CIVITAS

ČASOPIS ZA DRUŠTVENA ISTRAŽIVANJA

Reč urednika

Poštovani čitaoci, kolege i autori,

Pred vama je prvi broj časopisa CIVITAS za 2022. godinu. Časopis u kontinuitetu, dvanaestu godinu zaredom, objavljuje radove koji se bave različitim aktuelnim pitanjima i problemima iz oblasti prava, bezbednosti, psihologije, filologije i ekonomije, kao i interdisciplinarnim istraživanjima iz navedenih naučnih disciplina.

Časopis CIVITAS je od 2021. godine kategorizovan od strane Ministarstva prosvete, nauke i tehnološkog razvoja kao vrhunski nacionalni časopis kategorije **M51**. U proteklom periodu časopis je indeksiran u Evropskom referentnom indeksu za društvene i humanističke nauke ERIH PLUS, a uključen je i u Kinesku naučnu infrastrukturu – CNKI, Ulrich's Periodicals Directory, Indijsku mrežu razmene časopisa – J-Gate i *online* biblioteku centralne i istočne Evrope – CEEOL.

Radovi prihvaćeni za objavljivanje, tj. radovi koji su prošli postupak recenzije, obuhvataju različita pitanja iz domena društvenih nauka. U fokusu ovog broja jesu radovi koji analiziraju noćenja u uslovima pandemije Kovid-19, makroekonomsko prilagođavanje na periferiji evrozone i članica EFTA, strategije prevladavanja stresa u vanrednim situacijama, odlike klijenata kao prediktore fenomena rane psihičke promene tokom psihološkog tretmana, anksioznost od stranog jezika među učenicima osnovnih škola, makroekonomske izazove klimatskih promena, odgovornost direktora u pravu Republike Srbije, kurseve anglo-američke književnosti na tercijarnom obrazovnom nivou usled pandemije Kovid-19, pojavu i širenje terminologije insipirisane Kovidom-19 i karakteristike oblika zloupotreba u sajber prostoru u toku pandemije Kovid-19.

Sve informacije o časopisu, uputstva za autore i recenzente i sastav redakcije i imena recenzenata mogu se naći na sajtu na srpskom i engleskom jeziku. Prijava radova obavlja se putem sajta časopisa na internet adresi http://civitas.rs/index.php/prijava-rada ili mejlom na redakcija@civitas.rs

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Do sledećeg broja,

Prof. dr Vladimir Njegomir

U Novom Sadu, 11. jula 2022. godine

Editor's Foreword

Dear Readers, Colleagues, and Authors,

Welcome to the first issue of the CIVITAS Journal for 2022.

Since 2011, the journal has published articles focusing on various current trends and topics related to law, security, psychology, philology, and economics, as well as interdisciplinary research involving the above fields.

In 2021, the journal was awarded the M51 ranking by the Serbian Ministry of Education, Science and Technological Development, and classified as a leading national journal.

The journal has been indexed in the ERIH PLUS academic journal index for the HSS (Humanities and Social Sciences) society in Europe, in CNKI (China National Knowledge Infrastructure), Ulrich's Periodicals Directory, J-Gate (Indian database for e-journal literature), and CEEOL (Central and Eastern Europe Online Library).

The articles accepted for publication deal with a variety of issues related to social sciences and humanities.

This issue encompasses a wide range of topics, such as time series analysis of overnight stays during the pandemic, macro-economic adjustments in the Eurozone periphery and the EFTA states, stress-managing strategies in emergencies, clients' traits as predictors of psychological change during psychotherapy, foreign language anxiety among primary school students, macro-economic challenges of climate change, CEO responsibility in Serbian legal system, Anglo-American literature university courses during the pandemic, the rise and spread of pandemic-inspired terminology in English, and cyber fraud during the pandemic.

The information about the journal, instructions for authors and reviewers, editorial board members, and reviewers' names and affiliations are available at the journal website in Serbian and English.

The articles may be submitted via the journal website http://civitas. rs/index.php/prijava-rada or via email to redakcija@civitas.rs

Our sincere gratitude goes to all the authors for the high standard of the articles that follow.

Hoping that this issue will inspire further research, we invite all interested researchers to submit their articles for publication in CIVITAS.

Until next issue,

Prof. dr Vladimir Njegomir

Novi Sad, 11 July 2022

SADRŽAJ

Članci

Articles

Cvetko Andreeski[1]

VREMENSKA SERIJA NOĆENJA S UKLJUČENIM STRUKTURNIM PROMENAMA TOKOM PANDEMIJE KOVID-19: IZBOR OPTIMALNOG MODELA

Apstrakt: Turizam je izložen raznim rizicima kao što su prirodne katastrofe, sve vrste kriza, negativna propaganda, pandemije i sl. Svi ovi rizici utiču ne samo na razvoj turizma već i na vremenske serije koje su predmet analize. Za donošenje odluka o radu i daljem razvoju turističkog sektora, potrebno je izvršiti tačnu analizu postojećeg stanja, ali i predvideti buduće vrednosti serije. Zbog navedenih rizika, ovaj složeni problem zahteva dubinsku analizu, izbor odgovarajućeg modela i testiranje rezultata i predviđanja modela. U radu se analiziraju vremenske serije u oblasti turizma za period pre i tokom pandemije, analiziraju se strukturne promene, kao i mogući modeli koji se ubuduće mogu koristiti za modeliranje takvih serija.

Ključne reči: vremenske serije, strukturne promene, analiza, modeli, turizam

1. Uvod

Turizam je bio jedna od najteže pogođenih privrednih delatnosti tokom pandemije KOVID-19. Po proglašenju pandemije u Evropi u martu 2020. godine, ugostiteljski i smeštajni objekti su zatvoreni, što

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je onemogućilo redovno funkcionisanje ovog sektora. Prema podacima Svetske banke, 2019. godine, godinu dana pre izbijanja pandemije, izvozni efekat turizma u Srbiji iznosio 7,65 odsto BDP-a. U 2020. godini, međutim, ukupan broj noćenja iznosio je samo 24% od noćenja u 2019. godini, a prihodi su pali za više od 147 miliona dolara.

Značajne i dugotrajne strukturne promene u razvoju turizma tokom pandemije dovele su sektor na ivicu održivosti; štaviše, tokom pandemije istraživači nisu bili u mogućnosti da modeliraju analize vremenskih serija za razvoj turizma i predvide buduće vrednosti (O'Hare & Li, 2015; Asghar & Amena, 2012). Do danas je obavljeno mnogo istraživanja sa ciljem da se napravi validan model za identifikaciju i predviđanje budućih vremenskih serija podataka u oblasti razvoja turizma (Andreeski & Mechkaroska, 2020; Petrevska, 2017; Baldigara & Mamula, 2015), ali se čini da ovi modeli nisu ni od kakve koristi kada uzmemo u obzir ogromne strukturne promene kao što je pandemija KOVID-19. Pored linearnih modela za identifikaciju i predviđanje, koriste se složeniji nelinearni modeli, kao što su modeli zasnovani na veštačkim neuronskim mrežama, koji mogu da obuhvataju i promene nivoa i varijanse serije (Andreeski i Petrevska, 2021; Shi, 2019).). Kao što navode But i Pik (Boot & Pick, 2019), predviđanje može biti nešto tačnije ako se koristi uzorak nakon prekida, a ne puni uzorak. Međutim, ovaj rad će razmatrati samo kraće prekide, a ne trajne prekide. U nadi da će dobiti tačnije rezultate, neki istraživači su koristili tehnike dubokog učenja i analize velikih podataka. Ipak, svi ovi modeli se zasnivaju na pretpostavci da će buduće vrednosti biti zasnovane na trendovima i varijansama iz prošlosti, tj. da će budući trendovi odražavati one iz prošlosti (Kaushnik et al., 2019; Jian et al., 2021). Međutim, čak ni ovi modeli ne mogu dati validne rezultate ako nije dostupna dovoljno duga serija podataka od početka pandemije. Neke studije modeliranja i predviđanja vremenskih serija turizma tokom pandemije ispituju trenutnu situaciju i porede je sa prognoziranim vrednostima serije razvoja turizma pre pandemije, sa ciljem da se izračunaju gubici nastali usled pandemije u ovom sektoru (Andreeski & Petrevska , 2021; Šenkova et al., 2021). Nedavno su u nekim publikacijama objavljeni predloženi modeli za identifikaciju i predviđanje budućih vrednosti serije razvoja turizma (Provenzano & Volo, 2021; Šenkova et al., 2021).

Prošlo je skoro dve godine od izbijanja pandemije, što je dovoljno vremena da se pokuša modeliranje analize vremenske serije, kako bi se mogli predvideti budući podaci. Prema preporukama za modelovanje serije dovoljnih podataka, potrebno je da prođe najmanje četiri godine, pod uslovom da su dostupni mesečni podaci. U ovom radu je predložen jedan takav model, zasnovan na linearnom SARIMA modelu, tokom kojeg se vrši određena predobrada vremenske serije. Ovaj model je izabran jer je relativno jednostavan i pruža mogućnost da se njegove performanse uporede sa performansama sličnih modela koji se koriste u studijama o modeliranju vremenskih serija u oblasti turizma. Model je kreiran na osnovu podataka o noćenjima stranih turista u Republici Srbiji deset godina pre pandemije i godinu dana nakon nje.

2. Podaci i modeliranje

Na Slici 1 prikazan je broj noćenja stranih turista u Republici Srbiji 2010–2019, kao i statistički podaci za period januar–septembar 2021. Podaci prikazani na Slici 1 preuzeti su iz Republičkog zavoda za statistiku.
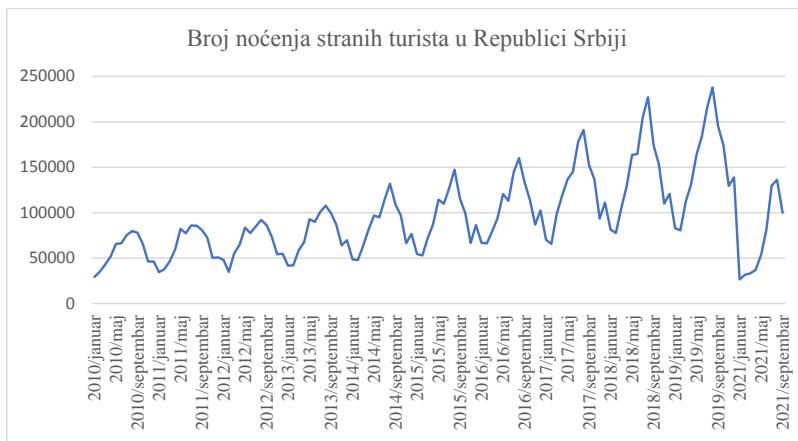
Slika 1. Broj noćenja stranih turista u Republici Srbiji

Na osnovu prikazanih podataka može se uočiti nekoliko karakteristika ove serije:

- Serija ima definisan trend u periodu od 2010. do 2019. godine, a zatim se vidi značajan pad u 2021. godini. Ipak, oblik serije je i dalje konstantan.

- Serija ima promenu varijanse, odnosno izraženu heteroskedastičnost.

- Sezonska karakteristika serije očigledna je u čitavom analiziranom periodu.

- Verovatna je strukturna promena u 2021. godini zbog promene trenda.

U seriji su namerno izostavljeni podaci za 2020. godinu, jer je ne treba uzimati kao referencu za broj dolazaka turista, pošto bi to onemogućilo modeliranje serije i predviđanje budućih podataka.

Za modeliranje serije korišćen je model SARIMA. U delu predobrade serije urađen je logaritam originalne serije, a nakon toga i diferencijacija serije kako bi se dobila stacionarna serija koja se može modelovati. Test jediničnog korena izvršen je za ovu modifikovanu seriju da bi se identifikovala stacionarnost. Tabela 1 prikazuje rezultat ovog testa.

Tabela 1. Test jediničnog korena modifikovane serije

Nulta hipoteza: NOĆENJA_STRANI_DLOG ima jedinični koren

Egzogeni: konstantni

Dužina kašnjenja: 10 (Automatski – bazirano na SIC-u, maksimalno kašnjenje = 12)

		T-statistika	Verovatnoća
Statistika proširenog Diki-Fulerovog testa		-19,04046	0.0000
Kritične vrednosti:	1% nivo	-3,491928	
	5% nivo	-2,888411	
	10% nivo	-2,581176	

*MacKinnon (1996) jednostrane p-vrednosti.

Tabela 1 pokazuje da je vrednost proširenog Diki-Fulerovog testa znatno niža od kritičnih vrednosti za stacionarni niz, a verovatnoća odbacivanja hipoteze da je serija stacionarna manja od 1%.

Pre nego što pređemo na modeliranje serije, potrebno je identifikovati strukturnu promenu koja će verovatno nastupiti 2021. godine. U tu svrhu napravljen je test loma korena jedinice u nizu. Rezultati ispitivanja su dati u Tabeli 2.

Tabela 2. Test loma korena jedinice modifikovane serije

Nulta hipoteza: NOĆENJA_STRANI_DLOG ima jedinični koren

Specifikacija trenda: samo presretanje

Specifikacija prekida: samo presretanje

Tip preloma: inovativni izuzetak

Datum prekida: 2019M12

Izbor pauze: minimalizovana Diki-Fuler t-statistika

Dužina kašnjenja: 10 (automatski – na osnovu Švarcovog kriterijuma info
maksimalno kašnjenje = 12)

Dickey-Fuller t-statistics
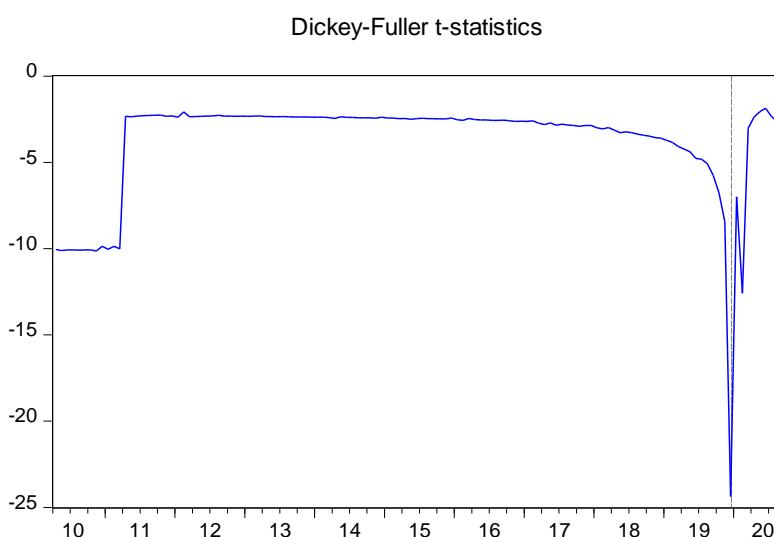
Slika 3. Grafički prikaz strukturnih promena prema Diki-Fulerovoj t-statistici

19

Iz rezultata datih u Tabeli 2, može se zaključiti da postoji strukturna promena serije na kraju 2019. godine, odnosno detektovana je strukturna promena serije nakon 2019. godine.

Nakon stacioniranja serije i testiranja postojanja strukturnih promena, modeliranje se može nastaviti. Za određivanje nezavisnih varijabli serije napravljena je korelacija serije. Vrednosti korelograma su date u Tabeli 3.

Tabela 3. Korelogram modifikovane serije

Sample: 2010M01 2020M09
Included observations: 128

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.100	0.100	1.3171	0.251
		2	0.191	0.183	6.1325	0.047
		3	-0.003	-0.039	6.1336	0.105
		4	-0.160	-0.200	9.5639	0.048
		5	-0.229	-0.209	16.671	0.005
		6	-0.585	-0.553	63.330	0.000
		7	-0.180	-0.165	67.799	0.000
		8	-0.127	0.027	70.022	0.000
		9	-0.066	-0.103	70.630	0.000
		10	0.070	-0.168	71.316	0.000
		11	0.137	-0.201	74.001	0.000
		12	0.603	0.365	126.16	0.000
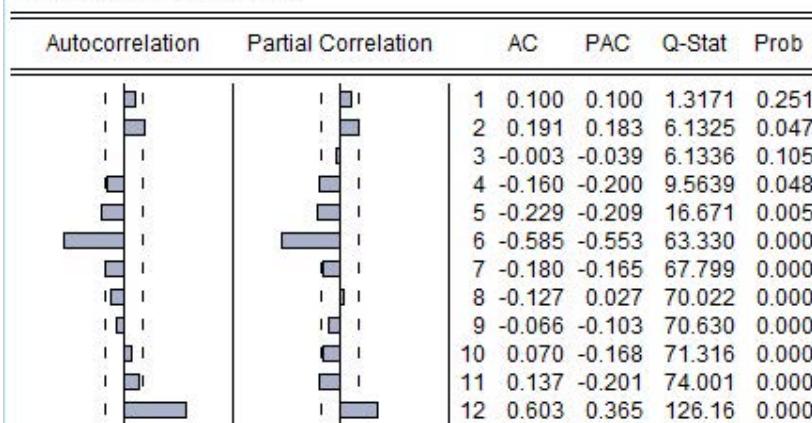
Korelogram pokazuje da šesto i dvanaesto kašnjenje imaju najveće vrednosti, koje ukazuju na sezonsku komponentu serije. Neophodno je testirati serijsku korelaciju u seriji, ali to je malo verovatno jer prvo kašnjenje ima malu vrednost.

Za seriju je napravljeno nekoliko različitih konkurentskih modela, a u radu su prikazani samo oni koji daju najbolje rezultate. Prvi model ima samo jednu nezavisnu varijablu, a to je dvanaesto kašnjenje u seriji. Rezultati su prikazani u Tabeli 4.

Tabela 4. Model serije turističkih noćenja u Republici Srbiji

Zavisna varijabla: NOĆENJA_STRANI_DLOG

Metod: ARMA maksimalna verovatnoća (OPG – BHHH)

Datum: 7. 11. 2021. Vreme: 09.21

Uzorak: 2010M02 2020M09

Broj obuhvaćenih opservacija: 128

Konvergencija je postignuta nakon 11 iteracija

Kovarijansa koeficijenta izračunata korišćenjem spoljašnjeg proizvoda gradijenata

Varijabla	Koeficijent	St.greška	T-statistika	Verovatnoća
AR (12)	0,877828	0,072841	12,05135	0,0000
SIGMASQ	0,023934	0,001189	20,12629	0,0000
R-kvadrat	0,642378	Srednja zavisna var.		0,009632

Rezultati pokazuju da je nezavisna varijabla validna, tj. da ima visoku vrednost t-statistike i malu verovatnoću da će ovaj parametar biti uklonjen iz modela. Stepen varijanse originalne serije iznosi oko 64%, a vrednost Durbin-Vatson statistike blizu je 2, što ukazuje da ne postoji značajna serijska korelacija reziduala.

Da bi se model poboljšao, napravljena je lažna varijabla koja ima za cilj da modelira strukturnu promenu. Ova promenljiva ima vrednost 1 za mesece 2021. godine, a za podatke prethodnih godina ima vrednost 0. Rezultati modelovanja ovog modela prikazani su u Tabeli 5.

Iz rezultata datih u Tabeli 5 može se zaključiti:

• Lažna varijabla je relevantna za model, a verovatnoća izbacivanja ovog parametra iz modela manja je od 1%.

• Ovaj model pokriva većinu varijanse modela.

• Informacioni kriterijum ima nižu apsolutnu vrednost u odnosu na prethodni model.

Vrednost Durbin-Vatson statistike ima vrednost bližu 2 u poređenju sa prethodnim modelom. Za model je napravljena korelacija reziduala

koja pokazuje da su svi reziduali unutar intervala poverenja ± 2se. U nastavku je data prognoza budućih vrednosti vremenske serije, sa prognozom budućih vrednosti na osnovu izabranog modela.

Tabela 5. Model serije turističkih noćenja u Republici Srbiji sa dodatnom lažnom varijablom

Zavisna varijabla: NOĆENJA_STRANI_DLOG

Metod: ARMA maksimalna verovatnoća (OPG – BHHH)

Datum: 7. 11. 2021.   Vreme: 09.21

Uzorak: 2010M02 2020M09

Broj obuhvaćenih opservacija: 128

Konvergencija je postignuta nakon 7 iteracija

Kovarijansa koeficijenta izračunata korišćenjem spoljašnjeg proizvoda gradijenata

Varijabla	Koeficijent	St. greška	T-statistika	Verovatnoća
DUMMY	-0,083368	0,026179	-3,184512	0,0018
AR(12)	0,882392	0,071973	12,26012	0,0000
SIGMASQ	0,023367	0,001553	15,04329	0,0000
R-kvadrat	0,650839	Srednja zavisna var.		0,009632
Prilagođeni R-kvadrat	0,645253	Stand. devijacija zavisne var.		0,259714
Stand. greška regresije	0,154687	Akaike info kriterijum		-0,730304
Ukupni kvadrat rezid.	2,991016	Schwarz kriterijum		-0,663460
Log verovatnoće	49,73946	Hannan-Quinn kriterijum		-0,703145
Durbin-Watson stat.	2,264859			

3. Predviđanje serije

Da bi se izvršilo predviđanje, serija je produžena za 12 meseci i izvršeno je vraćanje na predviđene vrednosti kako bi odgovarale vrednostima originalne serije. Za potrebe istraživanja, napravljena je *in-sample* prognoza vrednosti iz uzorka (*in-sample*), a uzete su poznate vrednosti iz 2021. godine, kao što je prikazano na Slici 4.
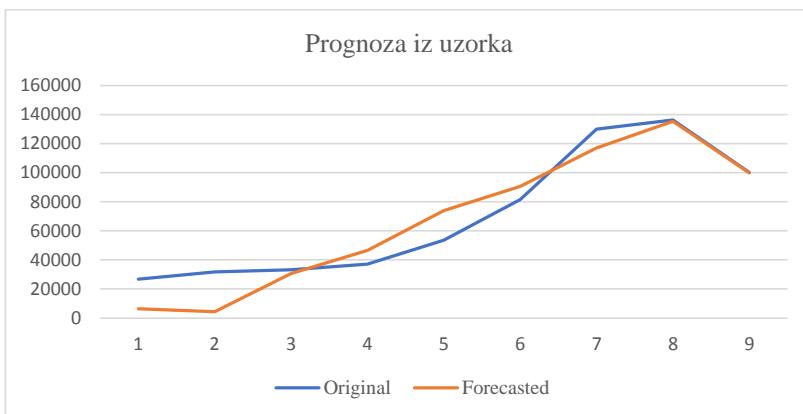
Slika 4. Prognoza iz uzorka vrednosti za 1. 9. 2021.

Na kraju, napravljena je prognoza vrednosti očekivanog broja stranih turista za 2022. godinu, opet za prvih devet meseci. Ovi rezultati su prikazani na Slici 5. Isti grafikon prikazuje seriju vrednosti za 2021. godinu, radi poređenja dve serije.
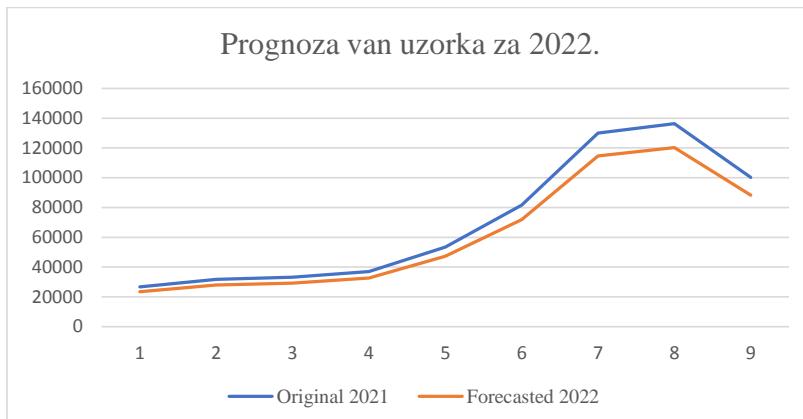
Slika 5. Prognoza van uzorka vrednosti za 1. 9. 2021.

Lažna varijabla nije korišćena za izračunavanje vrednosti u 2022. godini, jer nije verovatno da će doći do još neke strukturne promene u

ovoj godini. U suprotnom, nikakve prognoze se ne bi mogle napraviti. Kao što pokazuje grafikon, za 2022. godinu predviđa se manji broj turista u odnosu na 2021. godinu, što je malo verovatno. Međutim, model vrši proračun na osnovu celokupne istorije za analiziranu seriju i vrednost parametra ar (12) manja je od 1, što znači da buduće vrednosti treba da imaju niže vrednosti od prethodnih. Procenjuje se da je pad noćenja oko 8%.

