a longer period of time and the reasons for such movement are analysed.

Digital literacy and digital skills are an indispensable element of private and business life today, and there are very few industries where these skills and knowledge are not in demand. In addition, knowledge in the digital sphere is constantly being improved and innovated, and special digital skills are often sought after by employers.

Dorđević et al. (2022) believe that skills are necessary in the context of business globalization: cooperation and teamwork, planning and organizing, basic digital skills, adaptability, time management, negotiation, conflict resolution, creative,

innovative and critical thinking, communication, problem solving etc. (Đorđević et al., 2022).

The GSM Association (Global System for Mobile Communications) defines mobile digital skills as the knowledge and skills necessary for the effective and safe use of a mobile phone, mobile service and mobile Internet (2021). At the same time, digital skills are not only technical skills that people need to use the Internet, but include a range of cognitive and non-cognitive skills such as those related to communication and media literacy, security and privacy (Jacobs, 2021).

On the other hand, if we look at the use of the Internet and social networks for the purpose of entertainment, that is, for private purposes, digital literacy and digital skills are important factors for the prevention of cybercriminal activities (Baltazarević, 2022).

Digital literacy and digital skills in the world

UNESCO (2018) studied and analyzed the areas of competence and digital literacy and presented the reference frames of these categories in Table 1, which he later researched in 47 countries in the world, and classified them by geographic region and income level, which is shown in Table 2.

Table 1. DigCom 2.0 Competence and Competence Areas (UNESCO, 2018)

Areas of competence	Competencies
1. Computer literacy and data processing skills	1.1 Browsing, searching and filtering data, information and digital content 1.2 Evaluation of data, information and digital content 1.3 Management of data, information and digital content
2. Communication and cooperation	2.1 Interaction through digital technologies 2.2 Sharing through digital technologies 2.3 Civic engagement through digital technologies 2.4 Collaboration through digital technologies 2.5 Rules of appropriate behavior 2.6 Digital identity management
3. Creation of digital content	3.1 Development of digital content 3.2 Integration and reworking of digital content 3.3 Copyright and licenses 3.4 Programming
4. Security	4.1 Device protection 4.2 Protection of personal data and privacy 4.3 Protection of health and well-being 4.4 Environmental protection
5. Troubleshooting	5.1 Solving technical problems

	5.2 Identifying needs and technological responses 5.3 Creative use of digital technologies 5.4 Identification of gaps in digital competences
--	--

<https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>

Table 2. Distribution of digital literacy and competence areas in 47 countries by geographic region and income level (UNESCO, 2018)

Geographical region	The country's income level				In total
	Tall	Medium tall	Medium low	Low	
1. Asia	1	3	7		11
2. European Union	1	1			2
3. High-income countries outside the EU	2				2
4. Latin America	1	4			5
5. Middle East and North Africa	4	4	4		12
6. Sub-Saharan Africa		4	6	3	13
7. The rest		1	1		2
Total	9	17	18	3	47

<https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>

Table 2 analyzes the income level of countries by region and the frameworks of digital literacy in those countries. The results of research carried out by UNESCO have shown that multinational companies have a major role in influencing digital competences and digital literacy, which are taught and assessed, especially in developing countries. International companies sometimes hold courses and exams, and sometimes in collaboration with national providers.

DSI index and DQL index

Digital competences are measured on the basis of the five items already mentioned: IT and data literacy, communication and cooperation, creation of digital content, security and problem solving.

The European Commission analyzes the DESI (Digital Economy and Society Index) since 2015 and ranks 28 countries, members of the European Union, based on the following indicators:

1. Connection (coverage of households with Internet connection, percentage of fast Internet users, mobile connection),
2. Human capital (Internet users, basic digital skills, ICT specialists, experts in mathematics, science and technology),
3. Use of the Internet (news, music and entertainment, video calls, social networks, banking, shopping),
4. Integration of digital technology (information sharing, social networks, e-invoices, cloud, radio frequency identification, online sales, international online sales),
5. Digital public service (users of electronic public service, pre-filled forms, completing the service online, availability of data).

Only from 2021, Eurostat introduces a new concept, the DSI index (Digital Skills Index), which includes EU member countries, EU candidate countries, potential EU candidate countries, Iceland, Switzerland and Norway. For the analysis of the DSI index, i.e. the digital skills of citizens aged 16-74, Eurostat evaluates the following indicators:

1. **Information literacy skills and data processing skills** ("Formulating the need for information, locating and downloading digital data, information and content, evaluating the relevance of sources and their content, storing, managing and organizing digital data, information and content" *),
2. **Communication and cooperation skills** ("Abilities of individuals for integration, communication and cooperation through digital technologies with awareness of cultural and generational differences, socialization through public and private digital institutions and participatory citizenship, management of own digital identity and reputation" *),
3. **Digital content creation skills** ("Creating and editing digital content, improving and integrating information and content into an existing body of knowledge while understanding how copyright and licenses apply, knowledge to provide understandable instructions for a computer system" *),
4. **Security skills** ("Protection of devices, content, personal data and privacy in the digital environment, protection of mental and physical health, being aware of the impact of digital technologies on social well-being and social inclusion, being aware of the impact of digital technologies on the environment and their use" *),

5. **Problem solving skills** ("Identifying needs and problems and solving conceptual problems in a digital environment, using digital tools to innovate processes and products, keeping up with digital evolution" * ⁸³).

The time frame related to Internet use was 3 months, and each of these indicators is rated as basic level, above basic level and at least basic level: basic level or above basic level. The research was conducted on a sample of 75% of the population in the analyzed countries in 2021 and 2023.

Based on these elements, Eurostat ranked countries according to the levels of digital skills.

Table 3. Criteria on the basis of which the levels of digital skills were determined

Level		
1	Individuals with basic or above basic digital skills	All five indicators were rated as basic level or above basic level of digital skills
2	Individuals with above basic digital skills	All five indicators were assessed as above the basic level of dig. skill
3	Individuals with a basic level of digital skills	All indicators are rated as the level of basic dig. skill or level above basic dig. skills, but not all indicators are rated as a level above basic dig.skills
4	Individuals with low levels of digital skills	4/5 indicators were rated as basic or above basic digital skills
5	Individuals with inadequate levels of digital skills	3/5 indicators were rated as basic or above basic digital skills
6	Individuals with limited digital skills	2/5 of the IDs were rated as basic or above basic digital skills
7	Individuals without a basic level of digital skills	Without basic dig.skills
8	The level of digital skills could not be determined	Individuals have not used the Internet in the last 3 months

https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en

Table 4. Level of digital skills of individuals for 2021

R.	Country	Level 1 (Level 2 +	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	level 8
----	---------	-----------------------	---------	---------	---------	---------	---------	---------	---------

⁸³ * Definition within the Digital Competence Framework 2.0

no		Level 3) %	%	%	%	%	%	%	%
1	Iceland	80.99	44.77	36.23	12.10	4.93	0.74	0.68	0.56
2	Finland	79.18	48.13	31.04	12.58	3.59	1.02	0.33	3.29
3	Netherlands	78.94	51.77	27.18	11.40	3.39	0.46	0.32	5.48
4	Norway	78.71	42.59	36.12	15.03	4.33	0.86	0.49	0.58
5	Switzerland	77.79	40.26	37.53	12.22	4.60	2.17	1.36	1.86
6	Ireland	70.49	39.69	30.80	14.17	7.60	4.83	1.85	1.07
7	Denmark	68.65	37.37	31.27	20.17	8.04	1.14	0.89	1.11
8	Sweden	66.60	35.68	30.92	17.92	7.93	2.78	1.53	3.24
9	Spain	64.16	38.06	26.11	15.44	7.44	4.47	2.39	6.10
10	Luxembourg	63.79	31.81	31.98	20.41	8.32	4.70	1.44	1.34
11	Croatia	63.37	31.18	32.19	11.57	4.73	1.49	0.10	18.75
12	Austria	63.33	33.28	30.05	16.95	6.82	3.38	2.05	7.47
13	France	61.96	31.25	30.71	16.07	8.47	3.74	1.32	8.45
14	Malta	61.23	35.49	25.74	15.45	6.09	3.25	1.46	12.53
15	Czech Republic	59.69	24.06	35.63	17.36	8.42	2.42	0.96	11.15
16	Estonia	56.37	27.68	28.69	19.13	9.82	3.37	2.28	9.02
17	Portugal	55.31	28.54	26.76	12.64	6.99	4.76	2.60	17.69
18	Slovakia	55.18	20.83	34.36	18.15	8.93	4.40	2.26	11.07
19	Belgium	54.23	26.34	27.89	18.59	11.71	5.24	3.01	7.21
20	Greece	52.48	21.70	30.78	10.64	7.86	5.45	2.07	21.51
21	Latvia	50.80	23.79	27.01	20.70	12.37	5.05	2.37	8.70
22	Cyprus	50.21	20.95	29.26	20.58	10.07	6.98	2.92	9.24
23	Slovenia	49.67	19.72	29.95	20.48	11.21	4.80	2.84	11.00
24	Hungary	49.09	21.54	27.56	20.51	11.91	4.98	2.14	11.36
25	Germany	48.92	18.84	38.88	21.22	11.51	6.19	3.58	8.57
26	Lithuania	48.84	23.01	25.83	18.61	10.41	5.84	3.23	13.07
27	Montenegro	47.21	9.14	30.08	25.44	7.91	1.65	0	17.78
28	Italy	45.60	22.52	23.08	16.34	9.84	6.12	3.69	18.41
29	Poland	42.93	20.64	22.28	18.82	11.45	7.31	4.88	14.63