4. Zaključna razmatranja

U analizi se koristi vremenska serija podataka o noćenjima stranih turista u Republici Srbiji. Ovo je relevantan model vremenske serije, koji se može koristiti za praćenje pandemije KOVID-19 na razvoj turizma u bilo kojoj zemlji. Serija ima strukturnu promenu koja čini njeno modeliranje složenijim. Pravilnom prethodnom obradom serije i dodavanjem lažne promenljive u modeliranje, kreiran je validan model. Konačno, prognoza budućih vrednosti serije pokazuje niže vrednosti za narednu godinu (2022) u odnosu na prethodnu (2021), što će se verovatno i dogoditi. Međutim, značaj ovog modela je u tome što je pokazao da je moguće napraviti validan model čak i za serije koje predstavljaju izazov za modeliranje. Kada bude dovoljno podataka iz serije nakon strukturne promene, biće moguće napraviti pouzdaniji model zasnovan na podacima nakon pandemije. Očekuje se da će ovaj model pružiti preciznije predviđanje budućih vrednosti.

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TOURISM TIME SERIES ANALYSIS CONTAINING STRUCTURAL CHANGES DUE TO THE COVID-19 PANDEMIC: SELECTING THE OPTIMAL MODEL

Abstract: Tourism is exposed to various risks such as natural disasters, different types of crises, negative propaganda, pandemics, and the like. All these risks affect not only the development of tourism, but also time series models that are subject to analysis. In order to be able to make informed decisions that influence the functioning and further development of the tourism sector, it is necessary to make an accurate analysis of the current situation and to be able to predict the future values of the time series model. Due to the risks stated above, this complex problem requires an in-depth analysis, a selection of an appropriate model and testing the model's results and predictions. The paper examines time series analyses in the field of tourism and structural changes before and during the pandemic, as well as possible models that can be used to model such series in the future.

Keywords: time series, structural changes, analysis, models, tourism

1. Introduction

Tourism has been one of the most affected economic activities during the COVID-19 pandemic. With the outbreak of the pandemic in Europe in March 2020, the catering and accommodation facilities were

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closed, preventing the regular functioning in this sector. According to the World Bank[2], in 2019, the year before the pandemic outbreak, the export effect of tourism in Serbia amounted to 7.65% of GDP. In 2020, however, the total number of overnight stays was only 24% of the overnight stays in 2019, and the revenues dropped by more than 147 million dollars.

Significant and long-lasting structural changes in tourism development during the pandemic has pushed the sector to the brink of sustainability; furthermore, this prevented researchers from modelling time series analyses for tourism development and predicting future values (O'Hare & Li, 2015; Asghar & Amena, 2012). There have been many studies aimed at developing a valid model for identifying and predicting future time series data in the field of tourism development (Andreeski & Mechkaroska, 2020; Petrevska, 2017; Baldigara & Mamula, 2015), but these models seem useless in the face of a momentous structural change such as the COVID-19 pandemic. Besides linear models for identification and prediction, more complex non-linear models are used, such as the models based on artificial neural networks, which can include the changes in the level and variance of the series (Andreeski & Petrevska, 2021; Shi, 2019). According to Boot & Pick (2019), forecasting can be slightly improved if a post-break sample rather than the full sample is used. However, this paper will consider only small breaks, not lasting ones. Hoping to get more accurate results, some researchers have used the deep-learning and big-data analysis techniques; still, all these models are structured on the assumption that future values will be based on historical trends and variance, i.e., that future trends will reflect historical ones (Kaushnik et al., 2019; Jian et al., 2021). However, even these models cannot provide valid results if a long enough data series from the beginning of the pandemic is unavailable. Some studies of modelling and predicting tourism time series during the pandemic examine the current situation and offer comparison with predicted values based on the pre-pandemic tourism development series, with the aim to calculate the losses incurred by the pandemic in this sector (Andreeski & Petrevska, 2021; Šenkova et al., 2021). Recently, some publications have proposed models for identifying and predicting the future values of tourism development series (Provenzano & Volo, 2021; Šenkova et al., 2021).

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[2] *https://data.worldbank.org/indicator/ST.INT.TRNX.CD?locations=RS*

Nearly two years since the outbreak of the pandemic, enough time has passed for a time series analysis modelling to be attempted, so that future data may be predicted. According to the recommendations for modelling a series of sufficient data, the time required is at least four years, provided monthly data is available. In this paper one such model is proposed, based on the linear SARIMA model, during which some pre-processing of the time series is done. The model was chosen because of its relative simplicity and ability to compare this model's performance with that of similar models used in studies on modelling time series in the field of tourism.

The model was created using the data on overnight stays of foreign tourists in the Republic of Serbia ten years before the pandemic and one year after the pandemic.

2. Data and Modelling

Fig. 1 shows the number of overnight stays of foreign tourists in the Republic of Serbia 2010-2019, as well as the numbers for January - September 2021. Data presented in Fig. 1 are taken from the Statistical Office of the Republic of Serbia[3].
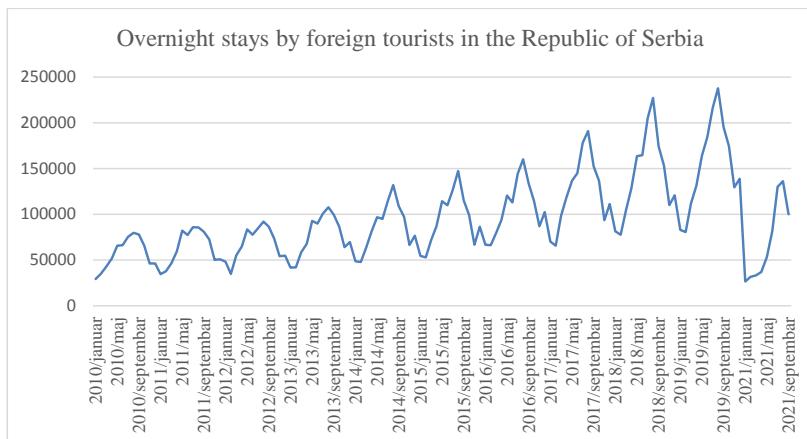
Fig 1. Number of overnight stays by foreign tourists in the Republic of Serbia

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[3] *https://data.stat.gov.rs/Home/Result/220203?languageCode=en-US*

From the displayed data, several characteristics of the series are evident:

- The series has a defined trend in the 2010-2019 period, then shows a significant decline in 2021, but the shape of the series remains constant.
- The series has a change in variance, i.e., a pronounced heteroskedasticity.
- The seasonal characteristic of the series is obvious in the entire analysed period.
- Probable structural change in 2021, due to the trend change.

The series deliberately omits the 2020 data, because that year should not be taken as a reference for the number of tourist arrivals, as it would make modelling the series and predicting the future data impossible.

The SARIMA model was used for modelling the series. In the pre-processing part of the series, a logarithm of the original series was made, and after that a differentiation of the series in order to get a stationary series that can be modelled. A unit root test was performed for this modified series in order to identify stationarity. Table 1 shows the result of this test.

Table 1. Unit root test of the modified series

Null Hypothesis: NOCENJA_STRANI_DLOG has a unit root

Exogenous: Constant

Lag Length: 10 (Automatic - based on SIC, max. lag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-19.04046	0.0000
Test critical values:	1% level	-3.491928	
	5% level	-2.888411	
	10% level	-2.581176	

*MacKinnon (1996) one-sided p-values.

Table 1 shows that the value of the Augmented Dickey Fuller test is significantly lower than the critical values for the stationary series and the probability of rejecting the hypothesis that the series is stationary is less than 1%.

Before moving on to modelling the series, it is necessary to identify the structural change that is likely to occur in 2021. For that purpose, a unit root break test of the series was made. The test results are given in Table 2.

Table 2. Unit root break test of the modified series

Null Hypothesis: NOCENJA_STRANI_DLOG has a unit root

Trend Specification: Intercept only

Break Specification: Intercept only

Break Type: Innovation outlier

Break Date: 2019M12

Break Selection: Minimize Dickey-Fuller t-statistic

Lag Length: 10 (Automatic - based on Schwarz information criterion, Max. lag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-24.36267	< 0.01
Test critical values:	1% level	-4.949133	
	5% level	-4.443649	
	10% level	-4.193627	

From the results given in Table 2, it can be concluded that there is a structural change of the series at the end of 2019, i.e., the structural change of the series after 2019 is detected.

Fig. 3. Graphical representation of structural change according to Dickey Fuller t-statistics

Dickey-Fuller t-statistics
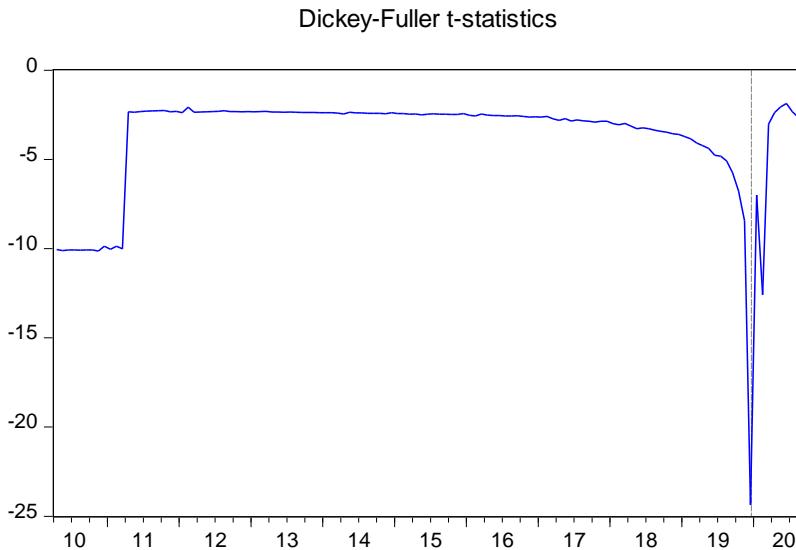
After stationing the series and testing the existence of structural changes, modelling can be resumed. To determine the independent variables of the series, a correlation of the series was made. The values of the correlogram are given in Table 3.

Table 3. Correlogram of the modified series

Sample: 2010M01 2020M09
Included observations: 128

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	0.100	0.100	1.3171	0.251
		2	0.191	0.183	6.1325	0.047
		3	-0.003	-0.039	6.1336	0.105
		4	-0.160	-0.200	9.5639	0.048
		5	-0.229	-0.209	16.671	0.005
		6	-0.585	-0.553	63.330	0.000
		7	-0.180	-0.165	67.799	0.000
		8	-0.127	0.027	70.022	0.000
		9	-0.066	-0.103	70.630	0.000
		10	0.070	-0.168	71.316	0.000
		11	0.137	-0.201	74.001	0.000
		12	0.603	0.365	126.16	0.000

The correlogram shows that the sixth and 12th delays have the highest values, which indicate the seasonal component of the series. It is necessary to test the serial correlation in the series, but this is unlikely because the first delay has a small value.

Several different competing models have been made for the series, and only the ones that give the best results are shown in the paper. The first model has only one independent variable, the 12th delay in the series. The results are shown in Table 4.

Table 4. Model of the series for tourism overnight stays in the Republic of Serbia

Dependent Variable: NOCENJA_STRANI_DLOG

Method: ARMA Maximum Likelihood (OPG - BHHH)

Date: 11/07/21   Time: 09:21

Sample: 2010M02 2020M09

Included observations: 128

Convergence achieved after 11 iterations

Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR (12)	0.877828	0.072841	12.05135	0.0000
SIGMASQ	0.023934	0.001189	20.12629	0.0000
R-squared	0.642378	Mean dependent var		0.009632
Adjusted R-squared	0.639539	S.D. dependent var		0.259714
S.E. of regression	0.155928	Akaike info criterion		-0.725325
Sum squared resid.	3.063501	Schwarz criterion		-0.680762
Log likelihood	48.42082	Hannan-Quinn criter.		-0.707219
Durbin-Watson stat	2.283420			

The results show that the independent variable is valid, i.e., it has a high value of t-statistics and a low probability that this parameter will be removed from the model. The degree of variance of the original series is about 64%, and the value of the Durbin-Watson statistic is close to 2, indicating that there is no significant serial correlation of the residuals.

In order to improve the model, a dummy variable is made that aims to model the structural change. This variable has a value of 1 for the 2021 months, and for data in previous years it has a value of 0. The modelling results of this model are shown in Table 5.

From the results given in Table 5 the following can be concluded:

- The Dummy variable is relevant to the model and the probability of ejecting this parameter from the model is less than 1%.
- This model covers most of the model variance.
- The information criterion has a lower absolute value compared to the previous model.

The value of Durbin-Watson statistics has a value closer to 2 compared to the previous model. A correlation of residuals was made for the model which shows that all residuals are within the confidence interval ± 2se. The forecast of the future values of the time series is given below, with a forecast of the future values based on the selected model.

Table 5. Model of the series for tourism overnight stays in the Republic of Serbia with added dummy variable

Dependent Variable: NOCENJA_STRANI_DLOG

Method: ARMA Maximum Likelihood (OPG - BHHH)

Date: 11/07/21   Time: 09:26

Sample: 2010M02 2020M09

Included observations: 128

Convergence achieved after 7 iterations

Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUMMY	-0.083368	0.026179	-3.184512	0.0018
AR(12)	0.882392	0.071973	12.26012	0.0000
SIGMASQ	0.023367	0.001553	15.04329	0.0000
R-squared	0.650839	Mean dependent var		0.009632
Adjusted R-squared	0.645253	S.D. dependent var		0.259714
S.E. of regression	0.154687	Akaike info criterion		-0.730304
Sum squared resid	2.991016	Schwarz criterion		-0.663460
Log likelihood	49.73946	Hannan-Quinn criter.		-0.703145
Durbin-Watson stat	2.264859			

3. Forecasting of the Series

To predict the series, an extension of the series was made for 12 months and the return of the predicted values to correspond to the values of the original series. For research purposes, an in-sample forecast of the values has been made, for the known values from 2021, as shown in Fig. 4.
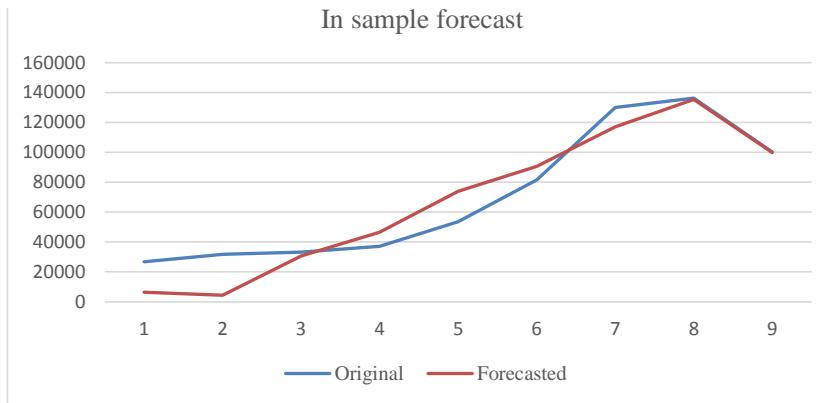
In sample forecast

Fig 4. In sample forecast of the values for 01/09/2021

Finally, the values for the expected number of foreign tourists for 2022 are forecasted, again for the first nine months. These results are shown in Fig 5. The same graph shows the series of values for 2021, to compare the two series.
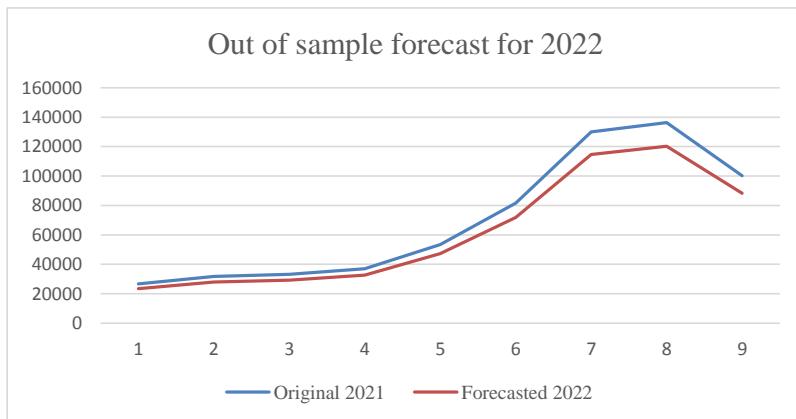
Fig 5. Out of sample forecast of the values for 01/09/2022

The dummy variable was not used to calculate the values in 2022, because another structural change for this year is not likely to occur. Otherwise, no prediction could have been made at at all. As the graph shows, a smaller number of tourists is forecasted for 2022 compared to 2021, which is highly unlikely. However, the model does the calculation based on the entire history for the analysed series and the value of the ar (12) parameter is less than 1, which means that future values should have lower values than the previous ones. The estimated decline in overnight stays is around 8%.

4. **Conclusions**

The analysis uses a time series of data on overnight stays by foreign tourists in the Republic of Serbia. This is a relevant time series model, which can be used to monitor the COVID-19 pandemic on tourism development in any country. The series has a structural change that makes modelling the series more complex. By properly pre-processing the series and adding a dummy variable to the modelling, a valid model has been created. Finally, the forecast of the future values of the series shows lower values for the next year (2022) compared to those of the previous

year (2021), which is likely to occur. However, the importance of this model is that it has shown that it is possible to make a valid model even for series which are a challenge for modelling. When there are enough data from the series after the structural change, it will be possible to create a more reliable model based on the post-pandemic data. This model is expected to provide more accurate predictions of future values.

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MAKROEKONOMSKO PRILAGOĐAVANJE POD UTICAJEM EKSTERNIH ŠOKOVA: SLUČAJ PERIFERIJE EVROZONE I ČLANICA EFTA[4]

Apstrakt: U okolnostima globalnih ekonomskih kriza i pratećih eksternih šokova, makromehanizmi prilagođavanja između zemalja razlikuju se u odnosu na prihvaćeni okvir monetarne politike. Ovo istraživanje ima za cilj da ukaže na razliku između članica evrozone (EZ) koje žrtvuju monetarni suverenitet i članica EFTA (Evropsko udruženje slobodne trgovine) koje odbacuju produbljivanje nivoa ekonomske integrisanosti, i shodno tome, žrtvovanje monetarne suverenosti. Period istraživanja je 2001K1–2021K1 uz obuhvat dva najsnažnija, skorašnja eksterna šoka – veliku recesiju iz 2008. godine i pandemijsku krizu iz 2020. godine. Empirijski nalazi su bazirani na oceni panel VAR modela za zemlje članice EFTA i periferne članice EZ. Rezultati ocene modela otkrivaju uticaj dva tipa eksternih šokova, šok tekućeg računa (trgovinski šok) i kapitalnog računa (finansijski šok), na varijacije bruto domaćeg proizvoda i nominalnog deviznog kursa. Nalazi potvrđuju da monetarna autonomija predstavlja štit pod naletom eksternih trgovin-

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skih i finansijskih šokova, dok ranjive članice monetarne unije pate od značajnih i prolongiranih kontrakcija autputa.

Ključne reči: globalna kriza, eksterni šokovi, mehanizmi prilagođavanja, evrozona (EZ), Evropsko udruženje slobodne trgovine (EFTA).

JEL: E52, E58, F33, F45.

Uvod

Ekonomska integracija evropskih ekonomija započela je nakon Drugog svetskog rata potpisivanjem Pariskog ugovora 1950. godine i Rimskog ugovora 1957. godine. Tokom narednih decenija, Evropska zajednica se razvijala od zone slobodne trgovine, preko carinske unije (1968. godine), zajedničkog tržišta (1987. godine), sve do najvišeg nivoa ekonomske integracije, tj. monetarne unije zaključivanjem Ugovora iz Mastrihta (1993. godine). Međutim, kao protivteža ovim tendencijama, neke evropske zemlje nisu bile voljne da produbu nivo ekonomske integracije sa drugim evropskim ekonomijama više od zone slobodne trgovine. Ove zemlje su Stokholmskim sporazumom (1960. godine) formirale Evropsku zonu slobodne trgovine (EFTA). Međutim, broj članica EFTA počeo je da opada kako su se zemlje članice pridruživale Evropskoj zajednici, kasnije Evropskoj uniji (EU), pošto su neke promenile stav prema daljoj ekonomskoj integraciji. Trenutno se EFTA sastoji od četiri evropske ekonomije: Švajcarske, Norveške, Islanda i Lihtenštajna. EU, ranije Evropska zajednica, sastoji se od 27 država članica, od kojih su 19 država članice Evropske monetarne unije (EMU) ili takozvane evrozone (EZ).

Cilj ovog istraživanja je da ispita sličnosti i razlike između dve grupe evropskih ekonomija: onih koje su zadržale svoj monetarni suverenitet (članice EFTA) i onih koje su ga odrekle (članice EZ), u odnosu na njihovu osetljivost na spoljne šokove u krizi. Glavnu razliku između ove dve grupe predstavlja činjenica da monetarna autonomija funkcioniše pod pretpostavkom da se svi monetarni instrumenti mogu koristiti kontraciklično da bi se izdržali spoljni šokovi. Članice EFTA bi, dakle, mogle da iskoriste svoju suverenu monetarnu politiku, uključujući poli-

tiku deviznog kursa, da stabilizuju svoje ekonomije pod uticajem svake krize. Međutim, članice EZ nisu u mogućnosti da to učine budući da su odustale od monetarne autonomije koja predstavlja važan intrument ili štit protiv eksternih šokova.

Ovo istraživanje se bavi privredama Švajcarske, Norveške i Islanda, kao predstavnica zemalja EFTA, i privredama najugroženijih članica EZ, tzv. periferije EZ (Grčka, Portugal, Španija, Island). Uzeli smo u obzir periferiju EZ, umesto cele EZ, jer ova grupa zemalja (poznata pod akronimom PIIGS) predstavlja članice EZ koje su najviše stradale od gubitka svog monetarnog suvereniteta. Cilj ovog istraživanja je da ukaže na razliku između mehanizama prilagođavanja dve grupe evropskih zemalja, pod uticajem spoljnotrgovinskih i finansijskih šokova kao pratećih efekata svetske ekonomske krize u periodu 2001K1–2021K1. Pošto su VAR modeli najpogodniji za ispitivanje prenosa šoka, autori su primenili panel VAR model kako bi napravili razliku između EFTA i periferije EZ i registrovali razliku u prenosu šoka na njihove ekonomske aktivnosti i valute. Eksterni šokovi podrazumevaju udar na tekuće prihode (trgovinu) i udar na kapital (finansije). Uticaj eksternog šoka na varijacije bruto domaćeg proizvoda (BDP), kao i nominalnog efektivnog kursa (NEER), praćen je preko funkcija impulsnog odziva procenjenih panel VAR modela.

Sve u svemu, cilj ovog istraživanja je da ukaže na gubitke koje su pretrpele članice EZ, posebno najugroženije članice (periferija EZ), za razliku od evropskih zemalja koje su odlučile da ne produbljuju svoju ekonomsku integraciju (članice EFTA). Monetarni suverenitet članica EFTA funkcioniše pod pretpostavkom da njihove valute fluktuiraju kontraciklično da bi izdržale uticaj eksternih šokova. Sasvim suprotna situacija važi za periferiju EZ, pošto one više nemaju svoje nacionalne valute. Struktura rada je sledeća: posle uvodnog odeljka, prvi deo rada se bavi pregledom evropskih monetarnih i deviznih aranžmana, a zatim sledi deskriptivna analiza mehanizama prilagođavanja periferije EZ prema članicama EFTA (odeljak 2). Odeljak 3 sadrži metodološki okvir: model, najvažnije nalaze i diskusiju. Na kraju, odeljak 4 sadrži zaključne napomene ovog istraživanja.

1. Monetarni i kursni režimi u Evropi

Iz evropske perspektive, čini se da je teorija iz dva ugla validna, imajući u vidu dominaciju rigidnih režima deviznog kursa (Aizenman, Chinn & Hiro, 2013). Drugim rečima, devetnaest država članica EU nalazi se u monetarnoj uniji, dve države su primenile režim valutnog odbora, a samo jedna je sprovela evroizaciju. S druge strane, fleksibilni režim se primenjuje u deset zemalja. Najmanje su zastupljeni srednji režimi, koje sprovode samo tri evropske ekonomije (Međunarodni monetarni fond, 2020). Međutim, treba imati u vidu da će šest od deset zemalja sa fleksibilnim režimom i dve od tri zemlje sa *soft peg* režimima (između fiksnog i fleksibilnog) postati članice EZ u bliskoj budućnosti. Dakle, izgledno je da će se teorija dva ugla u Evropi i dalje primenjivati, uz dominaciju rigidnih režima i slobodno kretanje kapitala (Bakker, 2018).