30	Serbia	41.30	12.32	28.97	18.67	10.48	6.65	4.08	18.83
31	Bosnia and Herzegovina	34.65	5.35	29.29	21.53	10.17	7.17	2.16	24.32
32	North Macedonia	34.62	8.15	26.48	18.28	15.93	11.71	5.85	13.60
33	Bulgaria	31.18	7.82	23.36	14.51	11.67	11.75	6.16	24.73
34	Turkey	30.12	9.87	20.25	19.64	14.34	10.00	7.32	18.59
35	Romania	27.82	8.73	19.09	16.53	14.23	14.88	10.13	16.41
36	Albania	23.80	4.01	19.79	16.80	17.39	14.42	6.96	20.63

https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en

The table ranks 36 countries based on the level of digital skills, with the first-ranked countries being those with the highest percentage of level 1, which represents the sum of level 2 and level 3, i.e. the percentage of individuals with a level above basic digital skills and the percentage of individuals who possess basic digital skills. Analyzing the other values, we see that the other percentages of individuals in the other levels (level of low digital skills, level of inadequate digital skills, level of limited digital skills and level without basic digital skills) do not necessarily follow a sequence of decreasing values compared to the values of level 1, i.e. the sum of levels 2 and level 3. In this ranking, the Republic of Serbia took the 30th position with the following values: Level 1 (41.30%), Level 2 (12.32%) and Level 3 (28.97%), which means that the total percentage of respondents who have the level of basic digital skills and the level above basic digital skills is less than 50%, more precisely it is 41.30%. When it comes to Level 4, which represents the percentage of individuals with a low level of basic digital skills, that value is 18.67%, the percentage of individuals with an inadequate level of digital skills (level 5) is 10.48%, followed by 6.65% of individuals with a limited level of digital skills (level 6) and 4.08% of individuals without basic digital skills (level 7). And finally, level 8 with a value of 18.83% of individuals for whom it was not possible to determine the level of digital skills, because they did not use the Internet in the last three months. That percentage is extremely high considering that it is about a fifth of the respondents. This value acquires a negative significance, especially if one takes into account the Covid-19 pandemic, which in a very short period of time transformed learning and live work into the digital sphere.

Table 5. Level of digital skills of individuals in 2023

R.	Country	Level 1 (Level 2 +	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	level 8
----	---------	-----------------------	---------	---------	---------	---------	---------	---------	---------

no		Level 3) %	%	%	%	%	%	%	%
1	Netherlands	82.70	54.53	28.16	12.12	3.43	0.65	0.25	0.85
2	Finland	81.99	53.63	28.36	11.28	3.01	0.80	0.62	2.30
3	Norway	81.09	50.71	30.38	14.66	3.24	0.29	0.39	0.32
4	Switzerland	77.52	42.69	34.83	13.21	5.42	1.81	1.29	0.75
5	Denmark	69.62	39.37	30.25	19.62	7.12	1.54	0.90	1.20
6	Czech Republic	69.11	35.48	33.63	13.89	5.32	2.59	1.13	7.96
7	Ireland	68.65	37.88	30.77	15.93	7.31	3.34	0.65	4.12
8	Sweden	66.44	36.51	29.93	19.57	8.19	2.37	1.03	2.41
9	Spain	66.18	38.65	27.52	15.25	7.15	4.36	2.51	4.55
10	Austria	64.68	32.04	32.64	17.01	7.49	4.13	2.03	4.67
11	Malta	63.02	36.98	26.04	16.68	7.52	3.52	1.34	7.93
12	Estonia	62.61	34.84	27.76	17.40	8.06	3.23	1.89	6.80
13	Luxembourg	60.14	27.86	32.28	20.13	10.16	5.05	3.87	0.65
14	France	59.67	30.62	29.06	16.73	9.30	4.65	2.48	7.17
15	Belgium	59.39	28.26	31.12	18.46	10.30	4.36	2.12	5.37
16	Croatia	58.95	25.00	33.94	15.93	6.27	2.16	0.09	16.60
17	Hungary	58.89	28.13	30.76	18.60	8.54	3.89	1.53	8.55
18	Portugal	55.97	29.93	26.04	14.39	7.59	5.15	2.69	14.21
19	Lithuania	52.91	25.90	27.01	16.40	10.34	6.07	2.79	11.50
20	Greece	52.40	20.02	32.38	14.98	8.51	6.31	2.81	14.99
21	Germany	52.22	19.79	32.43	20.89	11.44	5.61	2.32	7.52
22	Montenegro	52.02	10.55	41.48	25.44	7.61	3.15	0.14	11.64
23	Slovakia	51.31	21.70	29.61	19.30	10.55	4.00	2.05	12.79
24	Cyprus	49.46	24.96	24.51	23.51	9.64	6.35	2.27	8.78
25	Slovenia	46.70	18.88	27.82	20.64	12.86	6.48	3.71	9.62
26	Italy	45.75	22.21	23.54	18.23	10.70	7.15	5.09	13.08
27	Latvia	45.34	16.55	28.79	22.22	15.82	6.30	2.65	7.67
28	Poland	44.30	20.05	24.25	20.36	11.56	6.41	3.79	13.59
29	Bulgaria	35.52	7.73	27.79	15.59	13.36	10.03	5.88	19.61

30	Turkey	33.11	10.61	22.51	20.91	16.60	9.05	6.29	14.03
31	Serbia	32.81	12.17	20.64	31.33	11.15	7.27	2.80	14.64
32	Bosnia and Herzegovina	30.08	6.88	23.20	23.94	13.65	10.75	4.96	16.62
33	Romania	2.73	8.97	18.77	18.73	17.47	15.35	9.91	10.80
34	Iceland	:	:	:	:	:	:	:	:
35	North Macedonia	:	:	:	:	:	:	:	:
36	Albania	:	:	:	:	:	:	:	:

https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en

The results of the DSI index for the year 2023 showed some less significant, and some more significant differences compared to the DSI index of 2021. The first thing that is important to note is that the data for 2023 were not collected and analyzed for all 36 countries, as in 2021, that is, data for Iceland, North Macedonia and Albania are missing. When it comes to North Macedonia and Albania, they occupied low positions in 2021, but it is interesting that Iceland had a leading position in 2021 when it comes to the index of digital skills in Europe.

Considering the lack of data for 2023 for Iceland, which had the leading position in 2021, the leading position has now been taken over by the Netherlands with 82.70% of the population possessing a basic level of digital skills or a level above basic. Finland maintained the second position with a slightly higher percentage of the population with a basic level of digital skills and a level above basic, in 2021 the percentage was 79.18, and in 2023 it was 81.99%. At the very top, Norway, Switzerland, Ireland, Sweden, Denmark and Spain retained their positions, while compared to 2021, when Luxembourg was among the first 10 ranked countries, the Czech Republic and Austria are now there. In 2021, the Czech Republic was in the 15th position, while in 2023, the value of its DSI index jumped to even the 6th position. Luxembourg fell from 10th place to 13th place, which does not represent a significant change. Likewise, in 2021, Austria took 12th place, and in 2023, it recorded growth to 10th place.

As for other significant changes, Belgium recorded a decrease of 4 positions in 2023 compared to 2021, Croatia decreased by 5 positions, as did Slovakia, while Turkey, Bulgaria, Germany and Estonia recorded growth of 4 positions. The biggest growth was recorded by Hungary and Lithuania, by as many as 7 positions, followed by Latvia, which grew by 6 positions, and Montenegro, which grew by 5 positions.

When it comes to Serbia, it recorded a drop by one position and compared to the 30th position it occupied in 2021, the value of the DSI index of Serbia in 2023

occupies the 31st position. However, due to the lack of data for Iceland, Albania and North Macedonia for the year 2023, these results do not fully represent a realistic picture. But what can be concluded is that the top ten positions were recorded by the same countries in both years, namely the countries of Northern and Western Europe.

In the continuation of the work, the DQL index (Digital Quality of Life) is analyzed at the global level for the period from 2019-2023, and we will compare the results, that is, the similarities and differences with the DSI index.

The DQL Index (The Digital Quality of Life) considers the following factors on the basis of which it ranks 121 countries according to the digital quality of life index:

1. Internet accessibility,
2. Internet quality,
3. Electronic infrastructure,
4. electronic security,
5. Digitization of state institutions.

These criteria have been considered since 2020, while in 2019 slightly different elements were considered for a smaller number of countries, 65 to be exact. These elements are:

1. internet speed,
2. Cyber security of the country,
3. Availability of e-government services,
4. Availability and variety of e-entertainment,
5. The presence of the law on the protection of personal data.

Among the countries analyzed in 2019, there is no Republic of Serbia, while China is included in the report, but as a special case. In the 2020 analysis, 85 countries were considered, including Serbia. For 2021, the number of analyzed countries has increased to 110, while for 2022, the number of analyzed countries was 117. In 2023, 121 countries were analyzed.

Table 6. DQL Index in the period from 2019-2023. years

R. no	Country	DQL Index 2019.	Country	DQL Index 2020.	Country	DQL Index 2021.	Country	DQL Index 2022.	Country	DQL Index 2023.
1	Australia	0.7992	Denmark	0.79	Denmark	0.8313	Israel	0.7610	France	0.7902
2	France	0.7985	Sweden	0.79	J. Korea	0.7608	Denmark	0.7347	Finland	0.7483
3	Singapore	0.7854	Canada	0.78	Finland	0.7562	Germany	0.7123	Denmark	0.7377
4	Norway	0.7607	France	0.77	Israel	0.7387	France	0.7105	Germany	0.7357

5	Japan	0.7606	Norway	0.75	IN WITH	0.7360	Sweden	0.6895	Luxemburg	0.7357
6	Canada	0.7516	Netherlands	0.74	Singapore	0.7192	Netherlands	0.6843	Spain	0.7232
7	Denmark	0.7479	UK	0.74	France	0.7128	Finland	0.6826	Estonia	0.7185
8	J. Korea	0.7448	Israel	0.73	Switzerland	0.7093	Japan	0.6785	Austria	0.7166
9	Italy	0.7361	Japan	0.72	Germany	0.7071	UK	0.6685	Switzerland	0.7106
10	Sweden	0.7360	Poland	0.72	UK	0.7065	J. Korea	0.6660	Singapore	0.7096
11	USA	0.7341	Finland	0.71	Netherlands	0.7060	Lithuania	0.6648	Sweden	0.7079
12	Netherlands	0.7331	Singapore	0.71	Japan	0.6983	IN WITH	0.6572	Netherlands	0.7063
13	Israel	0.7269	Estonia	0.7	Sweden	0.6972	Switzerland	0.6570	Lithuania	0.6957
14	Switzerland	0.7223	Austria	0.7	Norway	0.6916	Estonia	0.6554	Romania	0.6944
15	Spain	0.7061	Switzerland	0.7	Luxemburg	0.6867	Singapore	0.6547	UK	0.6296
16	Iceland	0.7045	Germany	0.69	Lithuania	0.6863	Spain	0.6533	Japan	0.6807
17	UK	0.7035	New Zealand	0.69	Australia	0.6835	Norway	0.6389	Israel	0.6660
18	Finland	0.7033	Spain	0.69	Spain	0.6744	Luxembourg	0.6347	Poland	0.6613
19	Germany	0.6914	Australia	0.68	Estonia	0.6662	Italy	0.6330	USA	0.6598
20	New Zealand	0.6872	Italy	0.67	Canada	0.6635	Portugal	0.6260	J. Korea	0.6559
21	Belgium	0.6690	Lithuania	0.67	Austria	0.6620	Belgium	0.6235	Belgium	0.6540
22	Austria	0.6687	USA	0.67	China	0.6529	Austria	0.6214	Canada	0.6527
23	Lithuania	0.6553	Slovenia	0.67	New Zealand	0.6492	Poland	0.6150	Ireland	0.6501
24	Hungary	0.6529	Belgium	0.66	Ireland	0.6459	Ireland	0.6149	Italy	0.6500
25	Portugal	0.6478	Hungary	0.65	Belgium	0.6360	Czech Republic	0.6123	Czech Republic	0.6477
26	Poland	0.6442	Bulgaria	0.65	Poland	0.6360	Canada	0.6038	Norway	0.6452
27	Russia	0.6439	Latvia	0.65	Italy	0.6352	Hungary	0.5999	New Zealand	0.6432
28	Estonia	0.6431	Ireland	0.64	Czech Republic	0.3267	New Zealand	0.5966	Latvia	0.6391
29	Slovenia	0.6302	Portugal	0.63	Slovakia	0.6210	Slovakia	0.5932	Portugal	0.6360
30	Ireland	0.6242	Slovakia	0.62	Portugal	0.6176	Bulgaria	0.5907	Australia	0.6324
31	UAE	0.6215	UAE	0.62	Malaysia	0.6108	Croatia	0.5880	Cyprus	0.6299

32	India	0.6165	Czech Republic	0.61	Hungary	0.6083	Slovenia	0.5867	Malta	0.6239
33	Romania	0.6110	Qatar	0.61	Qatar	0.6050	Latvia	0.5854	Slovakia	0.6215
34	Qatar	0.6057	Croatia	0.6	Romania	0.5975	Romania	0.5847	Hungary	0.6149
35	Turkey	0.6049	Cyprus	0.6	Cyprus	0.5951	Australia	0.5806	Slovenia	0.6148
36	Slovakia	0.5867	Uruguay	0.59	Slovenia	0.5950	Malta	0.5747	Croatia	0.6057
37	Mexico	0.5846	Greece	0.58	Croatia	0.5932	Cyprus	0.5683	Malaysia	0.5869
38	Croatia	0.5832	China	0.58	Greece	0.5879	Malaysia	0.5580	UAE	0.5821
39	Latvia	0.5791	Romania	0.58	Bahrain	0.5873	Greece	0.5561	Greece	0.5781
40	South Africa	0.5738	Azerbaijan	0.57	Malta	0.5834	Chile	0.5481	Bulgaria	0.5704
41	Malaysia	0.5727	Malaysia	0.57	Latvia	0.5785	Uruguay	0.5472	Uruguay	0.5652
42	Uruguay	0.5702	Russia	0.57	UAE	0.5735	Russia	0.5325	Chile	0.5625
43	Ukraine	0.5639	Kuwait	0.54	Chile	0.5713	China	0.5261	Argentina	0.5624
44	Chile	0.5624	Turkey	0.54	Thailand	0.5672	UAE	0.5130	China	0.5577
45	Czech Republic	0.5598	Saudi Arabia	0.53	Bulgaria	0.5664	Argentina	0.5106	Saudi Arabia	0.5365
46	Albania	0.5564	Macedonia	0.52	Serbia	0.5654	Qatar	0.5088	Ukraine	0.5295
47	China	0.5548	Kazakhstan	0.52	Ukraine	0.5640	Armenia	0.5052	Kazakhstan	0.5280
48	Greece	0.5534	Argentina	0.52	Philippines	0.5584	Serbia	0.4976	Qatar	0.5277
49	Georgia	0.5499	Serbia	0.52	Argentina	0.5573	Thailand	0.4904	Brazil	0.5245
50	Azerbaijan	0.5312	Mexico	0.52	Saudi Arabia/ Moldova	0.5523	Ukraine	0.4893	Serbia	0.5236

<https://surfshark.com/dql> , <https://surfshark.com/dql2020> , <https://surfshark.com/dql2021> , <https://surfshark.com/dql2022> , <https://surfshark.com/dql2023>

Comparing the DQL Indices for the ranked 50 countries in the period from 2019 to 2023, it is necessary to point out that the criteria used for the ranking in 2019 are different compared to the criteria of the following years, which is why the source, Surfshark, points out that the indices from 2020 to 2023 are comparable. What has already been stated, but is important for the analysis, is that the number of countries whose DQL was analyzed increased over the years, as well as that Serbia was not among the countries analyzed in 2019. This display presents the values of the DQL Index for 50 countries around the world, as well as the movements of this index by year and country, based on which certain countries occupied a higher or lower position, while some countries appeared for the first time among the top 50, and some fell to a position below 50th place.