Svi oblici rigidnih kursnih režima podrazumevaju i žrtvovanje monetarnog suvereniteta. Rigidni režimi deviznog kursa koji se porede u smislu rastuće fleksibilnosti jesu zvanična dolarizacija ili evroizacija, monetarna unija i valutni odbor. Za razliku od zvanične dolarizacije ili evroizacije ili valutnog odbora, koji su pretežno iznuđena rešenja (visoka inflacija ili hiperinflacija, hronična makronestabilnost ili politička nestabilnost), monetarna unija je pažljivo osmišljeno rešenje koje podrazumeva procenu koristi i troškova pristupanja valutnoj zoni. Zemlje učesnice prihvataju zajedničku valutu, odričući se svojih nacionalnih valuta, monetarne politike i politike deviznog kursa (Dabrovski, 2019). Te ekonomije nisu ekonomski nestabilne ili pod rizikom, stoga je uticaj odricanja od monetarnog suvereniteta defakto ogroman. Čvršća komercijalna i finansijska integracija između zemalja i veća mobilnost faktora proizvodnje mogu da učine da šteta od gubitka monetarnog suvereniteta bude što manja, a prednosti pridruživanja valutnoj uniji veće (Beker Pucar & Glavaški, 2020). Ako su zemlje članice monetarne unije usko povezane, a ključni makroindikatori se podudaraju (stopa inflacije, indikatori javnih finansija, kamatna stopa, kurs), onda je opravdano da imaju istu valutu. Većini članica takve unije će odgovarati jedinstvena centralna banka i monetarna politika, jer što su privrede sličnije i povezane, to će biti manje pojava asimetričnih šokova.

Najpoznatija monetarna unija je EZ, koja predstavlja završnu fazu ekonomske integracije evropskih ekonomija koja se neprekidno produbljivala od kraja Drugog svetskog rata. EZ trenutno čini 19 zemalja: Nemačka, Francuska, Italija, Belgija, Holandija, Luksemburg, Irska, Portugalija, Španija, Grčka, Austrija, Finska, Slovenija, Kipar, Malta, Slovačka, Estonija, Litvanija i Letonija. Međutim, EZ nije područje optimalne valute (OCA), pošto plate nisu dovoljno fleksibilne, mobilnost radne snage nije dovoljna, a zajednički rad na ispunjenju političkih kriterijuma u pogledu fiskalnih transfera, homogenih preferencija i solidarnosti do sada nije dao zadovoljavajuće rezultatate (Rose, 2008; Furutter, 2012; Baldvin & Giavazzi, 2016). U isto vreme, članice EZ su heterogene, uprkos tome što su prolazile kroz proces konvergencije pre pristupanja EZ. Sa takvim heterogenim članstvom, Evropska centralna banka (ECB) vodi anticikličnu politiku za jednu grupu članica (uglavnom centralne države) i procikličnu politiku za drugu grupu članica (uglavnom periferiju) (Bonatti & Fracasso, 2017; De Grauve, 2018 Franks et al., 2018).

Članice EFTA, tj. Švajcarska, Norveška i Island, zadržale su svoj monetarni suverenitet. Ono što je zajedničko ovim članicama EFTA jeste to što održavaju delikatan i dinamičan balans između integracije (sa članicama EU) i očuvanja sopstvene autonomije (Damen, 2020). Ove ekonomije primenjuju fleksibilni režim deviznog kursa sa monetarnim okvirom koji cilja na inflaciju (MMF, 2020). Izuzetak je Lihtenštajn, mikrodržava koja koristi švajcarski franak kao zakonsko sredstvo plaćanja. Ovo je, zajedno sa nedostatkom visokofrekventnih podataka za ovu mikrodržavu, razlog za isključenje Lihtenštajna iz empirijske analize.

2. Deskriptivna analiza: Zemlje periferije EZ nasuprot zemljama EFTA

Donedavno, najvažniji spoljni udar na ekonomiju bila je velika recesija iz 2008. godine. U poslednje vreme, kriza izazvana pandemijom koronavirusa prouzrokovala je jedan od najgorih ekonomskih šokova čije se posledice prenose na celokupnu globalnu ekonomiju. Negativni spoljni šokovi, kao što su velika recesija i pandemija iz 2020. godine, proizvode visoku nestabilnost i mogu dovesti do trajnijih perioda slabijeg ekonomskog rasta, veće nezaposlenosti, pada realnih prihoda i rasta

siromaštva (Rodriguez Canfranc, 2020; Greenvood & Burton, 2020; Be-ljić & Glavaški, 2021). Međutim, kontrakcije u realnoj ekonomiji i njeno trajanje usko su povezani sa monetarnim okvirom – bilo da su zemlje monetarno suverene ili zavisne od nadnacionalne monetarne vlasti (kao u monetarnoj uniji). Pod uticajem eksternih šokova, žrtve koje su podnele članice monetarne unije dolaze do izražaja (Edvards, 2006). Njihov oporavak, usled kriznih okolnosti, otežan je i produžen u nedostatku instrumenata suverene monetarne politike. U ovom istraživanju vrši se poređenje između najugroženijeg dela EZ – perifernih država EZ (Grč-ka, Portugal, Španija, Italija, Irska) i evropskih zemalja koje nisu članice EU i koje su zadržale monetarni suverenitet – država EFTA (Švajcar-ska, Norveška, Island). Ovo empirijsko istraživanje obuhvata period od 2001K1–2021K1, od kada je Grčka pristupila EZ 2001. godine, dok su poslednji dostupni kvartalni podaci 2021K1.

Jedna od najvažnijih razlika između periferije EZ i članica EFTA jesu mehanizmi prilagođavanja pod uticajem globalne krize. Globalna kriza proizvodi efekat prelivanja na nacionalne ekonomije kroz eksterne šokove i iznenadne preokrete u platnom bilansu (spoljna neravnoteža). Spoljnotrgovinski šok se ogleda u deficitu tekućeg računa, a eksterno finansijski šok u deficitu kapitalnog računa. Obe vrste šokova, osim spoljašnje neravnoteže, prelivaju se u kontrakcije autputa (unutrašnja neravnoteža). Međutim, postavlja se pitanje koliko su ozbiljne posledice kontrakcije autputa (da li su blage ili teške, odnosno da li su privremene ili trajne). Na slici 1 prikazan je BDP kao mera ekonomske aktivnosti za članice EFTA u periodu 2001–2021. Norveška, Švajcarska i Island, upr-kos padu BDP-a tokom velike recesije i pandemijske krize 2020. godine, generalno prate trend rasta svojih ekonomskih aktivnosti (EFTA, 2021).

Slika 1: BDP (nominalni, u USD) EFTA zemalja od 2001. do 2021. godine
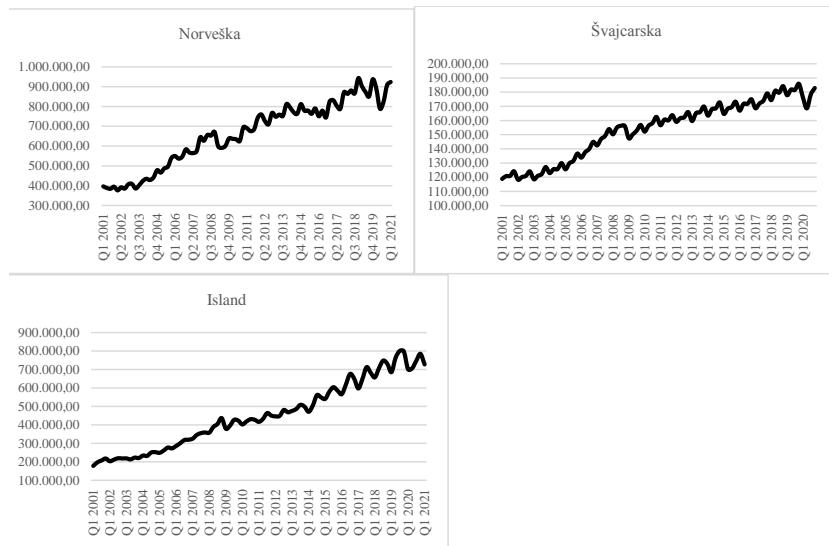
Izvor: Autori prema kvartalnim podacima MMF-a.

U poređenju sa zemljama EFTA, u kojima je zabeležen privremeni pad proizvodnje, u perifernim zemljama EZ zabeležen je trajni pad ove varijable (Slika 2). Ovaj zaključak se u najvećoj meri pripisuje uticaju velike recesije, jer efekti pandemijske krize 2020. tek treba da se sumiraju. U Portugalu i Španiji zabeleženi su produžena stagnacija i veoma spor ekonomski oporavak koji se završio još jednim naglim padom BDP-a usled pandemije. U uzorku perifernih zemalja EZ, u Grčkoj je ekonomsko stanje najteže, jer se privreda ove zemlje nikada nije oporavila još od velike recesije i dužničke krize koja je usledila (Stanišić, 2012; Bartlett i Prica, 2016; Ehmer, 2017; Onaran, 2018).

Slika 2: BDP periferije EZ u periodu od 2001. do 2021.
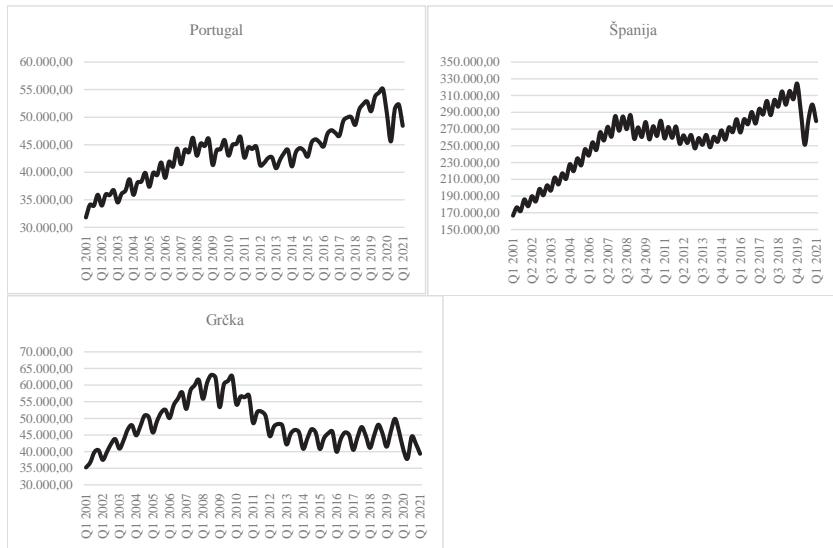
Izvor: Autori prema kvartalnim podacima MMF-a.

Slika 3 prikazuje očiglednu razliku u pogledu spoljnog bilansa članica EFTA u odnosu na periferiju EZ. Osim privremenog pogoršanja tokom velike recesije i tokom pandemije, članice EFTA uglavnom ostvaruju pozitivan (viškovni) bilans svojih tekućih računa. Nasuprot tome, u perifernim zemljama EZ beleži se deficit tekućih računa, sa znacima prilagođavanja u postkriznom periodu (Baldvin & Giavazzi, 2016; Pierluigi & Sondermann, 2018).

Slika 3: Prosečno stanje tekućih računa (% BDP) u članicama EFTA i u perifernim zemljama EZ u periodu od 2000. do 2020.
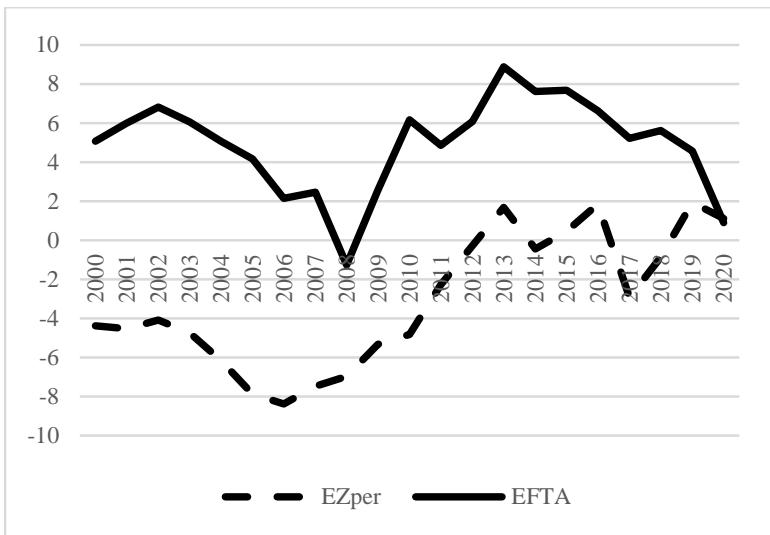
Izvor: Pregled autora prema godišnjim podacima OECD-a.

Najveći problemi periferije EZ jesu odsustvo suverene monetarne politike, kao i politike deviznog kursa u kriznim okolnostima. Depresijacija valute (mehanizam prilagođavanja promene rashoda) i relaksiranija monetarna politika možda bi mogle da pomognu realnoj privredi u ovim zemljama, kao i njihovoj spoljnoj poziciji. Osim toga, pokazalo se da su nadnacionalne mere ECB za njih prociklične, a kontraciklične za centralne države EZ (Micossi, 2015; Vortmann & Stahl, 2016; Botta, Tippet & Onaran, 2018). Nominalni kurs (evro) zajednički je za sve članice EZ i ne može se prilagođavati nacionalnim (kontracikličnim) interesima svih njenih članica (Slika 4).

Slika 4: Nominalni kurs evra prema američkom dolaru u perifernim zemljama EZ i članicama EFTA u periodu od 2000. do 2020.
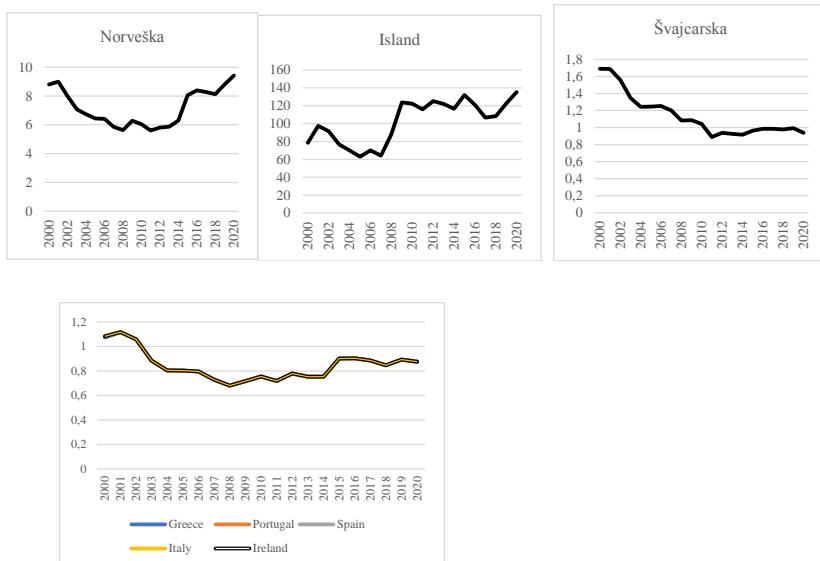
Izvor: Pregled autora prema godišnjim podacima OECD-a.

Na Slici 4 prikazane su varijacije nominalnog kursa u celoj EZ i u zemljama EFTA u periodu 2000–2020. Za razliku od zemalja EZ, članice EFTA su, zahvaljujući svom monetarnom suverenitetu, imale koristi od većih varijacija nominalnog kursa. Njihove valute mogu slobodno da gube ili dobijaju na vrednosti kako bi delovale kontraciklično, što ih štiti od spoljašnjih udara (Ghosh, Kureshi & Tsangarides, 2014; Josifidis, Allegret & Beker Pucar, 2014).

3. Metodološki okvir

3.1 Panel VAR model

Uzorak evropskih ekonomija čine dva panela: jedan čine članice EFTA (Švajcarska, Norveška i Island), a drugi periferija EZ (Grčka, Portugal, Španija, Italija i Irska). Lihtenštajn je izostavljen iz uzorka EFTA

zbog toga što za ovu mikrodržavu nema podataka u bazama podataka Svetske banke, MMF-a, OECD-a, ni Evrostata, pošto se u njoj koristi švajcarski franak kao zakonsko sredstvo plaćanja. Sve varijable su u kvartalnoj frekvenciji, dobijene iz Međunarodne finansijske statistike MMF-a za posmatrani period 2001K1–2021K1. Pošto je Grčka pristupila EZ 2001. godine, u istraživanju je uzeta ova godina kao početna, a kao završna godina uzeta je 2021 –poslednja za koju trenutno postoje dostupni kvartalni podaci. Empirijsko istraživanje obuhvatilo je sledeće varijable: (i) neto tekući račun, isključujući transfere, u američkim dolarima; (ii) neto kapitalni račun, isključujući rezerve, u američkim dolarima; (iii) nominalni BDP, bez desezoniranja, u nacionalnoj valuti; (iv) nominalni efektivni kurs (NEER), indeks.

Panel VAR tehnike su upotrebljene kako bi se dobile funkcije impulsnog odziva (IRF) za otkrivanje različitih kanala prenosa spoljašnjih šokova u analiziranom uzorku EFTA i periferije EZ (Cannova i Ciccarelli, 2013; Lesuisse, 2019). Tokom protekle decenije, zavisnost poprečnog preseka u podacima makropanela pobuđuje veliku pažnju u novijoj literaturi o vremenskim serijama panela (Eberhardt, 2009). Prvi korak je bio da se ispitaju varijabilna i rezidualna zavisnost poprečnog preseka u makropanelu pomoću Pesaran testa zavisnosti poprečnog preseka (De Hoios & Sarafidis, 2006). Za varijable gde je prihvaćena nulta hipoteza o nezavisnosti poprečnog preseka, primenjen je test jediničnog korena prve generacije Maddala i Vu panela. U slučajevima kada je nulta zavisnost odbačena, primenjen je test jediničnog korena druge generacije Pesaranovog panela (Pesaran, 2003). NEER i GDP su nestacionarne varijable, pošto je prihvaćena nulta hipoteza o prisustvu jediničnog korena. Varijable tekućeg računa i kapitalnog računa stacionarne su varijable pošto se nulta hipoteza odbacuje. Dakle, panel VAR model uključuje prve razlike nestacionarnih varijabli, dok stacionarne varijable ulaze u panel VAR model u nivoima.

Panel VAR se procenjuje korišćenjem paketa Abrigo i Love (2015) preko Stata15 softvera. Prema proceduri Love i Zicchino (2006) i Love i Abrigo (2015), primenjena je srednja razlika napred ili ortogonalna devijacija (Helmertov postupak). Sve varijable u modelu transformišu se u odstupanjima od unapred srednjih vrednosti kako bi se uklonili fiksni efekti (Arellano & Bover, 1995). Ova procedura dozvoljava ko-

rišćenje zaostalih regresora kao instrumenata, dok se koeficijenti procenjuju generalizovanom metodom momenata (GMM). Kako bi se odabrao optimalni poredak zaostajanja, Andrevs i Lu (2001) predložili su konzistentne kriterijume za odabir momenta i modela zasnovane na Hansenovoj (1982) J-statistici, po analogiji s uobičajenim kriterijumima za odabir modela baziranim na maksimalnoj verovatnoći, kao što su kriterijumi autora Akaike, Baiesian i Hanan-Kvin (Akaike, Baiesian & Hannan-Quinn).

3.2 Rezultati

Izvedeni IRF podaci koriste se za praćenje prenosa šoka tekućeg računa i šoka na kapitalnom računu na varijacije BDP-a i NEER-a. Naime, spoljnotrgovinski šok se odražava na tekući račun, uglavnom u njegovom ključnom delu neto trgovine robama i uslugama. Istovremeno, eksterni finansijski šok se odražava na kapitalni račun koji obuhvata prilive i odlive eksternog kapitala (osim deviznih rezervi). Jači i duži uticaj eksternih šokova na BDP (realnu ekonomiju) pokazuje veću osetljivost ovih privreda, kao i skup mehanizam prilagođavanja praćen gubitkom proizvodnje i zaposlenosti. Istovremeno, relativno jači i duži uticaj eksternih šokova na NEER ukazuje na veću varijabilnost nominalnog kursa koji predstavlja štit protiv eksternih šokova i implicira blaži uticaj šokova na realnu ekonomiju.

Uticaj spoljnotrgovinskih i finansijskih šokova na varijacije BDP-a, tokom osam kvartala, prikazan je na Slici 5. Usled negativnog spoljnotrgovinskog šoka (pogoršanja stanja tekućeg računa), dolazi do naglog pada BDP-a članica EFTA. Međutim, ove zemlje su se oporavile i stabilizovale posle petog kvartala (Slika 5, levo). U slučaju periferije EZ, uticaj spoljnotrgovinskog šoka na varijacije BDP-a blaži je, ali je produžen na osam kvartala. Ako posmatramo uticaj eksternog finansijskog šoka, odnosno nagli odliv eksternog kapitala (Slika 5, desno), periferija EZ je više pogođena, s obzirom na nagli pad privrednih aktivnosti i destabilizaciju proizvodnje do sedmog kvartala. Padovi u proizvodnji u članicama EFTA, kao reakcija na eksterni finansijski šok, relativno su mali, a proizvodnja se već u drugom kvartalu stabilizovala. Kako poka-

zuje empirijska analiza, ekonomske aktivnosti članica EFTA mnogo više pogađaju spoljnotrgovinski udari. Članice EZ pogađaju obe vrste udara, s tim što je destabilizacija proizvodnje očigledno duža za ovu grupu evropskih ekonomija.

Slika 5: Uticaj šoka tekućeg računa (levo) i šoka kapitalnog računa (desno) na BDP tokom osam kvartala, IRF
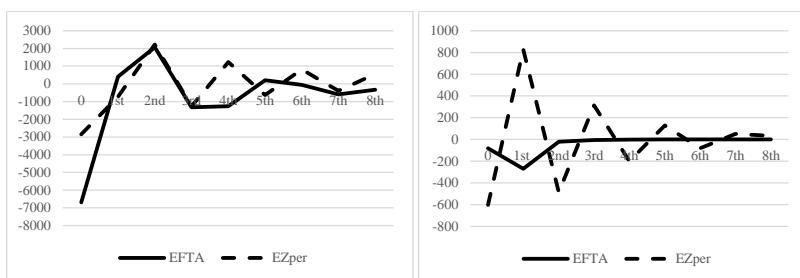
Izvor: Analiza autora.

Usled spoljnotrgovinskog šoka, nominalni kurs članica EFTA depresira, što predstavlja kontraciklični efekat pod neposrednim uticajem udara. Prociklični efekat NEER-a evidentan je u slučaju periferije EZ pošto nominalni kurs evra u početku raste, uz relativno slabu depresijaciju evra od prvog do osmog kvartala. Nominalni kurs evra je zajednički za celu EZ, a njegove fluktuacije ne mogu biti kontraciklične za sve (inače heterogene) zemlje članice. Što se tiče periferije EZ, rezultati pokazuju da kretanje nominalnog (uobičajenog) kursa evra ne može da služi kao štit protiv spoljnotrgovinskih šokova. Što se tiče spoljnog finansijskog šoka, situacija je još nepovoljnija jer nominalni kurs evra raste i deluje prociklično za najosetljiviji deo EZ. Nominalni efektivni kurs za članice EFTA depresira do četvrtog kvartala, što predstavlja kontraciklični efekat tokom jedne godine nakon pojave šoka.

4. Zaključna razmatranja

U poslednje vreme, globalna ekonomija je pretrpela dosada neviđene eksterne udare s efektima prelivanja na nacionalne ekonomije, tj. velikom recesijom i pandemijskom krizom 2020. godine. Transmisioni efekti trgovinskih i finansijskih eksternih šokova razlikuju se, između ostalog, i zbog usvojenih monetarnih okvira. Kako bi što detaljnije ispitali ovu temu, u ovom istraživanju su obuhvaćene dve različite grupe zemalja. Zemlje članice EFTA donele su odluku da ne produbljuju svoje ekonomske integracije sa drugim evropskim zemljama, pre svega sa zemljama članicama EU. Ove zemlje (Švajcarska, Norveška, Island i Lihtenštajn) zadržale su svoj ekonomski suverenitet, tj. trgovinsku, monetarnu i fiskalnu politiku. Članice EU, s druge strane, odrekle su se svoje suverene trgovinske politike. Devetnaest članica EU odreklo se i monetarne autonomije – te države čine evrozonu (EZ). Međutim, EZ se nije pokazala kao optimalno valutno područje zbog heterogenosti svojih članica. Upravo zbog te heterogenosti, te nedovoljne fleksibilnosti plata i cena, političke solidarnosti, kao i mobilnosti radne snage, monetarne mere ECB nekompatibilne su sa najnestabilnijim delom EZ – periferijom EZ.

U fokusu ovog istraživanja je razlika u mehanizmima makroprilagođavanja između evropskih ekonomija koje su zadržale svoj monetarni suverenitet (države EFTA) i onih koje su ga se odrekle (periferija EZ). Glavne razlike između ove dve grupe jesu mehanizmi prilagođavanja u krizi i pod uticajem eksternih šokova. Članice monetarne unije moraju koristiti restriktivne mehanizme prilagođavanja koji utiču na realnu ekonomiju i čije su posledice veći i trajniji gubici u proizvodnji, kao i povećanje nezaposlenosti. Nije moguće koristiti depresijaciju nominalnog kursa kako bi se poboljšala konkurentnost i izbegao znatniji pad proizvodnje. Shodno tome, zemlje EFTA su imale koristi od fleksibilnog režima deviznog kursa kao zaštite protiv eksternih šokova.