By analyzing the DQL indicators for all five years, it is evident that European countries occupied more than 50% of the top 50 ranked countries. The countries of Scandinavia stand out in particular, occupying some of the first ten positions every year, and it is interesting that in 2023, the first nine positions on the list were occupied by European countries.

As far as Serbia is concerned, the analysis of the DQL Index in Serbia began in 2020 and the values for the period from 2020-2023 show that Serbia is among the first 50 ranked countries, and in 2020 it took the 49th position with an index of 0.52. then in 2021, Serbia advanced to the 46th position with an index of 0.5654, and in 2022 it fell back to the 48th position with an index of 0.4976, and at the end of 2023, Serbia occupied the 50th position with an index of 0.5236.

The comparison of the results of the DSI index and the DQL index shows that it confirms that the top ranked countries are the countries of Northern and Western Europe, and it is important for Serbia that although it is in the ranking of the DSI index (36 European countries), it has taken positions in the ranking of the DQL index at the global level among the top 50 countries, compared to the ranked 85,110,117 and 123 countries respectively. This means that Serbia has remained constant over the last few years when it comes to investing in digital transformation and acquiring digital skills.

Relationship between DQL index, DSI index and economic development

Surfshark also provides a brief analysis of the DQL index and GDP per capita, with a clear conclusion that countries with a lower DQL index are also countries with a lower value of GDP per capita. A rise in the value of the DQL index of 0.0300 could potentially affect a rise of \$10,000.00 in GDP per capita of the country. However, in 2019, several countries showed surprisingly good performance in certain digital areas, despite low GDP per capita values. These are: Russia, Hungary, Portugal, Poland, Estonia, Slovenia, Lithuania, India, Romania and Turkey. The mean value of the DQL index is 0.6110/1.000, which indicates that the digital quality of life based on this factor is average. No country achieved a value above 0.800 indicating that many deficiencies were present in various areas. A well-developed Internet infrastructure is also essential, and the key lies in investments in mobile Internet. When it comes to personal data protection laws, 62 of the 65 analyzed countries have laws on personal data protection, however in many cases the commitment to personal data protection is unrealistic.

According to the report for 2020, it is emphasized that progress in e-infrastructure corresponds with economic wealth only up to a certain point. Countries with above-average GDP per capita values do not guarantee better Internet technologies or greater Internet usage. Three countries with relatively high values

of GDP per capita, Kuwait, Bahrain and Saudi Arabia, failed when it comes to the level of Internet quality and electronic security.

The values of the DQL index and their analysis show that investments in electronic infrastructure and digitization of state institutions have the greatest contribution to improving the digital quality of people's lives, while Internet accessibility has proven to be the least important factor for the DQL index. When it comes to GDP per capita, the report shows that its value does not necessarily determine the quality of a country's electronic infrastructure. Compared to 2020, the impact of GDP per capita on electronic security has decreased in 2021. Serbia, along with 20 other countries, including the countries of the region: Croatia, Bulgaria, Romania and Hungary, surpassed other countries in providing higher levels of electronic security and electronic infrastructure. Although GDP per capita largely corresponds to the DQL index, there are countries that have a better digital quality of life with a lower GDP per capita than expected, indicating that there is potential to raise the level of digital quality of life even with fewer resources and a more focused strategic planning.

For the year 2022, the results are practically the same when it comes to the correlation of GDP per capita and the DQL index, with the fact that in that year 17 countries were singled out that exceeded expectations in terms of the DQL index, and when it comes to electronic security, digitization of state institutions (e-administration) and electronic infrastructure. Serbia was once again among these countries, as well as Hungary, Croatia, Bulgaria and Romania.

And when it comes to the report for 2023, European countries continue to occupy the highest ranked positions in terms of the DQL index. Western Europe is the leader in terms of the DQL index, but also in terms of economic wealth. An interesting fact for 2023 is that although the region of Northern Europe records a 15% lower value of GDP per capita compared to North America, the values of the DQL index in Northern Europe are higher compared to North America. Also, an interesting fact is that, although the GDP per capita of West Asia is higher than the global average by 38%, the value of the DQL index of West Asia falls below the global average. These data confirm again that the correlation between the DQL index and GDP per capita is important, but GDP is not the most important indicator of the quality of digital life of the citizens of a certain country. Once again, Serbia, Romania, Croatia, Bulgaria and Hungary, along with 17 other countries out of a total of 121 ranked countries, proved to be countries with lower GDP values that managed to achieve more than the expected values of electronic security, electronic infrastructure and e-administration (digitalization of state institutions). It has been shown that countries that invest in e-government have a greater chance of improving the value of the DQL index, with the conclusion that the value of e-government is the factor whose value has the greatest impact in relation to the overall DQL index.

By analyzing the results of the DSI index and the DQL index, and taking into account other factors that determine the growth and development of the economy, it is evident that better positions were taken by countries with developed economies, such as Switzerland, Norway, Austria, Japan, Belgium, the USA, Australia, Singapore, South Korea and many others.

Tomše and Snoj (2016) determined that the development of the ICT sector has positive effects on the economy, specifically when it comes to GDP per capita, but a negative impact when it comes to the unemployment rate. The authors point out that the ICT sector development index is positively correlated with the innovation index, and therefore recommend investments in the ICT sector in order to maintain a global competitive advantage prenost (Tomše, Snoj, 2016; Tomše, Snoj, 2016; Tomše, Snoj, 2016).

In 2012, Milojević and colleagues recognized the potential of the ICT sector in the Republic of Serbia and pointed out that despite the small market, this sector contributed 5% to the GDP, but that significant investments are necessary in order for the ICT market to have a positive effect on the level companies and the level of the national economy (Milojević, Cvijanović, Ignjatijević, 2012)

Atkinson and Stewart (2013) emphasized the positive effects of the ICT sector on the economy (Atkinson, Stewart, 2013):

- a. Creating high-paying jobs,
- b. In 2011, the IT industry contributed 4.3% of the GDP of the United States of America,
- c. In 2010, the global output of the IT sector more than doubled to \$2.8 trillion compared to \$1.2 trillion in 1995.
- d. The IT sector is responsible for 75% of productivity growth in the United States in the period from 1995-2002 and 44% in the period from 2000-2006.
- e. due to the influence of the dot.com Internet domain, the annual global GDP of the United States of America is \$1.5 trillion higher,
- f. from 2006 to 2010, corporations that invested more in the IT sector achieved productivity growth three times faster than corporations that invested less,
- g. creating high-growth companies,
- h. building high-growth companies,
- i. creation of new sectors and business strategies,
- j. drives innovation,
- k. is a key source of competitive advantage.

GDP per capita is one of the main indicators of economic development, but there are also unemployment rates, foreign trade, national income and others. Many authors point out that digitization or "digital economy" is a strategy without which

countries would not be able to record economic growth and development. Digital transformation implies not only the introduction of new technologies into the production and business process, but also into the complete organizational structure. Daub and Wiesinger (2015) consider that the key factors are employees and knowledge, or in this case digital skills (Daub, Wiesinger, 2015).

Đorđević et al. (2022) believe that in the time to come, digital skills must be available. In order to keep pace with technological changes and developments in the global market, it is necessary to continuously invest in the training of employees and the acquisition of new skills, because knowledge has become a source of strategic advantage, economic power and wealth (Đorđević et al., 2022).

Digital transformation has marked the 21st century, but not only in the form of development and implementation of new technologies, but more and more attention is being directed to human capital and knowledge, that is, the skills possessed by human capital, and thus also to their development and improvement. In addition, many countries that are progressing in the digital transformation face a shortage of skilled labor, i.e. human capital with appropriate knowledge and digital skills.

Olszewska (2017) analyzed the digital performance of the countries of Central and Eastern Europe in the period from 2010-2015, where, among other factors, were analyzed: the level of digital skills, training for ICT and the availability of modern technologies provided by companies to employees, and the level of performance in the area of supply and demand of digital skills. The analyzed countries are Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Poland, Latvia, Lithuania, Romania, Slovakia and Slovenia. The results show that in almost all countries there is a positive outcome of entrepreneurial culture, but low performance in the field of digital infrastructure and integration of digital technologies, as well as low levels of digital skills of employees. The author concludes that there is potential for digital growth, but large investments in the ICT sector and improvement of the performance of companies in the sector of integrating digital technologies into business are necessary. It also emphasizes that one of the biggest barriers to digital growth is precisely the lack of digital skills (Olszewska, 2017).

According to research by AWS (Amazon Web Service) and Gallup - Work Place Consulting & Global Research, the world in which we live and work is becoming increasingly digital, and information technology is driving a significant transformation worldwide, at the individual, organizational and macroeconomic levels. AWS and Gallup conducted one of the largest international surveys on digital skills. More than 30,000 workers and 9,000 employers in 19 countries, which make up 67% of global GDP, participated in the research. The methodology of this research included the classification of income by country by the World Bank, whereby out of a total of 19 countries analyzed, 13 countries have high incomes, namely: Australia, Canada, France, Germany, Hong Kong,

Italy, Japan, New Zealand, Singapore, South Korea, Taiwan, USA, UK, and 6 middle-income countries: Brazil, China, India, Indonesia, Malaysia, and Thailand. The research covered the period from 2020-2022. The research results showed the economic value and importance of digital skills for companies, the impact on GDP growth, income growth, innovation, secure work and better wages [30].

When it comes to advanced digital skills, they generate an estimated \$4.2 trillion in annual GDP in the 19 countries analyzed and \$6.3 trillion globally in income and productivity of workers with advanced digital skills. When basic digital skills and intermediate digital skills are added to advanced digital skills, the total annual global value of digital skills is \$18.5 trillion, roughly 12% of global GDP. In the period from 2000-2021, in the USA, the data processing, Internet publishing, and information services industry grew fivefold, and the four information technology sectors contributed to GDP growth from 2% to 8%. Also, Information Technology companies in Asia and Europe are the fastest growing companies [30].

For the year 2021, Lightcast has summarized 4 major trends of changes in skills based on the research conducted in 2022, which refers to changes in work skills compared to the year 2016(Ercegovac, 2022):

1. The growth of digital skill levels is not only limited to the IT sector, but they are playing an increasing role in other industries. These skills include digital marketing, digital manufacturing skills, data analysis and networking.
2. Digital jobs require not only programming skills, but also a balance of skills such as time management, organization, leadership, verbal communication, positive thinking, listening, critical thinking and building effective relationships, as employee teams in companies are increasingly interactive and cooperative.
3. The use of data visualization has become much more important when it comes to all professions. Required skills are: D3.js, Canva, Adobe Analytics, MS Visio, Alteryx...
4. Careers are evolving according to the current state of media, where technology is widely available, more accessible and flexible all the time. Many jobs now require knowledge and skills in social media management. Examples of skills in demand are Adobe InDesign, YouTube...

The European Union has adopted a strategy for digital transformation called "Europe adapted to the digital age in 2020." This strategy offers a basis for strengthening the European Union's competitive advantage in the so-called "fourth industrial revolution", and from 2022 the latest regulation included in the

"Program of the Digital Decade until 2030" was adopted. This program directs the digital transformation of Europe with specific goals for 2030. .year:

1. Growth digitally qualified population and highly qualified professionals with goal achieving relatives equilibrium , where at least 80% of the population aged 16-74 owns least basic digital skills and employment at least 20 million ICT sector specialist ,
2. Safe , efficient and sustainable digital infrastructure , where will all of ultimate users to be covered gigabit network to the end points networks , and all populated areas covered wireless networks big ones speed the following generations with performance who is are least equivalent to 5G. Production the most modern of semiconductors in the EU, in accordance with EU law on sustainability vital environment amounts at least 20% of the value world production . At least 10,000 climatic neutral high safe marginal of nodes is distributed in the EU, so it guarantees access services data with delay from the everything a few milliseconds where whatever the company they find that by 2025 the European Union get to the first one computer with quantum acceleration , which would make her digital potential Could to be on the peak quantum possibilities until 2030.
3. Digital transformation companies , where at least 75% of EU companies took over services computing in the cloud, in accordance with his own business , big data or artificial intelligence . More than 90% of small and medium-sized EU companies reach at least basic level digital intensity . The EU makes it easier growth of their own innovative extensions and improves their own access finances , what brings at least until doubled number so-called unicorns.
4. Digitization public service , where are key public services 100% online available and where possible for citizens and businesses established online interaction with public administration , 100% of EU citizens have access his own electronic healthy cards , 100% of EU citizens have access means safe electronic identification which are recognized throughout the EU, which and M allows complete control over the transactions who is include their own identity I super personal data which share (Decision (EU) 2022/2481).

Government of the Republic Serbia follows EU Strategy , and in 2021 it adopted the " Strategy development informational society and information of security for the period from 2021-2026", with with the goal of continuing with further promotion digital knowledge and digital skill of all of citizens , then to rise to

capacity employees and in public and in private sector for use new ones technology , like and to improve digital infrastructure in education institutions (“Službeni glasnik RS”, broj 86. od 3.septembra 2021.godine).

Social networks as an important part of digital skills and digital literacy

Social networks were created at the end of the 20th century for the purpose of establishing communication between people from different parts of the world. Although the original role of social networks was social, due to the explosive jump in popularity among users around the world, the industry also recognized the potential benefits of including social networks in the portfolio of its business, and the effects of this strategy were very quickly shown to be profitable. However, unlike the users of social networks, the industry recognized the potential benefits of this phenomenon somewhat later, which was particularly different in developed and developing countries.

According to the Global Web Index, social networks have completely changed the concept of marketing, and their popularity continues to grow, according to statistical data for the year 2023. In support of this, the data shows that social networks are used by 60% of the population worldwide, while the average time spent using social networks is 2 hours and 24 minutes per day. Which social networks are most popular among users depends on their age, as well as on the country in which they live. Due to people's living habits and the fact that social networks have become an integral part of the lives of more than 60% of the population, it was inevitable that the industry recognized the phenomenon of social networks as a source of income, directly or indirectly. Whether social media is used as the sole marketing tool or in combination with other tools, a social media presence in the 21st century is an indispensable factor. The very purpose of presence on social networks can be advertising, informing consumers, building and maintaining a brand and many others, but communication with consumers through social networks is the most valuable marketing tool of any company.

The importance of using social networks for commercial purposes is manifold. In addition to achieving fast and two-way communication with consumers, the promotion dreams of products and/or services, translating consumers from the state of buyer and consumer to the state of "promoter", when consumers recommend the product and/or service to reference groups (Rakić, Rakić, 2008). Because social networks are considered to be transmitters of information that customers evaluate as credible, Levy (2010) points out that organizations strive to create a positive image on that basis (Levy, 2010). Banković and Gijić (2010) indicate that another reason for the increasing commercial use of Internet social

networks is the constant exponential growth of the number of users of social networks, as well as their online activities (Banković, Gijić, 2010).

Kotler et al. (2017) also agree with this view and say that the market is becoming inclusive, and social networks reduce barriers in communication between businesses and consumers, whereby consumers transfer advice and recommendations from businesses and consumers and move from a state of awareness (I know about the product), to action (I buy the product) to representation (I recommend the product) (Kotler, et al., 2017).

Among the ways to improve operations in domestic companies, and with the aim of maintaining a competitive advantage, Bešić et al. (2022), among other things, mention the application of modern achievements in the field of information and communication technologies (Bešić et al., 2022).

It is indisputable that the business of many industrial branches has moved to business through social networks, even many companies have moved exclusively to business through social networks. With the development of the ICT sector and digital transformation, the demand for human capital with digital skills is growing year by year. Social networks have enabled globalization, that is, the opportunity for companies to move from the local, national, regional or international market to the global market. This is supported by the growth of e-commerce, as well as the growth of the digital literacy of the population, especially older citizens, users of social networks, and the younger population that improves digital skills for employment purposes.

Gardašević (2021) points out that social networks have completely changed the way users use the Internet, which has led to necessary adaptations in the business of both large companies and small and medium-sized enterprises (Gardašević, 2020). In addition, Gardašević, Ćirić and Carić (2018) point out the importance of understanding the motives behind the use of social networks by consumers, so that companies can respond adequately and direct their marketing and business strategy towards achieving the ultimate goals (Obradović, 2022).

Conclusion

The information age or the age of knowledge is based on knowledge, that is, on human capital. Since the appearance of the first computers, the Internet and mobile phones, the way of doing business and the way of life have changed radically, so that today life without these devices and without the world's global network would be unimaginable in the civilized world.

With all the technological achievements and changes, which have long been happening not on a decade level, but on an annual and even quarterly level, the population of the world, as well as the industry, adapt to those increasingly frequent changes that speed up the business process and make it significantly

more efficient. On the other hand, these changes require new skills and knowledge in order to implement technological innovations in business in an adequate way.

Itself implies the mastering of digital skills, i.e. constant improvement and retraining of the workforce in the ICT sector. The importance of investing in digital transformation for the growth and development of companies and their competitiveness, and then also for the growth and development of the economy, has been recognized by companies and over time they allocate and place increasing amounts of capital in technological innovations and improvement of digital knowledge and skills of the workforce (Dašić, G. 2023).