Panel VAR model je upotrebljen kako bi se istakla razlika između ove dve grupe u periodu 2001K1–2021K1. Šok tekućeg računa se koristi kao zamena za spoljnotrgovinski šok, dok se šok na kapitalnom računu koristi kao zamena za eksterni finansijski šok. Prenos ovih ek-

sternih šokova na varijacije BDP-a i NEER beleži se posebno za države EFTA (Švajcarska, Norveška, Island) i posebno za periferiju EZ (Grčka, Španija, Portugal, Italija, Irska). Rezultati panel VAR procene pokazuju da destabilizacija proizvodnje duže traje u državama periferije EZ pod uticajem oba tipa šoka. Takođe, države EFTA su pod uticajem oba tipa eksternih šokova imale koristi od NEER amortizacije NEER-a kao automatskog stabilizatora, za razliku od periferije EZ. Pokazalo se da su varijacije NEER-a procikliče u slučaju periferije EZ i kontraciklčne u slučaju država EFTA.

Dakle, treba imati u vidu da zemlje koje se odreknu monetarne autonomije snose veće posledice pod uticajem eksternih šokova. Ovo treba uzeti u obzir prilikom odlučivanja da li će neka država pristupiti monetarnoj uniji. Ove implikacije mogu biti važne za razmatranje za kreatore politika evropskih ekonomija koje su u procesu približavanja EU, kao i EZ. Usled globalne ekonomske krize, uvećavaju se oportunitetni troškovi odricanja od ekonomske autonomije, posebno monetarne. Dalja istraživanja bi trebalo da obuhvate detaljniju analizu konkretnih zemalja unutar EFTA i periferije EZ, budući da je heterogenost karakteristika i ovih grupa. U tu svrhu bi mogla biti zanimljiva tradicionalna analiza vremenskih serija, ali i procena heterogenih i nestacionarnih panela (*mean group* estimatori) kako bi se dobile heterogene procene koeficijenata za svaku zemlju sa (poželjno) koeficijentom prilagođavanja ka ravnoteži.

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MACROECONOMIC ADJUSTMENTS UNDER THE IMPACT OF EXTERNAL SHOCKS: THE CASE OF THE EUROZONE PERIPHERY AND EFTA MEMBERS[4]

Abstract: In the circumstances of global economic crisis and the accompanying external shocks, adjustment macro-mechanisms between economies differ depending on the adopted monetary framework. This research aims to highlight the difference between the Eurozone (EZ) member states which have sacrificed their monetary sovereignty and EFTA members, unwilling to deepen their economic integration and thus give up their monetary autonomy. The period examined is 2001Q1-2021Q1, covering two biggest external shocks in recent times – the Great Recession of 2008 and the 2020 Pandemic Crisis. Empirical findings are based at the estimation of panel VAR model for EFTA and the EZ periphery. The estimation results reveal the influence of two types of external shocks, current account (trade) and capital account (financial) shocks, to the variations of GDP and NEER. The findings confirm that monetary autonomy acts as a shield against external trade

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and financial shocks, while the vulnerable monetary union members suffer from higher and prolonged output losses.

Key words: global crisis, external shocks, adjustment mechanisms, Eurozone, EFTA.

JEL: E52, E58, F33, F45.

Introduction

The economic integration of European economies started after the WWII with the 1950 Treaty of Paris and 1957 Treaty of Rome. In the decades that followed, the European Community evolved from a free trade area to a customs union (1968) to a common market (1987), reaching the highest level of economic integration, i.e., a monetary union with the Maastricht Treaty (1993). However, as a counterbalance to these tendencies, some European economies were reluctant to deepen the level of economic integration with other European economies, beyond the free trade area. These countries formed the European Free Trade Area (EFTA) with the Stockholm Agreement (1960). However, the EFTA membership declined with the transition of its members to the European Community, later the European Union (EU), since some members changed their stance towards further economic integration. Currently, the EFTA consists of four European economies, Switzerland, Norway, Iceland, and Liechtenstein. The EU (formerly the European Community) consists of 27 member states, 19 states being the members of the European Monetary Union (EMU) or the so-called Eurozone (EZ).

The aim of this research is to compare and contrast the two groups of European economies: those which have kept their monetary sovereignty (EFTA) and those which gave it up (EZ members), in terms of their vulnerability to external shocks in a crisis. The main difference between these groups is the fact that the main assumption of a monetary autonomy is that all monetary instruments can be used counter-cyclically to withstand external shocks. The EFTA members, therefore, would be able to use their sovereign monetary policy, including the exchange rate policy, to stabilize their economies under the impact of any crisis.

However, the EZ members are unable to do the same, as these countries gave up their monetary autonomy, which acts an important tool or a buffer under the pressure of external shocks.

The study examines the economies of Switzerland, Norway, and Iceland, as the representatives of the EFTA countries, and the economies of the most vulnerable EZ members, the so called EZ periphery (Greece, Portugal, Spain, Iceland). The EZ periphery is used, instead of the whole EZ, because this group of countries (widely known under the acronym PIIGS) are the EZ members which have suffered the most from the loss of their monetary sovereignty. The aim of this research is to highlight the difference between the adjustment mechanisms of two groups of European countries, under the impact of external trade and financial shocks as accompanying effects of the global economic crisis in the 2001Q1-2021Q1 period. Since VAR models are best suited for investigation of the shock transmission, the authors have applied panel VAR model in order to differentiate between the EFTA and the EZ periphery and to register the difference in shock transmission to their economic activities and currencies. External shocks are represented with current account (trade) shock and capital account (financial) shock. The impact of external shock to the variations of gross domestic product (GDP), as well as nominal effective exchange rate (NEER), has been tracked via impulse response functions of estimated panel VAR models.

To summarize, this research aims to highlight the losses suffered by the EZ members, especially the most vulnerable members (the EZ periphery), in contrast to the European countries which chose not to deepen their economic integration (the EFTA members). The monetary sovereignty of the EFTA members operates under the assumption that their currencies fluctuate counter-cyclically to withstand the impact of external shocks. The opposite holds for the EZ periphery in the absence of their national currencies under the crisis impact. The paper is structured as follows: after the Introduction section, Section 1 deals with the overview of European monetary and exchange rate arrangements, followed by a descriptive analysis concerning the adjustment mechanisms of the EZ periphery vs EFTA members (Section 2). Section 3 contains the methodological framework: the model, key findings, and discussion. Finally, Section 4 comprises the concluding remarks of this research.

1. European monetary and exchange rate arrangements

From a European perspective, the two-angle theory seems to be valid, having in mind a domination of rigid exchange rate arrangements (Aizenman, Chinn & Hiro, 2013). In other words, 19 EU member states are in a monetary union, two states have implemented the currency board regime, and only one state has implemented the euroization. On the other hand, the flexible arrangement has been implemented by 10 countries. Intermediate regimes are the least represented, implemented by only three European economies (International Monetary Fund, 2020). However, we should bear in mind that six out of 10 countries with a flexible arrangement, and two out of three countries with a soft peg, will become members of the EZ in the near future. Therefore, the perspective further supports the two-angle theory in Europe with the dominance of rigid arrangements, along with free capital movement (Bakker, 2018).

All forms of rigid exchange rate arrangements involve the sacrifice of monetary sovereignty. The rigid exchange rate regimes compared in terms of growing flexibility are official dollarization/euroization, monetary union, and the currency board. In contrast to an official dollarization/euroization or currency board, which are predominantly forced solutions (high/hyperinflation, chronic macro-instability, or political instability), a monetary union is a carefully thought-out solution which incorporates an assessment of the benefits and costs of joining the currency zone. The participating countries accept the common currency, renouncing their national currencies, monetary and exchange rate policies (Dabrowski, 2019). Those economies are not economically unstable or under risk; therefore, the impact of renouncing monetary sovereignty is *de facto* enormous. Tighter commercial and financial integration between countries and higher mobility of production factors can make the loss of monetary sovereignty minimal and the benefits of joining the currency union higher (Beker Pucar & Glavaški, 2020). If the member countries of the monetary union are closely connected and key macro-indicators have converged (inflation rate, public finance indicators, interest rate, exchange rate), then the division of the same currency is justified. A single central bank and monetary policy will suit most of its

members, because the more similar and connected the economies are, the less the occurrence of asymmetric shocks will be.

The most famous monetary union is the EZ, as the final phase of the constant deepening of the economic integration between European economies since the end of WWII. The EZ currently consists of 19 countries: Germany, France, Italy, Belgium, the Netherlands, Luxembourg, Ireland, Portugal, Spain, Greece, Austria, Finland, Slovenia, Cyprus, Malta, the Slovak Republic, Estonia, Lithuania, Latvia. However, the EZ is not an Optimum Currency Area (OCA), since wages are not flexible enough, labour mobility is not sufficient, and the joint efforts towards political criteria fulfillment regarding fiscal transfers, homogeneous preferences and solidarity are inadequate (Rose, 2008; Furrutter, 2012; Baldwin & Giavazzi, 2016). At the same time, the EZ members are heterogeneous, despite undergoing a convergence process before accession to the EZ. With such heterogeneous membership, the European Central Bank (ECB) will conduct a countercyclical policy for one member group (mainly core states) and procyclical policy for the other member group (mainly the periphery) (Bonatti & Fracasso, 2017; De Grauwe, 2018; Franks et al., 2018).

The EFTA members, namely Switzerland, Norway, and Iceland, have kept their monetary sovereignty. What these EFTA members have in common is that they perform a delicate and dynamic balancing act between integration (with the EU members) and preservation of their own autonomy (Damen, 2020). These economies have practiced a flexible exchange rate arrangement with inflation targeting monetary framework (IMF, 2020). The exception is Liechtenstein, the micro-state which uses the Swiss Franc as a legal tender. This, together with the lack of high-frequency data for this micro-state, is the reason for excluding Liechtenstein from the empirical analysis.

2. Descriptive analysis: EZ periphery vs EFTA

Until recently, the most important external shock was the Great Recession of 2008. Lately, the Covid-19 pandemic crisis has created one of the worst economic shocks with transmission effects to the whole global

economy. Negative external shocks, such as the Great Recession and the 2020 Pandemic Crisis, produce high instability and can lead to persistent periods of weaker economic growth, higher unemployment, falling real incomes and rising poverty (Rodriguez Canfranc, 2020; Greenwood & Burton, 2020; Beljić & Glavaški, 2021). However, contractions in real economy and its duration are closely related to a monetary framework – whether countries are monetary sovereign or dependent from supranational monetary authority (as in a monetary union). Under the impact of external shocks, the sacrifices made by the monetary union members come to the fore (Edwards, 2006). Their recovery due to the crisis circumstances has been hampered and prolonged in the absence of sovereign monetary policy instruments. The research draws a comparison between the most vulnerable part of the EZ – the EZ periphery states (Greece, Portugal, Spain, Italy, Ireland), with the European countries which are not members of the EU and have kept their monetary sovereignty – EFTA States (Switzerland, Norway, Iceland). The time span for the empirical research is 2001Q1-2021Q1, since Greece joined the EZ in 2001, while the last available quarterly data is 2021Q1.

One of the most important distinctions between the EZ periphery and EFTA members is the adjustment mechanisms under the impact of the global crisis. The global crisis produces a spillover effect to the national economies through external shocks and sudden reversals in balance of payments (external imbalance). The external trade shock is reflected in current account deficit, and the external financial shock is reflected in capital account deficit. Both types of shocks, except external imbalance, spill over into output contractions (internal imbalance). However, the issue is how long (temporarily or permanently) or how strong (mild or sharp) are output contraction effects. Figure 1 shows GDP as a measure of economic activity for the EFTA members in the 2001-2021 period. Norway, Switzerland, and Iceland, despite the drop in GDP during the Great Recession and the 2020 Pandemic Crisis, generally follow the rising trend of their economic activities (EFTA, 2021).

Figure 1: GDP (nominal, in US dollars) of EFTA countries in the period 2001-2021
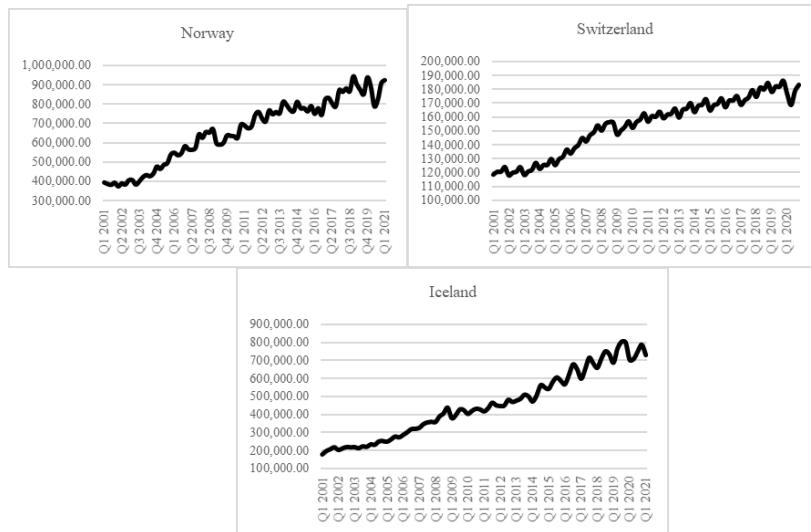
Source: Authors according to the quarterly IMF data.

Compared to the EFTA countries, which recorded a temporary drop in their output, the EZ periphery recorded a permanent change in this variable (Figure 2). This conclusion is mostly based on the influence of the Great Recession since the effects of the 2020 Pandemic Crisis have yet to be summarized. Portugal and Spain have recorded a prolonged stagnation and very slow economic recovery which eventually ended with another abrupt GDP drop due to the pandemic. In the sample of the EZ periphery, Greece shows the direst situation, since this economy has never recovered from the Great Recession and the European debt crisis that followed (Stanišić, 2012; Bartlett and Prica, 2016; Ehmer, 2017; Onaran, 2018).

Figure 2: GDP of EZ periphery in the period 2001-2021
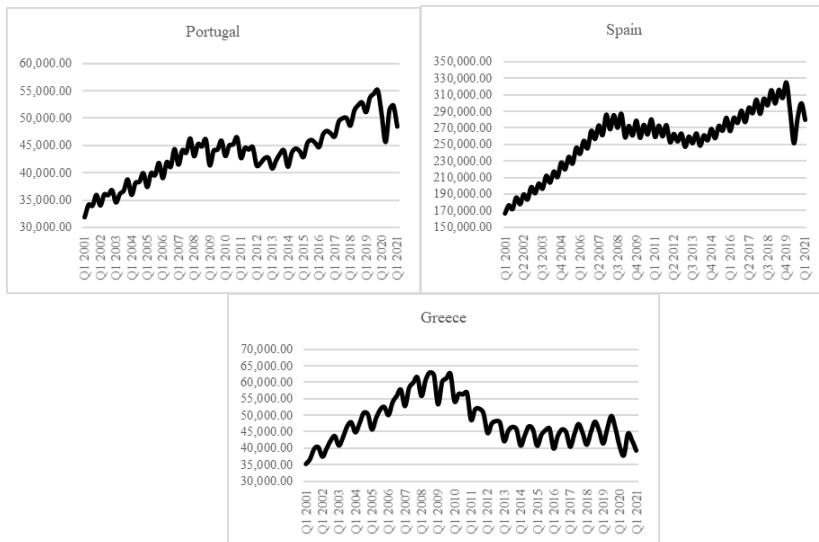
Source: Authors according to the quarterly IMF data.

Figure 3 shows the apparent difference regarding the external position of the EFTA members vs the EZ periphery. Except for the temporarily worsened position during the Great Recession and during the pandemic, the EFTA members generally follow the positive (surplus) path of their current accounts. In contrast, EZ periphery has been dominantly in the deficit zone of their current accounts, with the signs of adjustments in the post-crisis period (Baldwin & Giavazzi, 2016; Pierluigi & Sondermann, 2018).

Figure 3: Average current account position (% of GDP) for EFTA
members and EZ periphery in the period 2000-2020
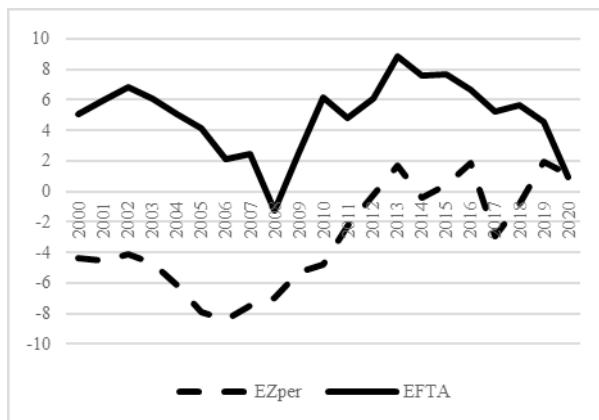
Source: Authors' reviews according to the yearly OECD data.

For the most part, the EZ periphery suffers from the absence of sovereign monetary and exchange rate policy during crisis circumstances. Currency depreciation (expenditure-switching adjustment mechanism) and a more relaxed monetary policy could potentially bring relief to their real economies, as well as external position. Moreover, supranational ECB measures prove to be pro-cyclical for them and counter-cyclical for the EZ core states (Micossi, 2015; Wortmann & Stahl, 2016; Botta, Tippet & Onaran, 2018). Nominal (euro) exchange rate is common for all EZ members and cannot adjust according to the national (counter-cyclic) interests of all its members (Figure 4).

Figure 4: Nominal exchange rate (against the US dollar) of the EZ periphery and EFTA members in the period 2000-2020
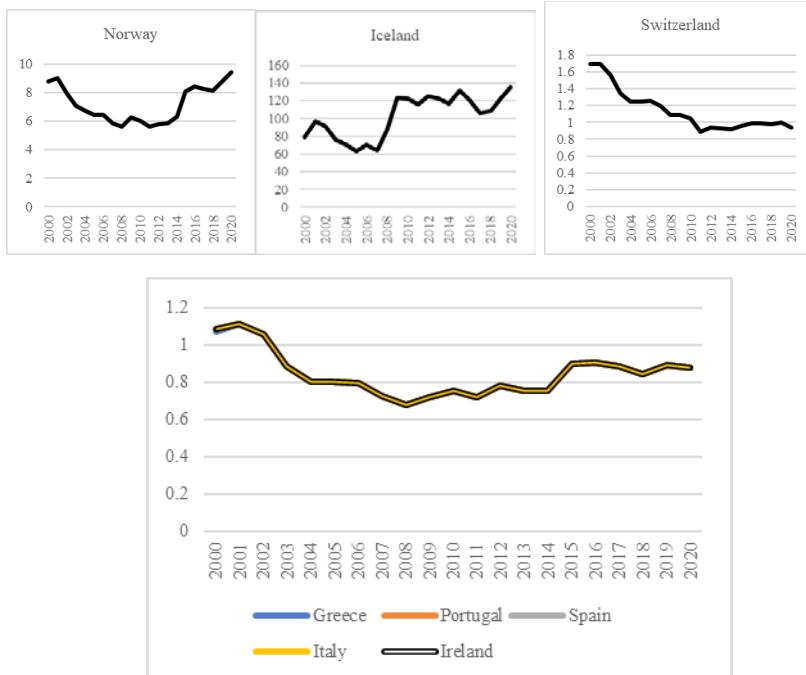
Source: Authors' reviews according to the yearly OECD data.

Figure 4 shows the nominal exchange rate variations of the EZ as a whole and the EFTA members in the 2000-2020 period. In contrast to the EZ, the monetary sovereign EFTA members have reaped the benefits from higher nominal exchange rate variations. Their currencies more freely depreciate and appreciate to act counter-cyclically, representing thus the buffer against external shocks (Ghosh, Qureshi & Tsangarides, 2014; Josifidis, Allegret & Beker Pucar, 2014).

3. Methodological framework

3.1 Panel VAR model

The sample of European economies consists of two panels: EFTA members (Switzerland, Norway, Iceland) and EZ periphery (Greece, Portugal, Spain, Italy, Ireland). The motive for the exclusion of Liechtenstein from the EFTA sample is the absence of the data for this micro-state in the databases of the World Bank, IMF, OECD, Eurostat, as a state using the Swiss Franc as a legal tender. All variables are in quarterly frequency, obtained from the IMF International Financial Statistics for the observed period 2001Q1-2021Q1. Since Greece joined the EZ in 2001, this is the starting year of the research, ending with 2001Q1 as (currently) the last available quarterly data. Empirical research includes following variables: (i) net current account, excluding transfers, US dollars; (ii) net capital account, excluding reserves, US dollars; (iii) nominal GDP, no seasonal adjustment, national currency; (iv) nominal effective exchange rate (NEER), index.

Panel VAR techniques are widely applied to obtain impulse response functions (IRFs) to detect different transmission channels of external shocks in the analyzed sample of EFTA and EZ periphery states (Cannova and Ciccarelli, 2013; Lesuisse, 2019). Cross-section dependence in macro panel data has received a lot of attention in the emerging panel time series literature over the past decade (Eberhardt, 2009). The first step was to investigate variable and residual cross–sectional dependence in macro panel with the Pesaran cross-sectional dependence test (De Hoyos & Sarafidis, 2006). For variables where the null hypothesis of cross-sectional independence is accepted, the first-generation Maddala and Wu panel unit root test has been administered. In the cases where the null has been rejected, the second-generation Pesaran panel unit root test has been administered (Pesaran, 2003). NEER and GDP are non-stationary variables, as the null hypothesis of the unit root presence has been accepted. Current account and capital account variables are stationary variables since the null hypothesis is rejected. Therefore, the panel VAR model includes first differences of non-stationary variables, while stationary variables enter the panel VAR model in the levels.

The panel VAR is estimated using the package provided by Abrigo and Love (2015) through Stata15 software. According to the procedure by Love and Zicchino (2006) and Love and Abrigo (2015), forward mean differencing or orthogonal deviation (the Helmert procedure) has been applied. All variables in the model are transformed in deviations from forward means in order to remove the fixed effects (Arellano & Bover, 1995). The procedure allows the use of the lagged regressors as instruments, while the coefficients are estimated with the Generalized Method of Moments (GMM). For the purpose of choosing the optimal lag order, Andrews and Lu (2001) proposed consistent moment and model selection criteria based on Hansen's (1982) J statistic, analogous to commonly used maximum likelihood-based model selection criteria, Akaike, Bayesian and the Hannan-Quinn information criteria.

3.2 The results

Derived IRFs are used to track the transmission of current account shock and capital account shock to the variations of GDP and NEER. Namely, the external trade shock is reflected in a current account, mainly in its crucial section of net trade of goods and services. At the same time, the external financial shock is reflected in a capital account which comprises inflows/outflows of external capital (excluding foreign exchange reserves). A stronger and longer impact of external shocks to the GDP (real economy) shows a higher sensitivity of these economies, as well as costly adjustment mechanism accompanied with output and employment losses. At the same time, a relatively stronger and longer impact of external shocks to NEER points to the higher variability of nominal exchange rate which represents a buffer against external shocks and, assumably, implies milder impact of shocks to the real economy.

The influence of external trade and financial shocks to the GDP variations, during eight quarters, is shown in Figure 5. As a result of a negative external trade shock (worsening of current account position), there is a sharp drop of GDP of the EFTA members. However, it has recovered and stabilized after fifth quarter (Figure 5, left). In the case of EZ periphery, the impact of external trade shock to the GDP variations is

milder, but prolonged until eight quarters. If we observe the influence of external financial shock, i.e., abrupt outflow of external capital (Figure 5, right), the EZ periphery is more affected, considering the sharp drop of economic activities and output destabilization until the seventh quarter. Output contractions of the EFTA members as a reaction to external financial shock is relatively weak with the stabilization until the second quarter. Economic activities of the EFTA members are, according to the empirical findings, much more affected by external trade shocks. The EZ members are susceptible to both types of shocks, but output destabilization is apparently longer for this group of European economies.

Figure 5: The influence of current account shock (left) and capital account shock (right) to the change of GDP during eight quarters, IRFs
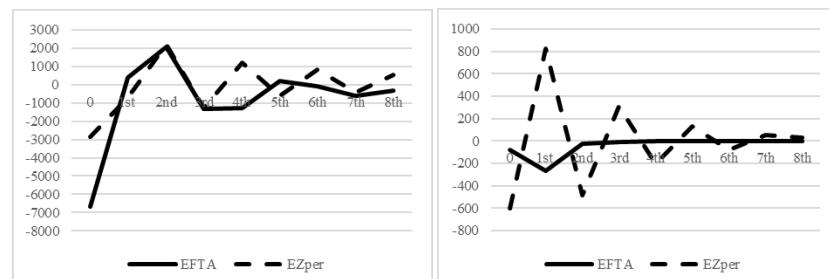
Source: Authors' estimations.