The importance of investing in digital skills and knowledge has been recognized by leading economic powers, and developing countries are following them by adopting National Strategies related to the plan for developing digital performance and accelerating the digital transformation process.

Digital skills and knowledge mostly refer to the art of managing social networks, which have become an integral part of business, i.e. communication between companies and consumers, product promotion, as well as online trade, not only at the local and national level, but also at the regional and global level.

Literature

3. Ala-Mutka, K. (2011). *Mapping Digital Competence: Towards a Conceptual Understanding*. European Commission, Seville, Spain, DOI:[10.13140/RG.2.2.18046.00322](https://doi.org/10.13140/RG.2.2.18046.00322), Report number: JRC67075, pp. 18.
4. Atkinson, R. D., and Stewart, L. A. (2013). Just the Facts: The Economic Benefits of Information and Communications Technology. (I. T. Foundation, Edit.), pp.3-4.
5. Baltazarević, R. M. (2022), *Digitalna pismenost kao sredstvo prevencije protiv sajber kriminala*, Baština, Institut za srpsku kulturu Priština, Leposavić, br.57, DOI: <https://doi.org/10.5937/bastina32-38103>, str.131-139.
6. Banković, D., Gijić. N. (2010). *Application of WEB 2.0 Technology in Business*, In Application of New Technologies in Management/2nd International Conference ANTiM2010, Tara: Faculty for Education of the Executives of the University of business Academy, 2010, pp.390-395.
7. Bešić, C., Bešić Vukašinović, D.C., Bešić, S. (2022). Izazovi globalne ekonomije i unapređenje poslovanja domaćih cpreduzeća, Zbornik radova sa konferencija JUSK, Beograd, Srbija, str. 8-13.
8. Daub, M., Wiesinger, A. (2015). *Acquiring the Capabilities, You Need to Go Digital*. McKinsey Digital. Retrieved from <http://www.mckinsey.com/insights/business-technology/acquiring-the-capabilities-you-need-to-go-digital>, dostupno 23.01.2024.

9. Dašić, G. (2023). Digital transformation in the sports industry. In: Dašić, D (ed.) *SPORTICOPEDIA* - *SMB*, 1(1), 309-318. <https://doi.org/10.58984/smbic2301309d>
10. Dašić, D. (2023) Application of delphi method in sports. *Sports, media and business*, 9(1), 59-71. <https://doi.org/10.58984/smb2301059d>
11. Đorđević, D., Čočkalović, D., Bogetić, S., Bešić, C. (2022). *Analiza osnovnih apstakata poslovanja u novom tržišnom okruženju*, Zbornik radova sa konferencija JUSK, Beograd, Srbija, str. 36-44.
12. Đorđević, D., Čočkalović, D., Bešić, C., Bogetić, S., Bakator, M. (2022). *Značaj novih znanja i veština za postizanje održivosti u novoj paradigmi poslovanja*, Zbornik radova sa konferencija JUSK, Beograd, Srbija, str. 60-68.
13. Decision (EU) 2022/2481 of the European Parliament and of the Council of the 14 December 2022, establishing the Digital Decade Policy Programme 2030, Article 4: Digital targets, <https://eur-lex.europa.eu/eli/dec/2022/2481/oj>, dostupno 04.02.2024.
14. Gardašević, J. (2020). *Entrepreneurship and Facebook: Analyzing the Network usage on a daily and weekly basis among Serbian and American Respondents*, Journal of Entrepreneurship and Business Resilience, Faculty of Economics and Engineering Management, University Business Academy in Novi Sad, Vol 3, No 1, pp. 5-65.
15. Gardašević, J., Ćirić, M., Carić, M. (2018). *Razumevanje motiva koršćenja društvenih mreža u funkciji unapređenja komunikacije sa potrošačima*, Časopis Marketing, Srpsko udruženje za marketing SeMA, Ekonomski fakultet u Beogradu, vol. 49, br. 4, str. 311-320.
16. Ercegovac, I. (2022). Televizijski formati kao sadržaj koji generišu korisnici - Jutjub kao mas-medijski kanal influensera. *Društveni horizonti*, 2(3), 59-73. <https://doi.org/10.5937/drushor2203059E>
17. <https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts>, dostupno 24.01.2024.
18. https://ec.europa.eu/eurostat/cache/metadata/en/isoc_sk_dskl_i21_esmsip2.htm, dostupno 30.01.2024.
19. https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en, dostupno 24.01.2024.
20. <https://surfshark.com/dql2023/methodology>, dostupno 24.01.2024.
21. <https://surfshark.com/dql2020>, dostupno 24.01.2024.
22. <https://surfshark.com/dql2021>, dostupno 24.01.2024.
23. <https://surfshark.com/dql2022>, dostupno 24.01.2024.
24. <https://surfshark.com/dql>, dostupno 24.01.2024.
25. <https://assets.aboutamazon.com/dd/e4/12d668964f58a1f83efb7ead4794/ws-gallup-global-digital-skills-study-report.pdf>, dostupno 01.02.20234.

26. [https://4906807.fs1.hubspotusercontent-na1.net/hubfs/4906807/Shifting%20Skills_Executive%20Summary%20\(1\).pdf](https://4906807.fs1.hubspotusercontent-na1.net/hubfs/4906807/Shifting%20Skills_Executive%20Summary%20(1).pdf), dostupno 01.02.2024.
27. <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/> preuzeto 01.01.2024.
28. Jacobs, L. (2021), *Developing mobile digital skills in low and middle-income countries*, GSMA, pp.4, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/11/Developing-mobile-digital-skills-in-low-and-middle-income-countries.pdf>, dostupno 28.01.2024.
29. Jenkins, H. (2006). *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, Building the Field of Digital Media and Learning, The MacArthur Foundation, Chicago, Illinois, pp. 4.
30. Kotler, P., Kartajaya, H., Setiawan, I. (2017). *Marketing 4.0*, John Wiley and Sons Inc, Hoboken, New Jersey, [https://www.drnishikantjha.com/booksCollection/Marketing%204.0_%20Moving%20from%20Traditional%20to%20Digital%20\(%20PDFDrive%20\).pdf](https://www.drnishikantjha.com/booksCollection/Marketing%204.0_%20Moving%20from%20Traditional%20to%20Digital%20(%20PDFDrive%20).pdf), dostupno 02.02.2024.
31. Levy, J.R. (2010). *Facebook Marketing: Design your next Marketing Campaign*, 2nd ed., Indianapolis: Pearson education, pp.125.
32. Lopez 2013: Islas Lopez. "Digital literacy and academic success in online education for underprivileged communities : the prep@net case." Ph.D. Dissertation, University of Texas, Austin
33. Milenković, N., Radosavljević, M., & Vladislavljević, V. (2023). Korišćenje aplikacija sa otvorenom licencom u razvoju programa poslovnog preduzeća. *Održivi razvoj*, 5(2), 35-49. <https://doi.org/10.5937/OdrRaz2302035M>
34. Milojević, I., Cvijanović, D., Ignjatijević, S. (2012). *Makroekonomski okvir konkurentnosti srpske privrede i ICT sektora*, Međunarodni naučno-stručni časopis za ekonomiju i politiku tranzicije „Tranzicija“, Ekonomski institut Tuzla, JCEA Zagreb, IEP Beograda, feam Bukurest, Vol.14 No. 30, str. 93-98.
35. Obradović, D. (2022). Operacije uticaja na društvenim mrežama kao hibridna pretnja. *Društveni horizonti*, 2(4), 217-233. <https://doi.org/10.5937/drushor2204217O>
36. Olszewska, K. (2017). The Digital Economy in Central and Eastern European Countries (CEECS) – The Case of Poland, International Scientific Conference on Economics and Management EMAN, Ljubljana, Slovenija, str. 363-370.
37. Perović, A. & Đukić, S. (2023). Značaj komunikacije u sportu. *Menadžment u sportu*, 14(1), 103-118.