The influence of both types of shocks could be mitigated if countries have at their disposal a nominal exchange rate as a shock absorber, which assumes the combination of a flexible exchange rate arrangement and sovereign monetary policy. This is the case for the EFTA members. In this sense, currency weakening (nominal exchange rate depreciation) automatically improves price competitiveness, current account position, implying weaker and shorter output contractions. Figure 6 shows the reaction of NEER to the external trade shock (left) and external financial shock (right).

Figure 6: The influence of current account shock (left) and capital account shock (right) to the change of NEER during eight quarters, IRFs
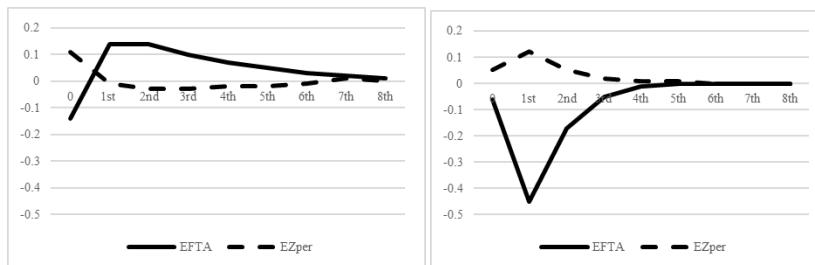
Source: Authors' estimations.

As a reaction to external trade shock, the nominal exchange rate of the EFTA members depreciates expressing thus counter-cyclic effect under the immediate impact of the shock. Pro-cyclic effect of NEER is evident in the case of the EZ periphery since the nominal euro exchange rate initially increases, with relatively weak euro depreciation from the first until the eighth quarter. The nominal euro exchange rate is common to the whole EZ, and its fluctuations cannot be counter-cyclic for all (otherwise heterogenous) member states. For the EZ periphery, the results show that the movement of the nominal (common) euro exchange rate cannot serve as a buffer against external trade shocks. The situation concerning the external financial shock is even more unfavourable since the nominal euro exchange rate increases, acting pro-cyclically for the most vulnerable part of the EZ. The nominal effective exchange rate for the EFTA members depreciates until the fourth quarter, showing thus counter-cyclic effect during one year after the shock occurs.

4. Concluding remarks

Global economy has been recently confronted with unprecedented external shocks with spillover effects to the national economies, namely the Great Recession and the 2020 Pandemic Crisis. The transmission effects of trade and financial external shocks differ, among other factors, due to the adopted monetary frameworks. To shed more light into this

issue, this research examines two different groups of countries. The EFTA member states chose not to deepen the level of their economic integration with other European countries, above all, the EU member states. The EFTA countries (Switzerland, Norway, Iceland, and Liechtenstein) retained their economic sovereignty, i.e., trade, monetary and fiscal policy. The EU members gave up their sovereign trade policy, but 19 of them also gave up their monetary autonomy – the EZ member states. However, the EZ has not been shown as an optimum currency area, due to the heterogeneity of its members. Such heterogeneous monetary union members, in the absence of wage and price flexibility, political solidarity, as well as labour mobility, have made the ECB monetary measures incompatible with the most vulnerable part of the EZ – the EZ periphery.

The focus of this research is to accentuate the difference regarding macro-adjustment mechanisms in the case of European economies which have kept (EFTA States) or renounced their monetary sovereignty (the EZ periphery). The main distinctions between these groups are adjustment mechanisms in a crisis and under the impact of external shocks. Monetary union members must use restrictive adjustment mechanisms which affect the real economy and result in higher and prolonged output and employment losses). It is not possible to use nominal exchange rate depreciations in order to improve competitiveness and avoid significant output contractions. Consequently, the EFTA countries have benefited from their flexible exchange rate arrangement as a buffer against external shocks.

The panel VAR model is used to highlight the difference between these two groups in the 2001Q1-2021Q1 period. A current account shock is used as a proxy for external trade shock. A capital account shock is used as a proxy for external financial shock. The transmission of these external shocks to the variations of GDP and NEER has been tracked separately for EFTA States (Switzerland, Norway, Iceland) and the EZ periphery (Greece, Spain, Portugal, Italy, Ireland). The results of panel VAR estimation show that the output destabilization is more prolonged in the case of the EZ periphery under the impact of both types of shocks. Also, EFTA States under the impact of both types of external shocks have benefited from NER depreciation as an automatic stabilizer, in contrast to the EZ periphery. The variations of NER have proved to be

pro-cyclical in the case of the EZ periphery and counter-cyclical in the case of EFTA States.

Therefore, we should bear in mind the higher burden of countries which renounce their monetary autonomy under the impact of external shocks when deciding whether to join the monetary union. These implications may be important to consider for the policy makers of European economies which are in the convergence process towards the EU and, eventually, the EZ. The global economic crisis raises the opportunity costs of giving up the economic autonomy, especially the monetary autonomy. Further research should include a more detailed analysis of specific countries within the EFTA and the EZ periphery, since heterogeneity is the feature of these groups as well. For that purpose, a traditional time series analysis could be interesting, but also the estimation of heterogeneous and non-stationary panel (mean group estimators) in order to obtain heterogenous coefficient estimates for each country with (preferably) coefficient of adjustments towards equilibrium.

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STRATEGIJE PREVLADAVANJA STRESA U VANREDNIM SITUACIJAMA KOD STUDENATA

Rezime: Ispitali smo strukturu strategija prevladavanja, povezanost dimenzije ličnosti eksplanatorni stil i strategija prevladavanja, kao i polne razlike i razlike između studenata fakulteta prirodnog i društvenog usmerenja u Beogradu. U istraživanju je učestvovalo 303 ispitanika. Eksplanatorni stil smo operacionalizovali kao dimenzije Dispozicioni optimizam i Nada i merili upitnicima Test životne orijentacije – revidiran (LOTR) i Skala nade kod odraslih (AHS). Strategije prevladavanja smo merili instrumentima Upitnik načina suočavanja sa stresom (WOCQ) i Indikatori strategija prevladavanja (CSI). Faktorskom analizom izolovano je ukupno dvanaest faktora na svim upitnicima, što je u skladu s nalazima dosadašnjih studija. Dobili smo izraženije angažovane strategije prevladavanja. Potvrđena je povezanost između Dispozicionog optimizma i strategija prevladavanja, kao i Nade i strategija prevladavanja. Statistički značajno izraženije vrednosti imaju žene i studenti društvenih fakulteta. Dobijeni rezultati ukazuju na potrebu angažovanijeg pristupa obrazovno-vaspitnih ustanova u sticanju kompetencija za aktivno suočavanje s vanrednim situacijama, a posebno kod studenata fakulteta prirodnih usmerenja i muškaraca.

Ključne reči: vanredne situacije, strategije prevladavanja, dispozicioni optimizam, nada, studenti

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1. Uvod

Vanredne situacije predstavljaju poseban vid rizika i podrazumevaju postojanje uslova koji dovode do ljudskih i materijalnih gubitaka (Živković, 2009, prema Živković, Čabarkapa i Mlađan, 2011). Kada je u pitanju psihološki aspekt reagovanja čoveka na vanredne situacije, onda se govori o strahu po život pojedinca, o psihičkoj neravnoteži koja nastaje usled pojačanih zahteva okoline na čoveka u uslovima vanrednih situacija. S obzirom na to da vanredne situacije nastaju neočekivano i zatiču ljude nespremne, individualni doživljaj stresa može biti veoma intenzivan, a sposobnost osobe da se u tom trenutku suoči sa vanrednim događajem može biti ograničena. Individualne reakcije ljudi za vreme vanrednih situacija uslovljene su brojnim činiocima, odnosno resursima. Značajnu ulogu imaju strategije prevladavanja stresa ili mehanizmi prevladavanja krize, kao procesi koji pomažu ponovnom uspostavljanju psihičke ravnoteže, s jedne strane, kao i dimenzije ličnosti kao što je eksplanatorni stil, s druge strane.

Jedna od najprihvaćenijih definicija prevladavanja stresa jeste ona koju su predložili Lazarus i Folkmanova (Lazarus & Folkman, 2004, str. 145), prema kojoj prevladavanje predstavlja „trajno, promenljivo kognitivno i bihejvioralno nastojanje izlaženja na kraj sa specifičnim spoljašnjim i/ili unutrašnjim zahtevima, a koji su procenjeni kao opterećujući ili u toj meri teški da nadilaze resurse kojima osoba raspolaže". Navedeni autori razlikuju prevladavanje usmereno na problem i prevladavanje usmereno na emocije. Strategije prevladavanja usmerene na problem podrazumevaju definisanje problema, traženje alternativnih rešenja, odmeravanje određenih mogućnosti u smislu gubitka ili dobitka, odabir jednog rešenja i stupanje u akciju (Wang & Saudino, 2011). Nasuprot tome, strategije prevladavanja usmerene na emocije sastoje se u izbegavanju, minimiziranju i distanciranju negativnih događaja i imaju za cilj regulaciju afekata, održavanje nade i optimizma, kao i odbijanje prihvatanja najgoreg (Zotović, 2004).

Karver i saradnici (Carver, Scheier, & Wientraub, 1989) pretpostavili su postojanje trinaest strategija prevladavanja: aktivno suočavanje; planiranje; zanemarivanje drugih aktivnosti; samokontrola; traženje pomoći; traženje emocionalne podrške; ventiliranje; odustajanje; po-

zitivna reinterpretacija i rast; negiranje; prihvatanje; okretanje religiji. Pojedini autori akcenat stavljaju na prevladavanje izbegavanjem (Elliot, Thrash, & Murayama, 2011), ili se naglašava više strategija, kao što su prevladavanje putem rešavanja problema, traženje socijalne podrške i izbegavanje (Amirkhan, 1990).

Kako bi otkrili resurse koji doprinose pozitivnom ishodu borbe sa stresnim situacijama, istraživači analiziraju različite dimenzije ličnosti (Genc, Pekić i Matanović, 2013). Među značajnijim konstruktima koji se vezuju za stresne situacije ističe se atribucioni ili eksplanatorni stil, koji se definiše kao tendencija da se ponude slična objašnjenja za različite događaje (Buchanan & Seligman, 1995). Parametri eksplanatornog stila su internalnost/eksternalnost, stabilnost/nestabilnost i globalnost/specifičnost (Abramson, Seligman, & Teasdale, 1978). Na osnovu navedenog, mogu se razlikovati pesimistički i optimistički eksplanatorni stil (Seligman, 1991). Pesimistički stil tumačenja događaja karakterišu internalnost, stabilnost i globalnost, a optimistički stil karakterišu eksternalnost, nestabilnost i specifičnost.

Smatra se da eksplanatorni stil više objašnjava tendenciju tumačenja svakodnevnih događaja koja može biti pesimistička ili optimistička, i da to ne treba izjednačavati s osobinom ličnosti kao što je dispozicioni optimizam (Carver & Scheier, 2014). Eksplanatorni stil se operacionalizuje kroz dimenziju optimizam/pesimizam, kao kod Testa životne orijentacije (Scheier, Carver, & Bridges, 1994), ili kroz dimenziju Nade, kao kod Skale nade za odrasle (Snyder et al., 1991). Pokazalo se da je nada bliska konstruktu optimizma (Carver & Scheier, 2014). U stresnim situacijama, kada se zacrtani cilj ne može ostvariti, nada pomaže da se pronađu alternativna rešenja za postizanje cilja, kao i motivacija za sprovođenje alternativnih načina (Snyder, Rand, & Sigmon, 2005).

Brojne evaluacione studije pokazuju kako se optimisti u situacijama koje su podložne kontroli, češće služe strategijama prevladavanja koje su usmerene na problem, a kada su suočeni s gubicima, primenjuju strategije usmerene na emocije, pri čemu nastoje da okolnosti postmatraju iz što pozitivnijeg ugla (Genc, 2014). Nasuprot optimistima, pesimisti najčešće koriste različita izbegavajuća ponašanja (Thompson & Gaudreau, 2008, prema Genc, Pekić i Matanović, 2013). Istraživanja, ta-

kođe, potvrđuju visoke negativne korelacije između optimizma, s jedne strane, i depresivne ličnosti, otuđenosti i beznadežnosti, s druge (Oláh, 2005, prema Genc, Pekić i Matanović, 2013).

Pojedina istraživanja se bave pitanjem prevladavanja stresa u prirodnim ili tehnološkim katastrofama. Tako su Baum i saradnici u svom istraživanju (Baum, Fleming, & Singer, 1983) došli do nalaza prema kojem ljudi koji su preživeli tehnološku katastrofu u većoj meri koriste strategije prevladavanja usmerene na problem, za razliku od strategija prevladavanja koje su usmerene na emocije. Stivart (Stewart, 1986) je došao do zaključka da u slučaju tornada, korišćenje strategija prevladavanja usmerenih na problem pozitivno korelira s manjim stepenom anksioznosti kod muškaraca i s manjim obraćanjem žena zdravstvenim službama, dok prevladavanje usmereno na emocije korelira s većim stepenom anksioznosti kod muškaraca. Marfi (Murphy, 1986) opisuje da su u zajednici pogođenoj vulkanskom erupcijom psihološki efekti dugotrajni uprkos upotrebi pozitivnih strategija prevladavanja i socijalne podrške. MekKamon i saradnici (McCammon, Durham, Allison, & Williamson, 1988) upoređuju strategije prevladavanja kod pripadnika spasilačkih službi nakon eksplozije zgrade i nakon tornada. Nakon tornada, obrasci prevladavanja se menjaju, pa tako osoba od prevladavanja usmerenog na problem postepeno prelazi na primenu prevladavanja usmerenog na emocije.

S obzirom na relativno mali broj istraživanja strategija prevladavanja stresa u vanrednim situacijama, kao i nedostatka istraživanja na našem području, odlučili smo da sprovedemo istraživanje kojim bi utvrdili primene strategija prevladavanja u vanrednim situacijama i povezanost s dimenzijom ličnosti eksplanatorni stil.

2. Metod

Sprovedeno je eksplorativno istraživanje na prigodnom uzorku studenata kojim smo ispitali povezanost i izraženost strategija prevladavanja i dimenzije eksplanatorni stil, tako što smo studente postavili u zamišljenu situaciju stresa usled vanredne situacije. Ispitali smo strukturu strategija prevladavanja na našem uzorku, povezanost dimenzije ličnosti eksplanatorni stil i strategija prevladavanja, kao i polne razlike

i razlike između studenata fakulteta prirodnog (tehničko-tehnološkog usmerenja) i fakulteta društvenog usmerenja.

2.1. Uzorak

U istraživanju je učestvovalo 303 ispitanika, od čega 53,1% čine osobe ženskog pola, dok muški ispitanici čine 46,9% uzorka. Uzrast ispitanika se kretao od 18 do 40 godina (AS = 22,56). Ispitanici su podeljeni u dve kategorije: studenti fakulteta prirodnog usmerenja (41,3%) i studenti fakulteta društvenog usmerenja (58,7%). Fakultete prirodnog usmerenja čine Mašinski (23,1%) i Šumarski fakultet (18.2%), a fakultete društvenog usmerenja Fakultet bezbednosti (42,6%) i Filozofski fakultet – smer Psihologija (16,2% ukupnog uzorka).

2.2. Instrumenti

Osnovne varijable u istraživanju, strategije prevladavanja stresa i dimenzija ličnosti eksplanatorni stil, ispitane su upotrebom upitnika s petostepenom Likertovom skalom. Za istraživanje dimenzije ličnosti eksplanatorni stil korišćeni su sledeći instrumenti: upitnik Test životne orijentacije – revidiran (*Life Orientation Test-Revised – LOTR*; Scheier, Carver, & Bridges, 1994) – dimenzija Dispozicioni optimizam; i upitnik Skala nade kod odraslih (*Adult Hope Scale – AHS*; Snyder et al., 1991) – dimenzija Nade. Za istraživanje strategija prevladavanja korišćeni su sledeći instrumenti: Upitnik načina suočavanja sa stresom (*Ways of Coping Questionnaire – WOCQ*; Folkman & Lazarus, 1988), i upitnik Indikatori strategija prevladavanja (*Coping Strategy Indicator – CSI*; Amirkhan, 1990). Svi upitnici su provereni na našem uzorku i revidirani. Uputstvo kod svakog upitnika prilagođeno je tako da ispitanike stavi u zamišljenu vanrednu situaciju. Tako je uputstvo za Upitnik načina suočavanja sa stresom glasilo (WOCQ): „Ovim upitnikom želimo da ispitamo kako se osećate i kako postupate u okolnostima koje vas uznemiruju, ugrožavaju, odnosno u situacijama koje doživljavate stresnim. Zamislite kako biste reagovali u nekoj vanrednoj situaciji (poplava, požar, zemljotres, itd.) i označite u kojoj meri biste koristili oblike ponašanja opisane u dole navedenim tvrdnjama...“ Uputstvo za upitnik

Indikatori strategija prevladavanja (CSI) glasilo je: „Pokušajte sada da se prisetite stresne situaciju u kojoj ste se nedavno našli, koja vam je predstavljala problem i zbog koje ste bili zabrinuti. To može biti bilo koja stresna situacija ili vanredna situacija (kao što su poplava, požar, i slično) iz vašeg ličnog iskustva, ili stresna situacija koju ne biste voleli da doživite u stvarnosti.“ Dobijeni podaci su obrađeni multivarijantnom statistikom, a zatim tumačeni.

3. Rezultati

3.1. Faktorska analiza

Kao prvi korak utvrdili smo pogodnosti korelacijske matrice za faktorizaciju pomoću Kaiser Meyer Olkinovog indeksa i Bartlettovog testa. Na osnovu dobijenih rezultata, vrednost KMO iznosi .746, a Bartletov test je statistički značajan ($p < .01$), što potvrđuje opravdanost primene faktorske analize.

Faktorskom analizom, metodom glavnih komponenti (s Promax rotacijom i Kaiser normalizacijom), izolovano je ukupno dvanaest faktora na svim upitnicima, a pouzdanosti su merene Kronbahovim alfa koeficijentom. Na Upitniku načina suočavanja sa stresom (WOCQ) izolovano je pet faktora: *Negiranje problema* (α = .755), *Magijsko mišljenje* (α = .761), *Aktivno rešavanje problema* (α = .756), *Rešavanje problema uz razvoj ličnosti* (α = .639), *Rešavanje problema uz pomoć drugih* (α = .690), dok su na upitniku Indikatori strategija prevladavanja (CSI) izolovana tri faktora: *Socijalna podrška* (α = .739), *Usmerenost na problem* (α = .669), *Povlačenje od problema* (α = .646). Na upitniku Test životne orijentacije (LOT) izolovana su dva faktora: *Optimizam* (α = .721) i *Pesimizam* (α = .539), a na upitniku Skala nade kod odraslih (AHS) takođe dva faktora: *Vera u sposobnost rešavanja problema* (α = .632) i *Unutrašnji oslonac* (α = .597).

Faktor *Negiranje problema* okuplja tvrdnje koje se odnose na negiranje postojanja stresora i prihvatanje situacije kakva jeste bez nastojanja da se bilo šta promeni. Takođe, ovaj faktor uključuje i različite aktivnosti (spavanje, putovanje, itd.) koje imaju za cilj da distanciraju osobu od razmišljanja o stresoru. Ajtemi koji pokazuju najveće zasićenje

faktora jesu: „Pomirio bih se s onim što se dogodilo, jer se ništa ne bi moglo učiniti" (.624), „Nastavio bih živeti kao da se ništa nije dogodilo" (.599), „Događaj bih prikazao nevažnim; ne bih stvar uzimao suviše ozbiljno" (.586).

Drugi faktor, *Magijsko mišljenje*, okuplja tvrdnje koje se odnose na uverenja osobe da je moguće iracionalnim putevima uspostaviti kontrolu nad događajima. Ajtemi koji su pokazali najveće zasićenje faktora jesu: „Samome sebi bih prebacivao ili prigovarao" (.691), „Želeo bih da situacija nestane ili se nekako okonča" (.579), „Obećao bih samom sebi da će sledeći put biti drugačije" (.574).

Faktor *Aktivno rešavanje problema* podrazumeva usmeravanje pažnje na problem i preduzimanje konkretnih aktivnosti za njegovo rešavanje, uz oslanjanje na prethodna iskustva. Ajtemi koji pokazuju najveće zasićenje faktora jesu: „Izradio bih plan delovanja i sledio ga" (.643), „Oslonio bih se na prošla iskustva: već sam bio u sličnoj situaciji" (.643), „Pronašao bih nekoliko različitih rešenja problema" (.589).

Faktor *Rešavanje problema uz razvoj ličnosti* podrazumeva tendenciju osobe da se suoči sa stresom tako što će iz date situacije izvući pozitivne aspekte koji će doprineti njenom ličnom razvoju, u smislu lične promene i zrelosti. Ajtemi koji pokazuju najveće zasićenje faktora jesu: „Sazreo bih kao ličnost i/ili bih se promenio kao osoba" (.739), „Govorio bih samom sebi stvari koje bi mi pomogle da se bolje osećam" (.612), „Ponovno bih otkrio šta je u životu važno" (.540).

Faktor *Rešavanje problema uz pomoć drugih* podrazumeva traženje emocionalne i instrumentalne podrške, odnosno sposobnost posmatranja situacije iz perspektive drugih i traženje razumevanja i empatije od strane okoline, kao i pomoći i saveta u vezi s problemom. Ajtemi koji pokazuju najveće zasićenje faktora jesu: „Pokušao bih stvari sagledati s tuđeg gledišta" (.659), „Zamišljao bih kako bi u takvoj situaciji postupila osoba kojoj se divim i time bih se ravnao" (.580), „Potražio bih stručnu pomoć" (.577).

Faktor *Socijalna podrška* predstavljen je tvrdnjama koje se odnose na traženje emocionalne podrške i pomoći od strane prijatelja, stručnjaka i drugih ljudi: „Tražio sam podršku onih koji me najbolje poznaju" (.774), „Potražio sam prijatelja da mi pomogne da se osećam bolje u vezi

s problemom" (.715), „Otišao sam kod nekog (prijatelja ili stručnjaka) kako bi mi pomogao da se bolje osećam" (.653).

Faktor *Usmerenost na problem* predstavljen je pomoću tvrdnji koje se odnose na pažljivo promišljanje i traženje različitih načina za rešavanje problema: „Trudio sam se da smislim što je moguće više rešenja pre nego što sam odlučio šta da radim" (.743), „Čvrsto sam stao i borio se za ono što sam najvše želeo u toj situaciji" (.674), „Smišljao sam plan akcije za suočavanje sa problemom" (.642).

Faktor *Povlačenje od problema* predstavljen je pomoću tvrdnji koje se odnose na distanciranje od problema i izbegavanje suočavanja s problemom: „Želeo sam prosto da me ljudi ostave na miru" (.725), „Provodio sam u samoći više vremena nego obično" (.716), „Sanjario sam o boljim vremenima" (.595).

Faktor *Optimizam* predstavljen je pomoću tvrdnji koje se odnose na sklonost da se očekuje najbolji mogući ishod u datoj situaciji, kao i postojanje nade i „uzdanje" u budućnost: „U neizvesnim situacijama obično očekujem najbolji ishod" (.810), „Uglavnom očekujem da će mi se desiti više dobrih nego loših stvari" (.792), „Uvek sam optimista po pitanju svoje budućnosti" (.792).

Faktor *Pesimizam* predstavljen je pomoću tvrdnji koje se odnose na sklonost da se stvari posmatraju negativno, uz očekivanje najgoreg ishoda: „Ako stvari mogu da krenu naopako po mene, sigurno će krenuti" (.823), „Gotovo nikada ne očekujem da će se stvari odvijati onako kako ja želim" (.724), „Retko računam s tim da će mi se desiti dobre stvari" (.536).

Faktor *Vera u sposobnost rešavanja problema* predstavnjen je pomoću tvrdnji koje se odnose na sposobnost pronalaženja raznih načina za rešavanje problema kako bi se postigao najbolji mogući ishod i dobile željene stvari: „Mogu da smislim mnogo načina da se izvučem iz problema" (.712), „Postoji mnogo načina za rešavanje bilo kog problema" (.660), „Čak i kada se drugi obeshrabre, znam da mogu pronaći način da rešim problem" (.619).

Faktor *Unutrašnji oslonac* predstavljen je pomoću tvrdnji koje podrazumevaju brigu u smislu lične odgovornosti, kao i stremljenje ka ciljevima: „Često brinem o nečemu" (.685), „Brinem se za svoje zdravlje" (.639), „Energično sledim svoje ciljeve" (.545).