38. Rakić, B, Rakić. M. (2008) *Marketing i inovacije u funkciji razvoja organizacija i privrede*, Međunarodni naučni skup razvojne strategije preduzeća i privrede, Beograd: Mega-trend univerzitet, pp. 255-259.
39. Strategija razvoja informacionog društva I informacione bezbednosti u Republici Srbiji za period od 2021. do 2026.godine, "Službeni glasnik RS", broj 86. od 3.septembra 2021.godine, <https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2021/86/1/reg>, dostupno 04.02.2024.
40. Tinmaz, H., Lee, YT., Fanea-Ivanovici, M., Baber, H. (2022). A systematic review on digital literacy. *Smart Learn. Environ.* **9**, 21 (2022). <https://doi.org/10.1186/s40561-022-00204-y>
41. Tomše, D., Snoj, B. (2016). *The impact of Information and Communications Technologies on Unemployment rate on OECD Countries*. Integrated Politics of Research and Innovations. International Scientific Conference, Limen, pp.605-610.
42. Tomše, D., Snoj, B. (2016). *The impact of Information and Communications Technologies on GDP per Capita*. Knowledge Based Sustainable Economic Development. International Scientific Conference, Eraz, pp. 119-120.
43. Tomše, D., Snoj, B. (2016). *The impact of Information and Communications Technologies on Innovations*. International Scientific Conference on Economics and Management EMAN, Ljubljana, Slovenija, str. 556-561.
44. Trifunović, D., Bogdanović Bulut I., Tankosić, M., Lalić, G. & Nestorović, M. (2023). Research in the use of social networks in business operations. *Akcionarstvo*, 29(1), 39-62
45. UNESCO (2018). "Global framework of reference on digital literacy skills for indicator 4.4.2: Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skill (Draft Report)." Paris: UNESCO. <https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>, dostupno 10.01.2024.
46. Vidas-Bubanja, M., Bubanja, I. (2016). *The High Quality and Sustainability as Characteristics of Doing Business in Digital Connected World*, International Journal of Advanced Quality, JUSK, UDC 658.5, ISSN 2217-8155, no 2, vol 44, pp. 7-12.
47. Vidas-Bubanja, M, Popovčić-Avrić, S. (2017). *Izazovi globalnog poslovanja kompanija u savremenom digitalnom okruženju*, International Scientific Conference on Economics and Management EMAN 2017, Ljubljana, Slovenija, str.544.

48. Van Deursen, A.J.A.M. & Van Dijk, J.A.G.M., (2011). Internet skills, and the digital divide. *New media & society*. DOI:[10.1177/1461444810386774](https://doi.org/10.1177/1461444810386774), pp. 893-911.
49. Van Deursen, A.J.A.M., Helsper, E.J., & Einon, R. (2014). *Measuring Digital skills: From Digital Skills to Tangible Outcomes project report*, University of Twente / London School of Economics / Oxford University, DOI:[10.13140/2.1.2741.5044](https://doi.org/10.13140/2.1.2741.5044), pp. 9-10.
50. Van Deursen, A.J.A.M. & Van Dijk, J.A.G.M. (2014). The digital divide shifts to gaps of usage. *New media & Society*, 16(3), pp. 507-526.
51. Vukosavljević, D., Vukosavljević, D., Miletić, V. (2023). Analysis of multidimensional globalization index on the example of the Republic of Serbia and the surrounding countries. *Akcionarstvo*, 29(1), 9-38
52. Vuković, M., Urošević, S., Dašić, D. (2023) Threats to objectivity in the social science research. *Sports, media and business*, 9(2), 143-158. <https://doi.org/10.58984/smb2302143v>
53. Zupur, M., & Janjetović, M. (2023). Održivost marketinga lične prodaje na savremenom tržištu. *Održivi razvoj*, 5(2), 7-19. <https://doi.org/10.5937/OdrRaz2302007Z>

PRAVILA TEHNIČKE PRIPREME RADOVA

Ovo uputstvo za autore daje sve neophodne informacije, kao i šablon za pripremu radova pre podnošenja za publikovanje u časopisu ODITOR. Molimo Vas da maksimalno pažljivo pristupite korišćenju ovog dokumenta, odnosno da ga shvatite kao skup uputstava i praktičan primer koji u mnogome doprinosi lakšoj i efikasnijoj manipulaciji nad Vašim radom u svim fazama uređivanja časopisa. Radovi koji odstupaju od datog šablona se neće uzimati u razmatranje.

Format strane: *Width* 170 mm x *Height* 240 mm; **Margine:** gore/dole 20 mm, levo/desno 18 mm; **Layout:** *Header* 1,25cm, *Footer* 1,25cm; **Orientation:** Portrait. Preferira se **obim radova** do maksimalnih 30.000 karaktera (bez razmaka), odnosno 15 stranica. Radovi ne bi trebalo da budu kraći od 8 stranica. U zavisnosti od kvaliteta rada Uredništvo može prihvatiti i duže radove. Molimo Vas da radove pripremate na računaru u programu **Microsoft Word 2003** ili nekoj kasnijoj verziji ovog programa.

U nastavku sledi detaljan **Šablon** (tehničko uputstvo) za pravilnu pripremu radova za časopis ODITOR. Molimo Vas da maksimalno moguće poštujuete tehnička pravila data sledećim šablonom.

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

Nikola Nikolić⁸⁴, Petar Petrović⁸⁵, Marko Marković⁸⁶

Rezime

Poželjno je da rezime sadrži od 100 do 150 reči, te da sadrži sve bitne činjenice rada, poput cilja rada, korišćene metode, najvažnijih rezultata i osnovnih zaključaka autora.

Tokom pisanja rezimea treba koristiti slova Times New Roman (TNR), veličina fonta (font size) 11, Italic, ravnanje teksta Justify, a tekst rezimea pisati bez proreda (Line Spacing Single), sa razmakom od 6 pt između pasusa, bez uvlačenja prvog reda.

Izbegavajte korišćenje indeksa i specijalnih simbola u apstraktu, odnosno definišite sve skraćenice u apstraktu kada se prvi put upotrebe. Nemojte citirati reference u apstraktu.

Autori će naslov rada, rezime rada i ključne reči napisati na engleskom jeziku na kraju rada, ispod listinga korišćene literature. Tekst srpske i engleske verzije apstrakta i ključnih reči se moraju podudarati u svakom pogledu.

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

JEL: *(navesti JEL klasifikaciju rada na osnovu sadržaja a u skladu sa uputstvom) F16, M24 (www.aeaweb.org/jel/jel_class_system.php)*

Uvod

Molimo Vas da striktno poštujuete uputstva o formatiranju i stilove date u ovom šablonu. Ne menjajte veličinu fonta ili razmak redova da biste ubacili više teksta u uslovno ograničeni broj stranica.

Uredništvo organizuje proces recenziranja pristiglih radova i vrši odabir radova za publikovanje na osnovu urađenih recenzija, odnosno procenjenog kvaliteta radova od strane imenovanih recezenata. Međutim, krajnja odgovornost za poglede, originalnost i tvrdnje iznete u radovima počiva isključivo na autorima rada.

Molimo Vas da poštujuete osnovna načela strukturiranja naučnih radova, odnosno trudite se koliko je to moguće da Vaš rad ima sledeće segmente: Uvod, Cilja rada i korišćena metodologija, Rezultati rada sa diskusijom, Zaključak, Literatura.

⁸⁴ Vanredni profesor, dr Nikola Nikolić, Univerzitet u Beogradu, Ekonomski fakultet, Kamenička 6, Beograd, Srbija, Telefon: +381 11 555 22 33/lokal 28 228, E-mail: nikola.nikolic@iep.bg.ac.rs

⁸⁵ Dr Petar Petrović, naučni saradnik, Centar za ekonomska i finansijska istraživanja, Bulevar Mihajla Pupina 10g/Vp 50, Telefon: +381 11 222 222, E-mail: petar.petrovic@gmail.com

⁸⁶ Asistent, mr Marko Marković, Univerzitet u Beogradu, Ekonomski fakultet, Kamenička 6, Beograd, Srbija, Telefon: +381 64 111 22 33, E-mail: marko.markovic@gmail.com

Tokom pisanja rada treba koristiti slova **Times New Roman (TNR)**, veličina fonta (**font size**) **12**, ravnanje teksta **Justify**, a tekst rada pisati bez proreda (**Line Spacing Single**), sa razmakom od **6 pt između pasusa, bez uvlačenja prvog reda**. Radovi se pišu na srpskom jeziku, osim za strane autore koji pišu na engleskom ili nekom drugom jeziku. Preporučljivo je rad pisati u trećem licu jednine ili množine. Pre slanja rada, obavezno proveriti pravopisne greške.

Podnaslovi se pišu fontom **Times New Roman**, veličina fonta (**font size**) **12, bold, centrirano**, samo prvo slovo veliko, razmak podnaslova i teksta iznad **12 pt (before 12 pt)**, a razmak podnaslova i teksta ispod **6 pt (after 6 pt)**. Molimo Vas koristiti prikazani stil pisanja u ovom šablonu.