3.2. Deskriptivna statistika faktora

U Tabeli 1 prikazane su vrednosti dobijenih faktora. Dimenzija koja je ostvarila najveću prosečnu vrednost, a tiče se skale WOCQ jeste *Aktivno rešavanje problema* (AS = 3,57), dok je najmanju prosečnu vrednost ostvarila dimenzija *Negiranje problema* (AS = 2,49). Najveću vrednost na skali CSI ostvarila je *Usmerenost na problem* (AS = 3,50), dok je najmanju vrednost ostvarila dimenzija *Povlačenje od problema* (AS = 2,89). Na skali LOT, veću prosečnu vrednost ostvario je *Optimizam* (AS = 3,42) od *Pesimizma* (AS = 2,72). Što se tiče skale AHS, obe dimenzije su ostvarile značajno visoke vrednosti, najveće u odnosu na sve ostale skale: *Unutrašnji oslonac* (3,63) i *Vera u sposobnost rešavanja problema* (3,61).

Tabela 1. Deskriptivna statistika izolovanih faktora

	N	Min	Max	AS	SD
Negiranje problema (WOC)	303	1,2	4,3	2,49	0,64
Magijsko mišljenje (WOC)	303	1,5	4,7	3,09	0,69
Aktivno rešavanje problema (WOC)	303	1,9	5,0	3,57	0,66
Rešavanje problema uz razvoj ličnosti (WOC)	303	1,0	5,0	3,35	0,78
Rešavanje problema uz pomoć drugih (WOC)	303	1,2	4,7	3,34	0,66
Socijalna podrška (CSI)	303	1,0	5,0	3,45	0,93
Usmerenost na problem (CSI)	303	1,2	5,0	3,50	0,79
Povlačenje od problema (CSI)	303	1,0	5,0	2,89	0,87
Optimizam (LOT)	303	1,0	5,0	3,42	0,98
Pesimizam (LOT)	303	1,0	5,0	2,72	0,91
Vera u sposobnost rešavanja problema (AHS)	303	1,3	5,0	3,61	0,76
Unutrašnji oslonac (AHS)	303	1,3	4,8	3,63	0,68

3.3. Povezanost dimenzija ličnosti i strategija prevladavanja

U Tabeli 2 prikazane su povezanosti između dimenzije Dispozicioni optimizam i strategija prevladavanja. Sve strategije prevladavanja su pozitivno povezane s Optimizmom sem Negiranja problema, koje

je negativno nisko povezano, i Magijskog mišljenja i Povlačenja od problema, koji nisu statistički značajno povezani. Strategije prevladavanja koje su pozitivno povezane s Optimizmom takođe su negativno povezane s Pesimizmom, a Negiranje problema obrnuto. Magijsko mišljenje je negativno povezano s Pesimizmom, a Povlačenje od problema nije statistički značajno povezano.

Tabela 2. Povezanost dimenzije Dispozicioni optimizam i strategija prevladavanja

	Optimizam	Pesimizam
WOC Negiranje problema	-,147*	,135*
WOC Magijsko mišljenje	0,058	-,201**
WOC Aktivno rešavanje problema	,327**	-,159**
WOC Rešavanje problema uz razvoj ličnosti	,300**	-,262**
WOC Rešavanje problema uz pomoć drugih	,204**	-,206**
CSI Socijalna podrška	,187**	-,146*
CSI Usmerenost na problem	,344**	-,117*
CSI Povlačenje od problema	-0,060	0,029

Napomena: *p < .05, **p < .01

U Tabeli 3 prikazane su povezanosti između dimenzije Nada i strategija prevladavanja. Sve strategije prevladavanja su pozitivno povezane s oba faktora Nade, sem Negiranja problema, koje je negativno nisko povezano, i Magijskog mišljenja i Povlačenja od problema, koji nisu statistički značajno povezani.

Tabela 3. Povezanost dimenzije Nade i strategija prevladavanja

	Vera u sposobnost rešavanja problema	Unutrašnji oslonac
WOC Negiranje problema	-,214**	-,228**
WOC Magijsko mišljenje	0,037	0,044
WOC Aktivno rešavanje problema	,351**	,191**
WOC Rešavanje problema uz razvoj ličnosti	,153**	,267**

WOC Rešavanje problema uz pomoć drugih			,140*	,192**
CSI Socijalna podrška			,131*	,153**
CSI Usmerenost na problem			,302**	,244**
CSI Povlačenje od problema			-0,057	0,024

Napomena: *p < .05, **p < .01

3.4. Ispitivanje razlika među grupama

T-test analizom ispitano je da li postoji razlika prema polu u odnosu na izolovane faktore, kao i razlika prema vrsti fakulteta. U Tabeli 4 može se videti da postoje statistički značajne razlike između pola i svih ispitivanih dimenzija, sem dimenzije *Povlačenje od problema*. Uglavnom su veće vrednosti prisutne kod devojaka, sem Negiranja problema i Pesimizma koji su izraženiji kod mladića.

Tabela 4. Razlike između pola i skala korišćenih u istraživanju

		N	AS	SD	F	t	df	p
Negiranje problema	mladići	142	**2,68**	0.648	1.927	5.144	301	0.000
	devojke	161	2,32	0.575				
Magijsko mišljenje	mladići	142	3,00	0.626	1.864	-2.098	301	0.037
	devojke	161	**3,17**	0,726				
Aktivno rešavanje problema	mladići	142	3,47	0,644	0,270	-2,414	301	0,016
	devojke	161	**3,65**	0,658				
Rešavanje problema uz razvoj ličnosti	mladići	142	3,06	0,767	3,590	-6,535	301	0,000
	devojke	161	**3,61**	0,696				
Rešavanje problema uz pomoć drugih	mladići	142	3,16	0,582	0,004	-2,925	301	0,004
	devojke	161	**3,34**	0,605				
Socijalna podrška	mladići	142	3,24	0,904	1,321	-3,783	301	0,000
	devojke	161	**3,64**	0,915				

		N	AS	SD	F	t	df	p
Usmerenost na problem	mladići	142	3,38	0,815	1,220	-2,476	301	0,014
	devojke	161	**3,61**	0,759				
Povlačenje od problema	mladići	142	2,92	0,821	1,742	0,600	301	0,549
	devojke	161	2,86	0,910				
Optimizam	mladići	142	3,25	1,006	1,675	-2,872	301	0,004
	devojke	161	**3,56**	0,925				
Pesimizam	mladići	142	**2,90**	0,868	0,649	3,358	301	0,001
	devojke	161	2,56	0,911				
Vera u sposobnost rešavanja problema	mladići	142	3,47	0,843	15,175	-3,010	301	0,003
	devojke	161	**3,73**	0,653				
Unutrašnji oslonac	mladići	142	3,43	0,720	4,225	-4,899	301	0,000
	devojke	161	**3,80**	0,594				

U Tabeli 5 može se videti da postoje razlike između studenata prirodnih i društvenih fakulteta. Naime, rezultati pokazuju da statistički značajne razlike postoje u pogledu svih dimenzija, sem dimenzije *Povlačenje od problema*, gde ne postoje statistički značajne razlike. Studenti društvenih fakulteta pokazuju izraženije sve strategije prevladavanja sem Negiranja problema, koji je izraženiji kod studenata prirodnih fakulteta. Kod studenata društvenih fakulteta, takođe su izraženiji faktori Nade i Optimizam, a Pesimizam je izraženiji kod studenata prirodnih fakulteta.

Tabela 5. Razlike između studenata društvenih i prirodnih fakulteta

		N	AS	SD	F	t	df	p
Negiranje problema	društveni	178	2,31	0,587	0,031	-6,443	301	0,000
	prirodni	125	**2,76**	0,612				
Magijsko mišljenje	društveni	178	**3,23**	0,715	2,722	4,226	301	0,000
	prirodni	125	2,90	0,592				
Aktivno rešavanje problema	društveni	178	**3,74**	0,626	0,004	5,664	301	0,000
	prirodni	125	3,32	0,626				

Rešavanje problema uz razvoj ličnosti	društveni	178	**3,63**	0,656	5,68	8,475	301	0,000
	prirodni	125	2,94	0,762				
Rešavanje problema uz pomoć drugih	društveni	178	**3,34**	0,541	0,003	3,336	301	0,001
	prirodni	125	3,13	0,529				
Socijalna podrška	društveni	178	**3,65**	0,907	1,521	4,564	301	0,000
	prirodni	125	3,17	0,892				
Usmerenost na problem	društveni	m 178	**3,65**	0,724	4,299	4,003	301	0,000
	prirodni	125	3,29	0,840				
Povlačenje od problema	društveni	178	2,83	0,873	0,077	-1,348	301	0,179
	prirodni	125	2,97	0,860				
Optimizam	društveni	178	**3,66**	0,890	2,773	5,328	301	0,000
	prirodni	125	3,07	0,994				
Pesimizam	društveni	178	2,47	0,888	2,278	-6,121	301	0,000
	prirodni	125	**3,08**	0,809				
Vera u sposobnost rešavanja problema	društveni	178	**3,78**	0,628	21,66	4,810	301	0,000
	prirodni	125	3,37	0,859				
Unutrašnji oslonac	društveni	178	**3,85**	0,538	11,538	7,241	301	0,000
	prirodni	125	3,32	0,741				

S obzirom na slične nalaze razlike među grupama po polu i fakultetima, proverili smo raspodelu uzorka prema datim varijablama (v. Tabela 6) i uočili neravnomernu zastupljenost pola na poduzorcima prirodnih i društvenih fakulteta.

Tabela 6. Ukršteni prikaz varijablii fakulteta i pola

		Fakulteti		Ukupno
		Društveni	Prirodni	
Pol	M	35	107	142
	Ž	143	18	161
Ukupno		178	125	303

4. Diskusija

U radu smo ispitali reakcije studenata na zamišljenu vanrednu situaciju na testovima koji mere strategije prevladavanja stresa i dimenzije Dispozicionog optimizma i Nade, kao pokazatelja eksplanatornog stila. Na našem prigodnom uzorku dobili smo faktorsku strukturu koja nalikuje rezultatima drugih istraživača. Struktura na Upitniku načina suočavanja sa stresom izvorno je sledeća (Folkman & Lazarus, 1988): Suočavanje konfrontiranjem (engl. *Confrontive coping*), Distanciranje (engl. *Distancing*), Samokontrola (engl. *Self-controlling*), Traženje socijalne podrške (engl. *Seeking social support*), Prihvatanje odgovornosti (engl. *Accepting responsibility*), Bežanje – izbegavanje (engl. *Escape-Avoidance*), Planirano rešavanje problema (engl. *Planful problem-solving*) i Pozitivna ponovna procena (engl. *Positive reappraisal*). Istraživanja u kojima je korišćen Upitnik načina suočavanja sa stresom dobijene su različite faktorske strukture (Rexrode, Petersen, & O'Toole, 2008). Na našem uzorku smo izdvojili sledeće faktore: Negiranje problema, Magijsko mišljenje, Aktivno rešavanje problema, Rešavanje problema uz razvoj ličnosti, Rešavanje problema uz pomoć drugih. Sličnu strukturu nalazimo kod autora Sorli i Sekton (Sorlie & Sexton, 2001): Mišljenje usmereno na ispunjavanje želja (engl. *Wishful thinking*), Orijentisanost na cilj (engl. *Goal oriented*), Traženje podrške (engl. *Seeking support*), Razmišljanje o problemu (engl. *Thinking it over*) i Izbegavanje (engl. *Avoidance*). Približno sličnu strukturu nalazimo u istraživanju rađenom na tri različita uzorka (Vitaliano, Russo, Carr, Maiuro & Becker, 1985): Fokusiranje na problem (engl. *Problem-Focused*), Mišljenje usmereno na ispunjavanje želja (engl. *Wishful thinking*), Traženje socijalne podrške (engl. *Seeking social support*), Samookrivljavanje (engl. *Blamed Self*) i Izbegavanje (engl. *Avoidance*). Prilikom imenovanja faktora odlučili smo se za detaljnije nazive koji bolje odražavaju smisao dobijenih faktora.

Struktura upitnika Indikatori strategija prevladavanja (Amirkhan, 1990) izvorno sadrži tri faktora: Rešavanje problema, Traženje socijalne podrške i Izbegavanje. U našem istraživanju dobili smo takođe tri faktora koje smo nazvali: Socijalna podrška, Usmerenost na problem i Povlačenje od problema. Dosadašnja istraživanja uglavnom potvrđuju trofaktorsku strukturu, s tim što se faktor Izbegavanje pokazuje kao heterogen (Žuljević, Jovanović i Gavrilov-Jerković, 2015). Provera upitnika na uzorku grčke populacije pokazala je strukturu s četiri faktora: Rešavanje problema, Traženje socijalne podrške, Izbegavanje – odvraćanje i Izbegavanje – povlačenje (Togas & Alexias, 2018), što potvrđuje heterogenost faktora Izbegavanje.

Test životne orijentacije – revidiran (*LOT-R*) namenjen je merenju Dispozicionog optimizma, zamišljenog kao jedne dimenzije, koja predstavlja kontinuum između optimizma i pesimizma (Scheier & Carver, 1985; Scheier, Carver, & Bridges, 1994). Na našem uzorku smo dobili dvofaktorsku strukturu s Optimizmom i Pesimizmom kao zasebnim faktorima. Dvofaktorska sturktura je dobijena i u mnogim pređašnjim istraživanjima (Ferrando, Chico & Tous, 2002; Gaspar, Ribeiro, Matos, Leal, & Ferreira, 2009; Ottati & Noronha, 2017; Villarroel, Rubio, & Atenas, 2009).

Upitnik Skala nade kod odraslih (*AHS*) meri konstrukt koji se odnosi na sposobnost da se pronađu alternativni načini postizanja ciljeva kada situacija onemogućava uobičajene načine postizanja istih (Snyder et al., 1991; Snyder et al., 2005). Izvorno, skala meri dva faktora: Načini rešavanja problema (engl. *Pathways thinking*) i Sposobnost rešavanja problema (engl. *Agency thinking*). Na našem uzorku se potvrdila dvofaktorska struktura, a faktore smo nazvali Vera u sposobnost rešavanja problema i Unutrašnji oslonac. Smatramo da ovi nazivi bolje odražavaju značenja merene dispozicije.

Na našem uzorku smo dobili izraženije strategije prevladavanja koje su usmerene na rešavanje problema (od viših ka nižim vrednostima: Aktivno rešavanje problema, Usmerenost na problem, Socijalna podrška, Rešavanje problema uz razvoj ličnosti, Rešavanje problema uz pomoć drugih). Najmanje su u upotrebi strategije koje su usmerene na izbegavanje (Negiranje problema, Povlačenje od problema, Magijsko

mišljenje). Rezultati brojnih studija se poklapaju s dobijenim rezultatima. Tako je u istraživanjima Mavar (2009) i Vuletić-Prtorić (2002) potvrđeno da strategije prevladavanja usmerene na problem predstavljaju najčešće korišćenje strategije, kao i najefikasnije, i to u situacijama kada osoba procenjuje da ima kontrolu nad stresnim događajem i njegovim ishodima. Navedeni rezultati pokazuju da je adekvatnije deliti strategije prevladavanja na angažovano ili pristupajuće prevladavanje (engl. *engagement or approach coping*), usmereno na suočavanje sa stresorom i osećanjima povezanim s datom situacijom, i neangažovano ili izbegavajuće prevladavanje (engl. *disengagement or avoidance coping*) usmereno na izbegavanje stresora i osećanja povezanih s istim (Skinner, Edge, Altman, & Sherwood, 2003).

U pogledu ispitanih povezanosti između strategija prevladavanja i dimenzije Dispozicioni optimizam, dobijeni su rezultati po kojima Optimizam pozitivno korelira sa strategijama prevladavanja usmerenim na problem, dok pesizmizam korelira sa strategijama prevladavanja izbegavanjem problema (Scheier, Carver, & Bridges, 2001; Scheier, Weintraub, & Carver, 1987). Kada se posmatra vrsta stresora, optimizam je bolji prediktor prevladavanja usmerenog na problem kod kontrolabilnih stresora kao što je akademski uspeh, i prevladavanja usmerenog na emocije kod nekontrolabilnih stresora, kao što su traume (Solberg Nes & Segerstrom, 2006). Istraživanja pokazuju da optimizam i socijalne mreže imaju uzajamno potkrepljujuće efekte (Segerstrom, 2007), što objašnjava približno slične vrednosti dobijene na strategijama usmerenim na problem i strategijama traganja za socijalnom podrškom. Drugim rečima, i strategije usmerene na socijalnu podršku zapravo su usmerene na rešavanje problema uz podršku drugih ljudi, kako smo formulisali u nazivu faktora. Pesimizam, za razliku od optimizma, usmerava ljude na samoporažavajuće obrasce ponašanja koji vode izbegavajućim strategijama prevladavanja i ponašanjima koja ugrožavaju lično zdravlje i blagostanje (Carver, Scheier, & Segerstrom, 2010).

Između strategija prevladavanja i dimenzije Nade, istraživanja pokazuju dinamičan i recipročan odnos (Folkman, 2014). Povećani nivo nade može promovisati strategije prevladavanja (Yucens at all., 2019). Rezultati našeg istraživanja pokazuju da su najizraženije povezanosti između Aktivnog rešavanja problema i Vere u sposobnost rešavanja pro-

blema, te Rešavanja problema uz razvoj ličnosti i Unutrašnjeg oslonca, što potvrđuje pretpostavku autora skale da se prva dimenzija Nade više odnosi na sposobnosti, dok se druga dimenzija više odnosi na motivacionu komponentu (Snyder, Rand, & Sigmon, 2005). Na kraju, da pomenemo da su nalazi istraživanja dimenzije Nade uglavnom slični nalazima istraživanja dimenzije Dispozicioni optimizam (Aspinwall, Richter, & Hoffman, 2001).

Razlike u pogledu pola na našem uzorku pokazale su da su veće vrednosti prisutne kod devojaka za strategije prevladavanja usmerene na rešavanje problema i socijalnu podršku, optimizam i dimenzije Nade, dok su kod mladića izraženiji Negiranje problema i Pezimizam. Slične nalaze iznosi Mavar (2009), po kome žene u većoj meri od muškaraca primenjuju prevladavanje usmereno na problem. Kod studenata je u većoj meri izražena tendencija ka upotrebi strategija koje su usmerene na izbegavanje nego kod studentkinja (Cabras & Mondo, 2018). Pokazalo se, takođe, da su žene pri suočavanju sa stresnim događajima više usmerene na emocije i traženje socijalne podrške (Amirkhan, 1990; Bijttebier & Vertommen, 1997; Long, 1990). Međutim, ima i drugačijih nalaza, da studenti pokazuju veće vrednosti u Rešavanju problema, a studentkinje u Izbegavanju (Ager & Maclachlan, 1998).

Razlike u pogledu vrste fakulteta možemo tumačiti kao razlike u pogledu pola s obzirom da poduzorak društvenih fakulteta većinom čine studentkinje, a prirodnih studenti. Međutim, možemo pretpostaviti da i druge dimenzije ličnosti učestvuju u izboru fakulteta, tako da se dobijene razlike mogu tumačiti i nezavisno od preklapanja s polom. Studenti društvenih fakulteta imaju izraženije sve strategije prevladavanja sem Negiranja problema, koji je izraženiji kod studenata prirodnih fakulteta. Kod studenata društvenih fakulteta takođe su izraženiji svi faktori dimenzije eksplanatorni stil sem Pesimizma, koji je izraženiji kod studenata prirodnih fakulteta. Ovo se objašnjava time što studenti fakulteta društvenog usmerenja u mnogo većoj meri izučavaju ponašanja ljudi i njihove reakcije na stresne i slične situacije. Kod studenata fakulteta prirodnog usmerenja možemo pretpostaviti da nedostatak poznavanja ljudskih obrazaca ponašanja i reagovanja na vanredne situacije izaziva blokadu i usmerava na izbegavanje suočavanja s problematičnim situacijama. Takođe, može se pretpostaviti da je kod studenata prirod-

nih fakulteta više izražena upotreba konvergentnog načina rešavanja problema. To može da objasni izraženiji Pesimizam kod njih, jer usmerenost na samo jedan način rešavanja problema sužava perspektivu sagledavanja problema, dok studenti društvenih fakulteta imaju sklonost da na više načina tragaju za adekvatnim rešenjem problema. Moguće je da je konvergentan način mišljenja studenata prirodnog fakulteta prisutan samo kod problema vezanih za socijalne situacije, dok drugačije pristupaju problemima iz oblasti prirodnih nauka.

Na kraju treba napomenuti da su rezultati ovog istraživanja dobijeni na prigodnom uzorku i da ih, stoga, možemo uzeti kao pokazatelje određenih trendova koji bi se ispitali u narednim istraživanjima.

5. Zaključak

Rezultati ovog istraživanja pokazali su da strategije prevladavanja koje studenti najčešće koriste jesu Aktivno rešavanja problema, Usmerenost na problem i Socijalna podrška, iako su vrednosti navedenih dimenzija umereno izražene. Ovakvi nalazi su u skladu s rezultatima drugih istraživanja. Studenti pokazuju izraženiji Optimizam naspram Pesimizma i izražene dimenzije Nade, što je takođe u skladu s rezultatima drugih istraživanja i potvrđuje povezanost datih dimenzija ličnosti sa strategijama prevladavanja usmerenim na problem, uključujući i one sa socijalnom podrškom. Studentkinje pokazuju izraženije vrednosti na strategijama i dimenzijama ličnosti usmerenim na angažovano suočavanje s vanrednim situacijama. Isto važi i za studente društvenih fakulteta što se može objasniti činjenicom da studentkinje čine većinu na tim fakultetima, ali se mogu uzeti i drugi faktori koji utiču na izbor fakulteta, posebno određene dimenzije ličnosti.

Dobijene povezanosti potvrđuju da je podela strategija prevladavanja na angažovane i neangažovane adekvatnija i upotebljivija u svakom pogledu. Time se pravi razlika između aktivnog hvatanja ukoštac s problemom i angažovanja svih unutrašnjih resursa u savladavanju problema, i pasivnog prepuštanja i izbegavanja problema sa svim negativnim posledicama koje to donosi. Razlikovanje između strategija usmerenih na problem i usmerenih na emocije nije adekvatna, jer se preklapaju realnosti na koje se strategije odnose. Usmerenost na problem ne znači

da emocije ne učestvuju. Pre se može pretpostaviti da osobe s Optimizomom i Nadom imaju adekvatnu toleranciju na frustracije i umesto da se prepuštaju negativnim scenarijima koje vanredna situacija izaziva, aktivno se suočavaju s problemom, a adekvatna rešenja dovode do pozitivnih emocija. Usmerenost na emocije takođe ne znači da se osobe ne bave problemom, one ga sagledavaju iz pesimističke perspektive bez vere u sposobnost rešavanja problema. Drugim rečima, pošto ne vide izlaz iz situacije, oni izbegavaju i problem i negativne emocije tako što pokušavaju da ignorišu vanrednu situaciju u kojoj su se našli.

Razlike prema fakultetima i polu, koje postoje u upotrebi strategija prevladavanja, predstavljaju pokazatelj obrazovno-vaspitnim ustanovama da postoji potreba za angažovanijim pristupom u sticanju kompetencija za aktivno suočavanje s vanrednim situacijama, a posebno kod studenata fakulteta prirodnih usmerenja i muškaraca. Vanredne situacije pogađaju sve slojeve stanovništa, a nisu svi podjednako pripremljeni za suočavanje s njima. Stoga su istraživanja strategija prevladavanja i povezanih dimenzija ličnosti značajna kao deo sveobuhvatnih priprema za adekvatan odgovor društvene zajednice na vanredne situacije.

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STRESS COPING STRATEGIES IN EMERGENCY SITUATIONS AMONG STUDENTS

Abstract: The study examines the coping strategies structure, the relationship between explanatory style as a personality dimension and coping strategies, as well as gender differences and differences between students of social sciences and engineering students in Belgrade. The sample consisted of 303 respondents. The explanatory style was operationalized as the dimensions of Dispositional Optimism and Hope. The measures used were the Life Orientation Test - Revised (LOTR) and Adult Hope Scale (AHS). Coping strategies were measured using the Ways of Coping Questionnaire (WOCQ) and the Coping Strategies Indicators (CSI). Factor analysis isolated a total of twelve factors on all questionnaires, which is consistent with the findings of previous studies. The results show that engagement coping strategies are more frequently employed. The correlations between Dispositional optimism and coping strategies, as well as Hope and coping strategies, was confirmed. Among women and students of social sciences the values observed are statistically significant. The obtained results indicate the need for a more active role of educational institutions enabling individuals to acquire competencies for active coping with emergency situations, especially men and applied sciences students.

Key words: emergencies, coping strategies, dispositional optimism, hope, students.

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1. Introduction

Emergency situations involve various risks and circumstances that result in human and material losses (Živković, 2009, as cited in Živković, Čabarkapa & Mlađan, 2011). Psychological reactions to emergency situations include the fear for one's life and a psychological imbalance that arises when individuals perceive a discrepancy between the physical or psychological demands of an emergency situation and their own resources. Emergency situations are as a rule unexpected and catch people unawares, so the individual experience of stress can be very intense, and a person's ability to cope with the emergency at the moment may be limited. Individual reactions during emergency situations depend on a number of factors, or resources. Stress coping strategies / crisis coping mechanisms have a major role as processes that help restore psychological balance; personality dimensions such as explanatory style, on the other hand, can also be a significant resource.

One of the most widespread definitions of stress coping was proposed by Lazarus and Folkman (2004, p. 145). According to them, coping is "a dynamic and lasting cognitive and behavioral effort to cope with specific external and/or internal demands, which are appraised as burdensome or difficult to the extent that they exceed the resources available to the person". The researchers distinguish between problem-focused coping and emotion-focused coping. Problem-focused coping strategies involve identifying the problem, looking for alternative solutions, weighing certain possibilities in terms of loss or gain, choosing a solution, and taking action (Wang & Saudino, 2011). In contrast, emotion-focused coping strategies involve avoiding, minimizing and distancing negative events, regulating affect, maintaining hope and optimism, and refusing to accept the worst (Zotović, 2004).

Carver and coworkers (Carver, Scheier, & Weintraub, 1989) proposed thirteen coping techniques: active coping, planning, suppression of competing activities, restraint, use of instrumental support, focus on and venting of emotions, mental disengagement, positive reinterpretation and growth, denial, religious coping, humour, behavioural disengagement, use of social support. Some researchers put emphasis on avoidance-style measures (Elliot, Thrash, & Murayama, 2011); others

point to multiple strategies, such as problem-solving, use of social support and avoidance (Amirkhan, 1990).

In order to discover the resources that contribute to the positive outcome of stress coping techniques, researchers have analyzed different personality dimensions (Genc, Pekić & Matanović, 2013). One of the important constructs related to stressful situations is the attributional or explanatory style. Explanatory style is the tendency to offer similar explanations for different events (Buchanan & Seligman, 1995). The parameters of explanatory style are internality/externality, stability/instability, and globality/specificity (Abramson, Seligman, & Teasdale, 1978). According to these parameters, we can distinguish between pessimistic and optimistic explanatory styles (Seligman, 1991). The pessimistic style of interpreting events is characterized by internality, stability and globality, and the optimistic style is characterized by externality, instability and specificity.

Explanatory style refers to the tendency to interpret everyday events from a pessimistic or optimistic angle. This tendency should not be equated with a personality trait such as dispositional optimism (Carver & Scheier, 2014). Explanatory style is operationalized through the dimension of optimism/pessimism, as in the Life Orientation Test (Scheier, Carver, & Bridges, 1994), or through the dimension of Hope, as in the Hope Scale for Adults (Snyder et al., 1991). Hope has been shown to be close to the construct of optimism (Carver & Scheier, 2014). In stressful situations, when the intended goal cannot be achieved, hope helps people find alternative paths towards achieving their goals (Snyder, Rand, & Sigmon, 2005).

Multiple studies have shown that optimists make use of problem-focused coping in situations when they feel they can control the source of stress. However, in the face of loss, they tend to use emotion-focused coping and maintain a positive outlook (Genc, 2014). Pessimists, on the contrary, tend to use avoidance behaviours (Thompson & Gaudreau, 2008, as cited in Genc, Pekić & Matanović, 2013). Research has confirmed the existance of a high negative correlation between optimism, on the one hand, and depression, alienation and hopelessness, on the other (Oláh, 2005, as cited in Genc, Pekić & Matanović, 2013).

Some of the studies address the issue of stress coping in natural or technological disasters. Baum and coworkers (Baum, Fleming, & Singer, 1983) came to the conclusion that people who survived a technological disaster use problem-focused coping strategies to a greater extent, rather than emotion-focused coping strategies. Stewart's study (1986) showed that in the case of tornadoes, the use of problem-focused coping strategies positively correlates with a lower degree of anxiety among men and with fewer referrals to health care units among women; emotion-focused coping, however, correlates with a higher degree of anxiety among men. Murphy's study (1986) demonstrates that in a community affected by a volcanic eruption, the psychological effects are long-lasting despite the use of positive coping strategies and social support. McCammon and coworkers (McCammon, Durham, Allison, & Williamson, 1988) compared the coping strategies of emergency responders after a building explosion and after a tornado. After a tornado, coping patterns change, so that individuals gradually shift from problem-focused coping to emotion-focused coping.

Considering the relatively low number of studies on stress coping strategies in emergency situations, as well as the lack of relevant research in Serbia, this study was conducted with the aim of identifiying stress coping strategies in emergency situations and their relationship with explanatory style as a personality dimension.

2. Method

An exploratory study was conducted on an adequate sample of university students. The relationship between coping strategies and explanatory style was examined, by placing students in an imaginary stressful situation due to an emergency. The following aspects were analyzed: the structure of coping strategies, the relationship between explanatory style and coping strategies, gender differences and differences between the students of applied sciences (engineering) and the students of social sciences.

2.1. Sample

There were 303 respondents, of which 53.1% were female, and 46.9% were male. The respondents' age range was 18 – 40 (AS = 22.56). The respondents were divided into two categories: engineering students (41.3%) and students of social sciences (58.7%). Engineering students category included students of the Faculty of Mechanical Engineering (23.1%) and Faculty of Forestry (18.2%). Social sciences students category included students of the Faculty of Security (42.6%) and the Faculty of Philosophy, majoring in Psychology (16.2% of the total sample).

2.2. Instruments

The basic variables in the research, stress coping strategies and explanatory style, were examined using a questionnaire with a five-point Likert scale. The following instruments were used to investigate the explanatory style personality dimension: Life Orientation Test-Revised (LOTR; Scheier, Carver, & Bridges, 1994) - Dispositional Optimism dimension, and Adult Hope Scale (AHS; Snyder et al., 1991) - dimension of Hope. The following instruments were used to investigate coping strategies: Ways of Coping Questionnaire (WOCQ; Folkman & Lazarus, 1988), and Coping Strategy Indicator (CSI; Amirkhan, 1990). All questionnaires were checked on the sample and revised. The instructions for each questionnaire were adapted so as to require respondents to imagine themselves in an emergency situation. For instance, the instructions for Ways of Coping with Stress Questionnaire (WOCQ) read: "This questionnaire examines how you feel and act in disturbing or harmful circumstances, i.e., in situations that you perceive as stressful. Imagine how you would react in an emergency situation (flood, fire, earthquake, etc.) and indicate the extent to which you would use the behaviors described in the statements below..." The instructions for the Coping Strategy Indicators (CSI) questionnaire read: "Try to recall a recent stressful situation, which had you troubled and worried. It can be any stressful situation or emergency (such as a flood, fire, etc.) from your personal experience, or a stressful situation that you would not like to experience in reality." The obtained data were processed with multivariate statistics and then interpreted.

3. Results

3.1. Factor Analysis

The first step was to determine the suitability of the correlation matrix for factorization using the Kaiser Meyer Olkin Index and the Bartlett Test. Based on the obtained results, the KMO value is .746, and Bartlett Test is statistically significant (p < .01), which justifies the application of factor analysis.

Using factor analysis and principal components method (with Promax rotation and Kaiser normalization), a total of twelve factors were isolated on all questionnaires, and reliabilities were measured by Cronbach's alpha coefficient. Five factors were taken from the Ways of Coping Questionnaire (WOCQ): *Denial* (α = .755), *Magical Thinking* (α = .761), *Active Problem Solving* (α = .756), *Problem Solving with personality development* (α = .639), *Problem Solving with the help of others* (α = .690). The Coping Strategy Indicators (CSI) measure consists of three factors: *Seeking Social Support* (α = .739), *Problem-Focused* (α = .669), *Withdrawal* (α = .646), all of which were included. Two factors were taken from the Life Orientation Test (LOT): *Optimism* (α = .721) and *Pessimism* (α = .539), and two more from the Adult Hope Scale (AHS): *Faith in One's Problem-Solving Ability* (α = .632) and *Internal Support* (α = .597).

The *Denial* subscale consists of statements that deny the existence of the stressor and accept the situation as it is without trying to change anything. This subscale also includes various activities (sleeping, traveling, etc.) that aim to distract the individual from thinking about the stressor. The items with the highest factor saturation are: "I would accept whatever happened, because there wouldn't be anything I could do" (.624), "I would go on as if nothing had happened" (.599), "I would attach little importance to the event; I wouldn't take the matter too seriously" (.586).

The second subscale, *Magical Thinking*, consists of statements related to one's belief that it is possible to establish control over events by irrational means. The items that showed the highest factor saturation are: "I would upbraid or blame myself" (.691), "I would like the situation to disappear or come to an end somehow" (.579), "I would promise myself that next time it would be different" (.574).

The *Active Problem Solving* subscale involves focusing on the problem and taking steps to solve it, relying on previous experiences. The items showing the highest factor saturation are: "I would make a plan of action and follow it" (.643), "I would rely on past experiences: I was already in a similar situation" (.643), "I would find several different solutions to the problem" (.589).

The *Problem Solving with personality development* subscale involves one's tendency to cope with stress by seeing the positive aspects of a situation, as something that will contribute to their development, in terms of change and maturity. The items showing the highest factor saturation are: "I would mature and/or change as a person" (.739), "I would say things to myself that would help me feel better" (.612), "I would re-examine what is truly important in life" (.540).

The *Problem Solving with the help of others* subscale involves seeking emotional and instrumental support, i.e., the ability to observe the situation from the perspective of others and seek understanding and empathy from the environment, as well as help and advice related to the problem. The items that show the highest factor saturation are: "I would try to see things from someone else's point of view" (.659), "I would imagine how a person I admire would act in such a situation and I would follow that" (.580), "I would seek professional help" (.577).

The *Social Support* subscale includes statements related to seeking emotional support and help from friends, experts and others: "I sought support from those who know me best" (.774), "I went to a friend to help me feel better about the problem" (.715), "I went to someone (friend or expert) to help me feel better" (.653).

The *Problem-Focused* subscale includes statements related to careful consideration and finding different ways to solve a problem: "I tried to think of as many solutions as possible before deciding what to do" (.743), "I made a stand and fought for what I most wanted in that situation" (.674), "I came up with a plan of action to deal with the problem" (.642).

The *Withdrawal* subscale includes statements related to distancing oneself from the problem and avoiding facing the problem: "I just wanted people to leave me alone" (.725), "I spent more time alone than usual" (.716), "I dreamed of better times" (.595).

The *Optimism* subscale includes statements related to one's tendency to expect the best possible outcome in a situation, as well as the existence of hope and "confidence" in the future: "In uncertain situations, I usually expect the best outcome" (.810), "I generally expect that more good than bad things will happen to me" (.792), "I am always optimistic about my future" (.792).

The *Pessimism* subscale includes statements related to one's tendency to see things as bad, expecting the worst outcome: "If things can go wrong for me, they certainly will" (.823), "I almost never expect events to unfold the way I want" (.724), "I rarely count on good things to happen to me" (.536).

The *Faith in One's Problem-Solving Ability* subscale consists of statements related to one's ability to find different ways to solve problems in order to achieve the best possible outcome and get what one wants: "I can think of many ways to get out of a problem" (.712), "There are many ways to solve any problem" (.660), "Even when others get discouraged, I know I can find a way to solve the problem" (.619).

The *Internal support* subscale consists of statements related to concerns about one's responsibility, and goal-achieving abilities: "I often worry about something" (.685), "I worry about my health" (.639), "I pursue my goals energetically" (.545).

3.2. Descriptive Factor Analysis

Table 1 shows the values of the obtained factors. The dimension that achieved the highest average value, regarding the WOCQ scale, is *Active problem solving* (AS = 3.57), while *Denial* has the lowest average value (AS = 2.49). *Problem Solving* has the highest value on the CSI scale (AS = 3.50), with *Withdrawal* having the lowest value (AS = 2.89). On the LOT scale, *Optimism* has a higher average value (AS = 3.42) than *Pessimism* (AS = 2.72). On the AHS scale, both dimensions show significantly high values, the highest than in any other scale: *Internal support* (3.63) and *Belief in one's ability to solve problems* (3.61).

Table 1. Descriptive statistics of isolated factors

	N	Min	Max	AS	SD
Denial (WOC)	303	1,2	4,3	2,49	0,64
Magical thinking (WOC)	303	1,5	4,7	3,09	0,69
Active problem solving (WOC)	303	1,9	5,0	3,57	0,66
Problem solving with personal development (WOC)	303	1,0	5,0	3,35	0,78
Problem solving with others' help (WOC)	303	1,2	4,7	3,34	0,66
Seeking social support (CSI)	303	1,0	5,0	3,45	0,93
Problem-focused (CSI)	303	1,2	5,0	3,50	0,79
Withdrawal (CSI)	303	1,0	5,0	2,89	0,87
Optimism (LOT)	303	1,0	5,0	3,42	0,98
Pessimism (LOT)	303	1,0	5,0	2,72	0,91
Faith in one's problem-solving ability (AHS)	303	1,3	5,0	3,61	0,76
Internal support (AHS)	303	1,3	4,8	3,63	0,68

3.3. Personality Dimensions and Coping Strategies

Table 2 shows the correlations between dispositional optimism and coping strategies. All coping strategies positively correlate to Optimism except Denial, which shows negative correlation. Magical Thinking and Withdrawal how no statistically significant correlations. Coping strategies that positively correlate to Optimism also negatively correlate to Pessimism, while the opposite holds true of Denial. Magical Thinking negatively correlates to Pessimism, and Withdrawal shows no statistically significant correlations.

Table 2. Dispositional optimism and coping strategies correlations

	Optimism	Pessimism
WOC Denial	-,147*	,135*
WOC Magical thinking	0,058	-,201**
WOC Active problem solving	,327**	-,159**
WOC Problem solving with personal development	,300**	-,262**
WOC Problem solving with others' help	,204**	-,206**
CSI Seeking social support	,187**	-,146*
CSI Problem-focused	,344**	-,117*
CSI Withdrawal	-0,060	0,029

Note: *p < .05, **p < .01

Table 3 shows the correlations between the dimenstion of Hope and coping strategies. All coping strategies positively correlate with both Hope factors, except for Denial, which shows negative correlation. Magical Thinking and Withdrawal show no statistically significant correlations.

Table 3. Correlations between hope and coping strategies

	Faith in one's problem-solving ability	Internal support
WOC Denial	-,214**	-,228**
WOC Magical thinking	0,037	0,044
WOC Active problem solving	,351**	,191**
WOC Problem solving with personal development	,153**	,267**
WOC Problem solving with others' help	,140*	,192**
CSI Seeking social support	,131*	,153**
CSI Problem-focused	,302**	,244**
CSI Withdrawal	-0,057	0,024

Note: *p < .05, **p < .01

3.4. Differences Between Groups

Using the t-test, we examined whether there are gender-based differences on each subscale, and whether there are differences based on academic orientation. Table 4 shows that there are statistically significant gender-based differences on all subscales (factors), except for Withdrawal. In general, values are higher among women on all subscales, except Withdrawal and Pessimism, which are more pronounced among men.

Table 4. Gender-based differences and subscales

		N	AS	SD	F	t	df	p
Denial	men	142	**2,68**	0.648	1.927	5.144	301	0.000
	women	161	2,32	0.575				
Magical thinking	men	142	3,00	0.626	1.864	-2.098	301	0.037
	women	161	**3,17**	0,726				
Active problem solving	men	142	3,47	0,644	0,270	-2,414	301	0,016
	women	161	**3,65**	0,658				
Problem solving with personal development	men	142	3,06	0,767	3,590	-6,535	301	0,000
	women	161	**3,61**	0,696				
Problem solving with others' help	men	142	3,16	0,582	0,004	-2,925	301	0,004
	women	161	**3,34**	0,605				
Seeking social support	men	142	3,24	0,904	1,321	-3,783	301	0,000
	women	161	**3,64**	0,915				
Problem-focused	men	142	3,38	0,815	1,220	-2,476	301	0,014
	women	161	**3,61**	0,759				
Withdrawal	men	142	2,92	0,821	1,742	0,600	301	0,549
	women	161	2,86	0,910				
Optimism	men	142	3,25	1,006	1,675	-2,872	301	0,004
	women	161	**3,56**	0,925				

Pessimism	men	142	**2,90**	0,868	0,649	3,358	301	0,001
	women	161	2,56	0,911				
Faith in one's problem-solving ability	men	142	3,47	0,843				
	women	161	**3,73**	0,653	15,175	-3,010	301	0,003
Internal support	men	142	3,43	0,720				
	women	161	**3,80**	0,594	4,225	-4,899	301	0,000

Table 5 shows the differences between students of engineering and social sciences. The results show that there are statistically significant differences across subscales, except for Withdrawal, where there are no statistically significant differences. The social sciences students exibit higher values for all coping strategies except Denial, which is more pronounced among engineering students. Hope and Optimism are also more pronounced among the social sciences students, while Pessimism is more pronounced among the engineering students.

Table 5. Differences between students of engineering and social sciences

		N	*AS*	*SD*	*F*	*t*	*df*	*p*
Denial	social s.	178	2,31	0,587	0,031	-6,443	301	0,000
	engineering	125	**2,76**	0,612				
Magical thinking	social s.	178	**3,23**	0,715	2,722	4,226	301	0,000
	engineering	125	2,90	0,592				
Active problem solving	social s.	178	**3,74**	0,626	0,004	5,664	301	0,000
	engineering	125	3,32	0,626				
Problem solving with personal development	social s.	178	**3,63**	0,656	5,68	8,475	301	0,000
	engineering	125	2,94	0,762				

Problem solving with others' help	social s.	178	**3,34**	0,541	0,003	3,336	301	0,001
	engineering	125	3,13	0,529				
Social support	social s.	178	**3,65**	0,907	1,521	4,564	301	0,000
	engineering	125	3,17	0,892				
Problem-focused	social s.	178	**3,65**	0,724	4,299	4,003	301	0,000
	engineering	125	3,29	0,840				
Withdrawal	social s.	178	2,83	0,873	0,077	-1,348	301	0,179
	engineering	125	2,97	0,860				
Optimism	social s.	178	**3,66**	0,890	2,773	5,328	301	0,000
	engineering	125	3,07	0,994				
Pessimism	social s.	178	2,47	0,888	2,278	-6,121	301	0,000
	engineering	125	**3,08**	0,809				
Faith in one's problem-solving ability	social s.	178	**3,78**	0,628	21,66	4,810	301	0,000
	engineering	125	3,37	0,859				
Internal support	social s.	178	**3,85**	0,538	11,538	7,241	301	0,000
	engineering	125	3,32	0,741				

Considering the similar findings of differences between groups by gender and academic orientation, we checked the distribution of the sample according to the variables (see Table 6) and noticed an uneven gender representation in the sub-samples of engineering students and social sciences students.

Table 6. Cross-tabulation of academic orientation and gender variables

		Studies		Total
		Social sciences	Engineering	
Gender	M	35	107	142
	F	143	18	161
Total		178	125	303

4. Discussion

This study analyzed students' reactions to an imagined emergency situation using instruments which evaluate stress coping, Dispositional Optimism, and Hope, as dimensions that are representative of explanatory style. The convenience sample displayed a factor structure which is similar to the ones found other relevant studies. The original structure of the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) consists of: *Confrontative Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem-Solving* and *Positive Reappraisal*. The studies which used the Ways of Coping Questionnaire produced different factor structures (Rexrode, Petersen, & O'Toole, 2008). In this sample, the following factors were isolated: *Denial, Magical Thinking, Active Problem Solving, Problem solving with personality development,* and *Problem solving with the help of others*. A similar structure can be found in the study by Sorlie and Sexton (2001): *Wishful Thinking, Goal-Oriented, Seeking Support, Thinking It Over*, and *Avoidance*. Another similar structure can be found in the research conducted on three different samples (Vitaliano, Russo, Carr, Maiuro & Becker, 1985): *Problem-Focused, Wishful Thinking, Seeking Social Support, Blamed Self* and *Avoidance*. The names of subscales (factors) in this study were meant to be more detailed, to reflect the meaning behind them.

The Coping Strategy Indicators measure (Amirkhan, 1990) originally consists of three factors: *Problem Solving, Seeking Social Support* and *Avoidance.* This study also has three factors, named *Social Support, Problem-Focused,* and *Withdrawal*. Previous research have mostly con-

firmed the three-factor structure, with the Avoidance factor proving to be heterogeneous (Žuljević, Jovanović & Gavrilov-Jerković, 2015). The verification of the questionnaire on a community sample in Greece showed a four-factor structure: *Problem Solving, Seeking Social Support, Avoidance-Distraction* and *Avoidance-Withdrawal* (Togas & Alexias, 2018), which confirmed the heterogeneity of the *Avoidance* factor.

Life Orientation Test-Revised (*LOT-R*) is an instrument that assesses one's dispositional level of optimism, designed as a dimension representing a continuum between optimism and pessimism (Scheier & Carver, 1985; Scheier, Carver, & Bridges, 1994). In this sample, Optimism and Pessimism, were identified as two separate factors. Many previous studies have obtained a similar two-factor structure (Ferrando, Chico & Tous, 2002; Gaspar, Ribeiro, Matos, Leal, & Ferreira, 2009; Ottati & Noronha, 2017; Villarroel, Rubio, & Atenas, 2009).

The Adult Hope Scale (*AHS*) ia a measure of one's ability to find alternative ways to achieve one's goals, when the usual ways are unavailable (Snyder et al., 1991; Snyder et al., 2005). The original scale consists of two subscales: *Pathways thinking* and *Agency thinking*. The sample confirmed the two-factor structure. The factors were named *Faith in one's problem-solving ability* and *Internal support*, as these names communicate the meaning more adequately.

In the sample, coping strategies aimed at problem solving were found to be more prominent (in descending order: *Active problem solving, Problem orientation, Social support, Problem solving with personality development, Problem solving with the help of others*). Avoidance-oriented strategies (*Denial, Withdrawal, Magical thinking*) were employed to a lesser degree. Many previous studies bear out the results obtained. The studies by Mavar (2009) and Vuletić-Prtorić (2002) confirmed that problem-focused coping strategies are the most used and most effective in situations where one feels one can control a stressful event and its outcomes. The above results indicate that it would be better if coping strategies were classified into two groups: engagement or approach coping, which involves confronting the stressor and feelings associated with a stressful situation, and disengagement or avoidance coping, which involves avoiding stressors and feelings associated with them (Skinner, Edge, Altman, & Sherwood, 2003).

As to the relationship between coping strategies and dispositional optimism, the results show Optimism positively correlates with problem-focused coping strategies, while pessimism correlates with problem-avoidance coping strategies (Scheier, Carver, & Bridges, 2001; Scheier, Weintraub, & Carver, 1987). Considering the type of stressor, optimism is a better predictor of problem-focused coping for controllable stressors such as academic success, and emotion-focused coping for uncontrollable stressors such as trauma (Solberg Ness & Segerstrom, 2006). Research has shown that optimism and social networks have mutually reinforcing effects (Segerstrom, 2007), which explains the approximately similar values obtained for problem-focused strategies and social support-seeking strategies. In other words, social support-seeking strategies involve solving problems with the support of other people, as the name of this factor suggests. Pessimism, contrary to optimism, causes self-defeating behaviour patterns that lead to avoidant coping strategies and behaviors that are harmful for one's health and well-being (Carver, Scheier, & Segerstrom, 2010).

Research shows a dynamic and reciprocal relationship between coping strategies and the dimension of hope (Folkman, 2014). A higher level of hope can improve coping strategies (Yucens at all., 2019). The results of our research show that the most prominent correlations exist between Active Problem Solving and Faith in one's problem-solving ability, and Problem Solving with personality development and Inner Support. This bears out the authors' hypothesis that that the first dimension of Hope is more related to abilities, while the second dimension is more related to the motivational component (Snyder, Rand, & Sigmon, 2005). Finally, the results for the dimension of hope are largely similar to the results for dispositional optimism (Aspinwall, Richter, & Hoffman, 2001).

Gender differences in our sample showed that higher values on problem-focused and social support coping strategies, optimism and hope are observed in women. Among men, Denial and Pessimism are more commonly employed. Similar findings were obtained by Mavar (2009): women employ problem-oriented coping more than men. Male students tend to use avoidance strategies more than female students (Cabras & Mondo, 2018). It has also been shown that women are more

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focused on emotions and seeking social support when facing stressful events (Amirkhan, 1990; Bijttebier & Vertommen, 1997; Long, 1990). However, some studies reached the conclusion that male students show higher values on Problem Solving, and female students on Avoidance (Ager & Maclachlan, 1998).

Differences in terms of academic orientation (studies' type) can be interpreted as differences in terms of gender, considering that the sub-sample of social sciences is largely made up of female students, while the engineering sub-sample is made up of male students. However, we may assume that other personality dimensions also play a role in the choice of studies, so the differences can be interpreted independently of gender. The social sciences students have higher values on all coping strategies except Denial, which is more prominent among the engineering students. All the factors of the explanatory style dimension are more prominent among the students of social sciences, except Pessimism, which is again more prominent among the engineering students. A possible explanation is that the students of social sciences study human behavior and their reactions to stressful and similar situations. In the engineering students, we can assume that their lack of knowledge of human behaviour patterns and response to emergency situations causes inhibitions and results in their avoidance of stressful circumstances. We can also assume that the engineering students mostly employ the convergent method of problem solving. This can explain a higher degree of pessimism among them, because focusing on a single way of solving problems can narrow one's perspective. The students of social sciences, on the other hand, have a tendency to seek more than one way to solve problems. It is possible that the engineering students employ the convergent method only for problems related to social situations and that they would approach problems from the field of natural or applied sciences differently.