Molimo Vas da definišete **skraćenice i akronime** prilikom prvog pojavljivanja u tekstu rada, čak i u slučaju da su već bili definisani u apstraktu rada. Ne koristite skraćenice u naslovu rada osim ukoliko se one apsolutno ne mogu izbeći

Radi unosa **jednačina i formula** u rad, koristite Microsoft Equation Editor ili dodatak za pisanje jednačina MathType (www.mathtype.com). Ne preporučuje se korišćenje ugrađenog editor jednačina iz programa Word 2007. Proverite da li ste definisali sve simbole u jednačini (neposredno posle jednačine).

Reference (autori citata) se navode direktno u tekstu rada u sledećem obliku (Nikolić, 2012; ili Nikolić, Petrović, 2012; ili Nikolić et al., 2012). Ne navodite ih kao indekse u četvrtastoj zagradi [3] ili u fusnoti. Trudite se da fusnotu koristite samo u slučaju bližih objašnjenja određenih pojmova, odnosno razjašnjenja realnih ili hipotetičkih situacija. Nemojte vršiti numeraciju stranica.

Tabele moraju biti formirane u tekstu rada, a ne preuzete u formi slika iz drugih materijala. Tabele unositi u sam tekst rada i numerisati ih prema redosledu njihovog pojavljivanja. Nazivi tabela moraju biti dati neposredno iznad tabele na koju se odnose. Koristite dole prikazani stil tokom njihovog formatiranja. Naslov tabela pisati sa razmakom 6 pt – iznad/before i 6pt – ispod/after, u fontu TNR, font size 12, ravnanje Justified. Tekst unutar tabela pisati fontom TNR, font size 9. Tekst u zaglavlju tabela boldirati. Izvor i potencijalne napomene pisati sa razmakom 6 pt ispod tabela (before). Izvore i napomene pisati u fontu TNR, font size 10, ravnanje Justified. Naredni pasus početi na razmaku od 6pt od izvora tabele ili napomene (after). Tokom pisanja rada u originalnom tekstu treba markirati poziv na određenu tabelu (*Table 5.*). Trudite se da se sve tabele u radu veličinom uklapaju u zadati format strane (Table properties – preferred width – max 97% - alignment: center). Sav tekst u poljima tabele treba unositi u formi (paragraph – spacing: before/after 0pt, line spacing: single). U slučaju da se tabela lomi na narednu stranicu, molimo Vas da prelomljeni deo tabele na narednoj stranici bude praćen zaglavljem tabele.

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).

Kod pisanja zaključka rada, molimo Vas imajte na umu da iako **Zaključak** može dati sažeti pregled glavnih rezultata rada, nemojte ponavljati apstrakt na ovome mestu. Zaključak može objasniti značaj rada, dati preporuke za dalje delovanje ili predložiti dalji rad na obrađivanoj temi.

Literatura se navodi na kraju rada pre apstrakta na engleskom jeziku, abecednim redom, prema prezimenu autora. *Molimo Vas da reference navodite u originalu (na jeziku na kome su objavljene) u obimu u kom su korišćene/citirane tokom pisanja*

rada. Literaturu navoditi u fontu TNR, font size 12, ravnanje Justified, sa međusobnim razmakom 3pt – iznad/before i 3pt – ispod/after. U svim literaturnim jedinicama koristiti **Čikaški šablon za stil**. Molimo Vas da navodite prezimena svih autora, a ne da koristite stil navođenja Nikolić et al. Nemojte kombinovati literaturne jedinice (pod jednim rednim brojem može biti samo jedna referenca) i uvek pišite pune naslove u radu korišćenih literaturnih jedinica. Ukoliko je korišćena/citirana literatura preuzeta iz internet publikacija, posle pravilno izvršenog imenovanja literaturne jedinice u zagradi se mora navesti kompletan link sa koga je materijal preuzet (dostupno na web sajtu: www.nikolanikolic.pdf). Molimo Vas pridržavajte se dole navedenih primera navođenja različitih tipova literaturnih jedinica i referenci.

Literatura

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

Prilikom unošenja literaturnih jedinica unosite korišćenjem **Čikaškog šablona za stil**, minimum 10 literaturnih jedinica. Sva korišćena literatura mora biti citirana u radu.

TITLE OF THE ARTICLE (CENTRED, TNR, SIZE 12, BOLD, ALL CAPITAL LETTERS, MAXIMUM IN TWO LINES)

Abstract

Summary in English which should be written at the end of the paper. It should contain the text which is the same as in the summary written in Serbian at the beginning of the paper.

Key words: *note, maximally, five, key, words.*

RULES FOR TECHNICAL PREPARATION OF ARTICLES

These Instructions will give all necessary information to author(s), as well as template for the articles preparation before their submission for publication in the journal Auditor. We are asking you to use this document with a maximal attention, in other words to realize it as a set of instructions and practical example that will contribute to easier and more efficient operation under your article within the all phases of journal editing. Articles that deviate from mentioned template are not be taken into consideration.

Page setup: **Paper size:** *width* 170 mm x *height* 240 mm; **Margins:** top/bottom 20 mm, left/right 18 mm; **Layout:** *header* 1,25cm, *footer* 1,25cm; **Orientation:** Portrait. Paper volume up to 30.000 characters (without spaces) or 15 pages is preferable. Articles should not be shorter than 8 pages. Depending on papers' quality, Editorial Board could also accept longer articles. Article has to be prepared electronically (on computer), in program **Microsoft Word 2003** or some later version of this program.

Below is a detail **Template** (technical instructions) for correct preparation of articles that will be submitted to the journal Auditor. You are asked to maximum possible follow the technical instruction given by the following template.

TEMPLATE: TITLE OF THE ARTICLE (CENTRED, TNR, SIZE 12, BOLD, ALL CAPITAL LETTERS)

Nik Holmes⁸⁷, John Peters⁸⁸

Abstract

It is desirable that Summary contains up to 150 words, as well as to contain all essential paper elements, such as goal(s), used method(s), important results and general authors' conclusion(s).

During the summary writing, it should be used font Times New Roman (TNR), font size 11, Italic, alignment text Justify, line spacing single, with spacing of 6 pt between paragraphs, without indentation of the first line.

Please, avoid the use of the indexes and special symbols within the Summary, and define all abbreviations whenever they are used for first time. Do not cite references in Summary.

Author(s) from Serbia are submitting article title, summary, key words and information about themselves on Serbian language at the end of the article, after the list of used literature. Text of the Serbian and English version of Summary must match in every sense.

Key words: *note, maximally, five, key, words.*

JEL: *F12, M24* (www.aeaweb.org/jel/jel_class_system.php)

Introduction

During the article writing, it should be used font **Times New Roman** (TNR), **font size 12**, alignment text **Justify**, **Line Spacing Single**, with **spacing of 6 pt between paragraphs, without indentation of the first line**. Articles should be written only in English. It is advisable to write the article in the third-person singular or plural with the use of active form. Before paper submission, please check grammatical and spelling mistakes by the spellchecker for the English language.

Sub-headings should be written by font **Times New Roman**, **font size 12, bold, centred**, only first letter capital, spacing between sub-heading and paragraph above 12 pt (**before 12 pt**), and spacing between sub-heading and paragraph below 6 pt (**after 6 pt**). Please use the writing style presented in this template.

⁸⁷ Nik Holmes Ph.D., Full Professor, Faculty of Economics, Christmas street no. 12, New York, USA, Phone: +xxx xx xxx xxx, E-mail: nik.holmes@gmail.com

⁸⁸ John Peters Ph.D., Associate Professor, University of Technology, Napoleon street no. 1, Jassy, Moldavia, Phone: +xxx xx xxx xxx, E-mail: johnpeters@yahoo.com

Please define **abbreviations and acronyms** during their first occurrence within the text, even in case that they were previously defined in article summary. Do not use abbreviations in article title, unless they can not be avoided.

For **equations and formulas** use the Microsoft Equation Editor or addition for equations writing Math Type (www.mathtype.com). Use of built-in equation editor within the program Word 2007 is not recommended. Please check if all symbols within the equations/formulas are defined (forthwith after equation/formula).

Reference (author(s) of quotes) has to be entered directly in the text of article in next form (Vall, 2014; or Parks, Robberts, 2016; or Nikolic et al., 2016). Please do not write them as indexes in square brackets [3] or in footnote. Try to use a footnote only in the case of closer explanation of certain terms, or clarification of real and hypothetic situations. Do not numerate the pages.

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.

Literature has to be set at the end of article, in alphabetical order, according to the author's surname. *All references should be cited in original language (in the language on which are published before), in the volume in which are used within the manuscript preparation.* Literature units have to be written in font TNR, font size 11, alignment Justified, with mutual spacing of 3 pt - before/after.

Literature

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