Finally, it should be noted that the results of this research were obtained on a convenient sample and that, therefore, can be taken as indicators of certain trends that could be examined in subsequent research.

5. Conclusion

The results showed that the coping strategies most often employed by the students are Active Problem Solving, Problem-Focused and Social Support, although the values of these dimensions are moderate. The findings are consistent with the previous research. The values for Optimism are significantly higher than for Pessimism. Another dimension with a high value is hope, which is also consistent with the previous research. This confirms that these personality dimensions correlate with problem-focused and social support coping strategies. Strategies and personality dimensions aimed at engaged coping with emergency situations are more prominent among female students. The same applies to students of social sciences, beacuse this subsample is largely made up of women. Other factors that influence the choice of studies, especially certain personality dimensions, should also be taken into account.

The obtained correlations confirm that dividing the coping strategies into those of engagement and disengagement would be more practical and useful in every respect. It would make a clear distinction between two opposing tendencies: to actively confront the problem and engage all internal resources to overcome it, and to let go and avoid the problem with all the negative consequences it brings. The distinction between problem-focused and emotion-focused strategies is not adequate, because the situations in which the strategies are employed overlap. Being problem-focused does not mean that emotions are not involved. Rather, it can be assumed that individuals characterized by optimism and hope have a considerable tolerance for frustrations and instead of indulging in negative scenarios caused by an emergency situation, they actively confront the problem. Finding adequate solutions then inspires positive emotions. Emotion-focused does not mean that individuals do not confront the problem; however, they have a pessimistic outlook, and no faith in their ability to solve the problem. In other words, since they do not see a way out of the situation, they avoid both the problem and the negative emotions by trying to ignore the emergency situation.

The coping strategies employment exibits differences by gender and type of studies. This data could serve as an indicator to educational institutions of the need to put in more effort to enable individuals to cope

with emergency situations, men and applied sciences students being particularly vulnerable. Emergency situations affect the general population regardless of status, and not everyone is equally prepared to cope with them. Therefore, research on coping strategies and related personality dimensions is important as a part of comprehensive preparations for an efficient community response to emergency situations.

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ODLIKE KLIJENTA KAO PREDIKTORI FENOMENA RANE PSIHIČKE PROMENE TOKOM PSIHOLOŠKOG TRETMANA

Rezime: Klijentova rana psihička promena tokom psihološkog tretmana fenomen je koji privlači sve veću istraživačku pažnju. Cilj našeg rada bio je da istraži i identifikuje različite putanje rane promene distresa, te ispita mogućnost predviđanja kako će se klijenti menjati u odnosu na svoje prvobitne osobine. Uzorak se sastojao od 161 ispitanika, koji su u tri navrata popunjavali instrument za procenu distresa – pre početka tretmana, nakon treće i nakon šeste seanse. Rezultati analize latentnih klasa i multinominalne logističke regresije upućuju na postojanje tri latentne klase i za njih karakteristične – putanju *bez promene*, putanju *rane promene* i putanju *postepene promene*. Dodatno, pripadnost latentnim klasama mogla se predvideti početnim distresom i obrazovnim statusom ispitanika.

Ključne reči: Putanje rane psihičke promene, distres, psihološki tretman, početne odlike klijenta, analiza latentnih klasa

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1. Uvod

Fenomen rane psihičke promene odnosi se na pojavu koja je detektovana u istraživanjima specifičnih putanja psihičke promene, a prema kojoj kod nekih, ali ne i svih, klijenata dolazi do značajne psihičke promene već na samom početku psihološkog tretmana (Lambert, 2005). Istraživačka pažnja se sve više usmerava na psihičku promenu koja se dešava u početnoj fazi psihološkog tretmana, budući da se rani odgovor na tretman prepoznaje kao indikator pozitivnog ishoda tretmana, ali i dugotrajnosti postignutih efekata tretmana (npr. Aderka, Nickerson, Bøe, Hofmann, 2012; Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012; Lutz, Stulz, & Köck, 2009; Van et al., 2008). Putanja rane promene jeste putanja koja se dosledno identifikuje u studijama posvećenim istraživanju različitih putanja psihičke promene, nezavisno od toga da li se studije sprovode na homogenim (npr. Lutz et al., 2014) ili heterogenim uzorcima (npr. Stulz, Lutz, Leach, Lucock, & Barkham, 2007). Međutim, gotovo sve dosadašnje studije sprovedene su na uzorcima iz kliničke populacije i u njima je psihička promena izjednačavana sa promenom psihičkih simptoma (npr. Melchior et al., 2016; Smits, Stinckens, Luyckx, & Claes, 2015), te se na osnovu njihovih rezultata ne mogu sa potpunom preciznošću formirati očekivanja rane psihičke promene kod klijenata iz nekliničke populacije. Kako bi se pratila psihička promena kod klijenata na psihološkom tretmanu, potrebno je koristiti indikatore njihovog stanja koji će omogućiti da potencijalna psihička promena bude i detektovana, čime se ističe značaj pažljivog biranja indikatora klijentovog stanja u istraživanjima psihološkog tretmana. Istraživači iz oblasti su stoga postigli konsenzus da je stepen klijentovog distresa – indikator klijentovog stanja koji treba biti meren u istraživanjima koja se sprovode i na uzorcima iz kliničke i na uzorcima iz nekliničke populacije (Horowitz, Strupp, Lambert, & Elkin, 1997).

Na osnovu pojedinih psiholoških teorija i modela može se objasniti zbog čega je očekivano da se promena klijentovog distresa detektuje već na samom početku psihološkog tretmana. U okviru Modela opštih faktora (Frank, 1961) nailazi se na pretpostavku da se već u početnoj fazi tretmana aktivira ključni mehanizam psihičke promene klijenta – porast klijentove nade da će mu biti bolje baš zato što učestvuje na

psihološkom tretmanu. Preciznije, klijent je do početka psihološkog tretmana demoralizovan i visoko uznemiren postojanjem psihičkog problema. Međutim, neposredno nakon početka psihološkog tretmana počinju da rastu klijentova očekivanja da će u saradnji sa stručnim licem njegov problem biti rešen, usled čega klijent biva sve manje emocionalno uznemiren povodom svojih psihičkih tegoba (Frank, 1973). Slična pretpostavka nalazi se u okviru Transteorijskog modela promene (Prochaska & DiClemente, 1982), prema kojem je prva faza psihološkog tretmana posvećena iskustvenim procesima koji dovode do pada u inicijalnim vrednostima distresa. Neki od primera iskustvenih procesa jesu dramatično olakšanje, socijalno oslobađanje, povećanje svesnosti, promena samovrednovanja i vrednovanja okoline. Pretpostavka da se akutni distres menja najpre tokom tretmana pronalazi se i u okviru Faznog modela psihoterapije (Howard, Lueger, Maling, & Martinovich, 1993). Prema ovom modelu, većina klijenata koja dolazi na psihološki tretman oseća se bespomoćno i beznadežno, usled čega doživljava visok stepen distresa. Stoga dolazak na tretman kod klijenta podstiče remoralizaciju, to jest mobilizaciju snaga koje će se koristiti dalje tokom tretmana radi razrešenja problema i/ili oslobađanja od psihičkih tegoba. Pojam remoralizacije autori ovog modela izjednačavaju s porastom subjektivnog blagostanja, koje je operacionalizovano preko pada akutnog distresa klijenta (Howard et al., 1993).

Pomenute pretpostavke dobile su i svoju empirijsku podršku. Naime, rezultati velikog broja studija upućuju da se najveća promena u merama negativnih indikatora stanja klijenta beleži u početnim fazama tretmana (npr. Baldwin, Berkeljon, Atkins, Olsen, & Nielsen, 2009; Barkham, Rees, Stiles, Hardy, & Shapiro, 2002; Sembill, Vocks, Kosfelder, & Schöttke, 2017), kao i da se promena ovih indikatora odvija u skladu sa negativno ubrzavajućim trendom. Na primer, u studiji koju su sproveli Barkham i saradnici (2002), značajna promena u meri distresa beleži se već nakon druge tretmanske seanse koji, kako tretman odmiče, nastavlja nelinearno da opada. Prilikom istraživanja ove teme, najveći broj dosadašnjih studija posvećen je proveri pretpostavki Faznog modela psihoterapije (Howard et al., 1993), a na osnovu rezultata tih studija dolazi se do zaključka kako je nužno napustiti ideju o univerzalnim putanjama promene koje su karakteristične za sve klijente na tretmanu, te da je

nužno tragati za međusobno različitim putanjama promene različitih indikatora klijentovog stanja. Naime, rezultati pomenutih studija jesu u većinskom delu potvrdili polazne pretpostavke Faznog modela, ali su i ukazali da one ipak nisu važeće za sve klijente na tretmanu. Preciznije, kod većine klijenata koji započinju tretman sa niskim do umereno izraženim psihičkim simptomom detektuje se promena negativnih indikatora stanja već u početnoj fazi tretmana. Ipak, odstupanje od ove pretpostavke pronalazi se kod klijenata koji započinju tretman sa težom kliničkom slikom, i za koje nije karakteristična rana psihička promena (npr. Joyce, Ogrodniczuk, Piper, & McCallum, 2002; Stulz & Lutz, 2007).

Kada je reč o tome na koje sve načine se psihičko stanje klijenta menja tokom psihološkog tretmana, dosadašnji nalazi sugerišu postojanje značajnih individualnih razlika koje se dovode u vezu sa njegovim inicijalnim stanjem. Naime, značajno poboljšanje psihičkog stanja u ranoj fazi tretmana ne detektuje se kod klijenata koji započinju tretman u lošem psihičkom stanju (npr. Melchior et al., 2016). Dodatno, početnu fazu tretmana ispitanika s inicijalno lošim psihičkim stanjem karakteriše stagnacija ili čak značajno pogoršanje stanja (npr. Swift, Callahan, Heath, Herbert, & Levine, 2010). Sa druge strane, rana značajna psihička promena detektuje se kod klijenata koji neposredno pre početka tretmana imaju srednji stepen izraženosti psihičkog problema i/ili simptoma, dok se blaga rana psihička promena ili potpuno odsustvo rane psihičke promene vezuje za ispitanike koji započinju tretman u dobrom psihičkom stanju, pri čemu se takvi nalazi objašnjavaju efektom poda (npr. Finch, Lambert, & Schaalje, 2001; Smits et al., 2015).

Pitanje predikcije putanja psihičke promene usložnjava se pojavom nalaza prema kojima se klijenti sa jednakim inicijalnim intenzitetom psihičkih tegoba mogu menjati putem međusobno značajno različitih putanja (npr. Owen et al., 2015; Stulz, Gallop, Lutz, Wrenn, & Crits-Christoph, 2010). Zbog pomenutih nalaza, ali i radova teoretičara koji ističu značaj odlika klijenta za proces i ishod psihološkog tretmana (Orlinsky, Rønnestad, & Willutzki, 2004; Swift & Greenberg, 2012), varijable klijenta počinju da se istražuju u prediktorskoj ulozi pripadnosti specifičnim putanjama promene. Sprovedenih studija na ovu temu je malo, posebno kada je reč o putanjama rane psihičke promene, a dosadašnji nalazi sugerišu kako pojedine varijable klijenta jesu značajne za

predviđanje toga da li će se klijent menjati u ranoj fazi tretmana. Prema rezultatima studije koju su sproveli Sembilova i saradnici (Sembill et al., 2017), za ispitanike ženskog pola znatno je verovatnija psihička promena u početnoj fazi tretmana u poređenju sa ispitanicima muškog pola. Takođe, visok stepen obrazovanja i bivanje u radnom odnosu odlikuju klijente koje karakteriše i rani odgovor na tretman, odnosno ovakvi klijenti imaju znatno veću verovatnoću rane psihičke promene u odnosu na klijente koji su manje obrazovani i/ili nezaposleni (Melchior at al., 2016). Ipak, važno je naglasiti da se pomenuti zaključci izvode iz skromnog korpusa dosadašnjih studija, te da je potrebno ovim pitanjima posvetiti buduću istraživačku pažnju kako bi se bolje razumeli i fenomen rane psihičke promene i mogućnost njegove predikcije, što jeste globalni cilj ovog rada.

Pomenuti globalni cilj ovog rada izražava se putem sledeća dva specifična cilja sprovedenog istraživanja. Prvi specifični cilj istraživanja podrazumeva proveru pretpostavke da se rana promena distresa kod klijenata na psihološkom tretmanu odvija putem međusobno značajno različitih putanja. Drugi specifični cilj istraživanja odnosi se na proveru pretpostavke da se klijentovim početnim odlikama može vršiti predviđanje toga kakvim putanjama će se menjati distres klijenata u ranoj fazi psihološkog tretmana.

2. Metod
2.1. Uzorak

Uzorak je sačinio 161 ispitanik, to jest korisnik usluga Psihološkog savetovališta Centra za ratnu traumu i Psihološkog savetovališta za mlade Novosadskog humanitarnog centra. Uzorkom su obuhvaćeni punoletni ispitanici iz nekliničke populacije, od kojih je 49 ispitanika muškog, a 112 ispitanika ženskog pola. Prosečna starost ispitanika je 30,71 godina (SD = 10,07; Mod = 22), opsega od 18 do 63 godine. Od ukupnog uzorka, 1,2% ispitanika ima završenu osnovnu školu, 52,2% ispitanika srednju školu, 19,9% su u procesu studiranja, dok 26,7% ima fakultetsko obrazovanje. Dodatno, uzorak je činilo 38,7% zaposlenih odnosno 61,3% nezaposlenih ispitanika.

2.2. Procedura

Istraživanje je sprovedeno u okviru većeg istraživačkog projekta uz obaveznu informisanu saglasnost ispitanika. Potencijalni ispitanici su se samoinicijativno prijavljivali za učešće na besplatnom psihološkom tretmanu, da bi nakon konsultovanja kriterijuma isključenja bili uvršteni u uzorak istraživanja. Svim ispitanicima omogućen je besplatni individualni psihološki tretman u trajanju od deset jednosatnih seansi, po jedna seansa nedeljno. Istovremeno s učešćem na tretmanu, ispitanici su ponavljano testirani baterijama instrumenata u cilju praćenja promene njihovog psihičkog stanja. Od značaja za ovo istraživanje jesu prva tri merenja, od kojih je prvo sprovedeno pre početka prve seanse, drugo nakon završetka treće seanse, a treće nakon završetka šeste seanse.

2.3. Instrumenti

Lista osnovnih podataka korišćena je za prikupljanje osnovnih informacija o ispitanicima. Lista se sastoji od pitanja koja se odnose na demografske odlike ispitanika (pol, starost, stepen obrazovanja, status zaposlenja), i ona je primenjena neposredno pre početka prve tretmanske seanse.

Skala depresivnosti, anksioznosti i stresa – 21 (DASS-21; Lovibond & Lovibond, 1995) korišćena je za procenu distresa, odnosno opšte uznemirenosti ispitanika. Sastoji se od tri supskale ‒ depresivnost, anksioznost i stres. Skala omogućava formiranje ukupnog sumativnog skora s teorijskim rasponom od 0 do 63, pri čemu veći skorovi indikuju viši stepen distresa. Ispitanici su imali zadatak da na četvorostepenoj Likertovoj skali raspona od 0 (nimalo) do 3 (uglavnom ili skoro uvek) procene da li su se u poslednjih nedelju dana osećali na opisan način. Ovu skalu karakterišu odlične psihometrijske karakteristike, kao i njena visoka primenljivost u kontekstu evaluacije psihološkog tretmana (npr. Ronk, Korman, Hooke & Page, 2013). Instrument je i u ovom istraživanju pokazao odlične psihometrijske karakteristike, budući da su dobijeni visoki koeficijenti interne konzistencije na prvom (α = .93), drugom (α = .93) i trećem merenju (α = .92). U ovom istraživanju je korišćen samo ukupni skor instrumenta kao mera distresa ispitanika, a instrument je primenjen pre početka prve, te nakon završetka treće i šeste seanse.

2.4. Obrada podataka

Kako bismo proverili da li se rana promena distresa kod klijenata na psihološkom tretmanu odvija putem međusobno značajno različitih putanja, primenjena je analiza latentnih klasa u okviru statističkog programa Mplus 7,32. Dodatno, predikcija pripadnosti specifičnim putanjama promene distresa početnim odlikama klijenta proveravana je multinominalnom logističkom regresijom u okviru statističkog paketa IBM SPSS 24.

3. Rezultati

3.1 Specifične putanje rane promene distresa

Cilj analize latentnih klasa bio je da identifikuje poduzorke ispitanika – latentne klase – na osnovu sličnih distribucija skorova promene distresa, pri čemu različite distribucije skorova karakterišu različite poduzorke ispitanika (Muthén & Muthén, 1998–2012). Za procenu optimalnog broja latentnih klasa ispitanika korišćeni su indikatori fita zasnovani na vrednostima maksimalne verodostojnosti: Akaike informacioni kriterijum (*AIC*; Akaike, 1987), Bayesian informacioni kriterijum (*BIC*; Schwarz, 1978), kao i veličinom uzorka prilagođen Bayesian informacioni kriterijum (*saBIC*; Sclove, 1987), pri čemu niže vrednosti ovih indikatora sugerišu odabir adekvatnijeg modela (Morin, Morizot, Boudrias, & Madore, 2011). Dodatno su korišćeni prilagođen Lo-Mendel-Rubin test (*aLMR*; Lo, Mendell, & Rubin, 2001) i bootstrap likelihood ratio test (*BLRT*; McLachlan & Peel, 2000), indikatori zasnovani na proceni značajnosti promene, koji ukazuju da li model sa jednom latentnom klasom više statistički značajno bolje objašnjava podatke u odnosu na model koji ima jednu latentnu klasu manje, te entropija – čije više vrednosti ukazuju na postojanje boljeg fita poređenih modela (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). Budući da postojanje tri merenja ostavlja mogućnost i nelinearne promene, testirani modeli sadržali su procenu i nelinearnih efekata promene po logici kvadratne funkcije. Ukupno je testirano pet potencijalnih rešenja, počevši od jedne, zaključno sa pet latentnih klasa pretpostavljenih u modelu. U

Tabeli 1 prikazani su indikatori fita za svaki od testiranih modela, te se može videti kako se, konsultujući sve pomenute indikatore, ističe rešenje sa tri latentne klase.

Tabela 1. *Indikatori fita za rešenja sa različitim brojem latentnih klasa rane promene distresa*

	AIC	BIC	saBIC	aLMR	BLRT	Entropija
1 klasa	3866,42	3884,91	3856,92	–	–	–
2 klase	3701,47	3732,38	3700,63	164,85**	172,95**	.82
3 klase	3583,89	3627,03	3582,71	119,68**	125,58**	.86
4 klase	3564,69	3620,16	3563,16	25,92	27,20*	.87
5 klasa	3545,70	3613,49	3543,85	25,73	26,99*	.87

Napomena: *AIC* = Akaike informacioni kriterijum; *BIC* = Bayesian informacioni kriterijum; *saBIC* = veličinom uzorka prilagođen *BIC*; *aLMR* = prilagođen Lo-Mendel-Rubin test; *BLRT* = bootstrap likelihood ratio test; $p < .05$*; $p < .01$**.

U okviru rešenja sa tri latentne klase dolazi do najvećeg sniženja u AIC, BIC i saBIC indikatorima, do poslednjeg statistički značajnog poboljšanja eksplikabilnosti modela (aLMR i BLRT indikatori), te do značajnog porasta entropije u odnosu na prethodne modele, dok potonji ne doprinose u velikoj meri porastu iste. Sve navedeno upućuje da se mogu identifikovati tri latentne klase ispitanika sa kvalitativno različitim putanjama rane promene distresa, prikazanim na Grafikonu 1.

Grafikon 1. *Rešenje sa tri latentne klase rane promene distresa*
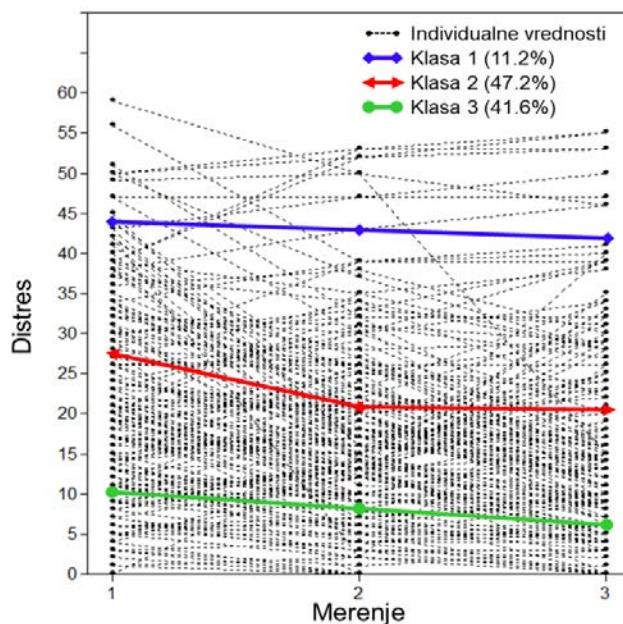
Rezultati prikazani u Tabeli 2 ukazuju da ispitanici iz Klase 1 ne ostvaruju značajnu promenu distresa, s obzirom na neznačajne nagibe krive. Ispitanici iz Klase 2 ostvaruju nelinearno smanjenje distresa, negativno ubrzavajućim trendom. Klasa 3 okuplja ispitanike kod kojih se početni nivo distresa linearno smanjuje zaključno sa trećim merenjem. Analiza varijanse za ponovljena merenja sa pripadnošću klasi kao grupišućom varijablom upućuje da osim postojanja glavnog efekta merenja ($F (2; 157) = 10,22$; $p < .01$), postoji i efekat interakcije merenja i pripadnosti klasteru ($F (2; 157) = 3,91$; $p < .05$). To znači da se između identifikovanih latentnih klasa distres menja putem statistički značajno različitih putanja.

Tabela 2. *Parametri opaženih latentnih klasa rane promene distresa*

	N	%	I	SE (I)	S	SE (S)	Q	SE (Q)
Klasa 1	18	11,2	43,74**	2.,22	-.70	3,68	-.24	1,59
Klasa 2	76	47,2	27,19**	1,96	-9,26**	2,92	2,86**	1,33
Klasa 3	67	41,6	10,35**	1,34	-1,96*	1,49	-.03	.66

Napomena: *N* = broj ispitanika u klasi; *%* = procenat ispitanika u celo-kupnom uzorku; *I* = odsečak prosečne krive klase; *SE (I)* = standardna greška odsečka; *S* = nagib prosečne krive klase; *SE (S)* = standardna greška nagiba; *Q* = kvadratni nelinearni efekat; *SE (Q)* = standardna greška kvadratnog efekta; p < .05*; p < .01**.

3.2 Klijentove početne odlike kao prediktori pripadnosti latentnim klasama

Provera klijentovih početnih odlika u ulozi prediktora pripadnosti latentnim klasama sprovedena je metodom multinominalne logističke regresije, a dobijeni rezultati ukazuju na statističku značajnost testiranog modela ($c^2(10) = 172,92$; p < .05). Rezultati prikazani u Tabeli 3 upućuju da je početni distres značajan prediktor prilikom oba poređenja, sugerišući da s rastom početnog distresa raste i verovatnoća da će ispitanici biti svrstani u prvu latentnu klasu. S rastom vrednosti početnog distresa za jednu jedinicu, šanse za pripadnost prvoj klasi jesu 1,23 puta veće u odnosu na pripadnost drugoj klasi, te 1,69 puta veće u odnosu na pripadnost trećoj klasi. Dodatno, obrazovni status se granično statistički značajno ističe, pri čemu obrazovaniji ispitanici imaju veću verovatnoću da će pripasti drugoj ili trećoj u odnosu na prvu klasu. S rastom vrednosti obrazovnog statusa za jednu jedinicu, šanse za pripadnost trećoj klasi jesu 3,17 puta veće u odnosu na pripadnost prvoj klasi, a pomenutim rastom šanse za pripadnost drugoj klasi bivaju 2,84 puta veće u odnosu na pripadnost prvoj klasi.

Tabela 3. *Rezultati multinominalne logističke regresije*

Latentna klasa[a]		B	se	Wald	df	p	Exp(B)	95% CI
2	Intercept	9,84	3,14	9,81	1	.00	–	–
	Početni distres	-.22	.05	15,98	1	.00	.81	.72 – .89
	Pol	-1,03	.95	1,18	1	.28	.36	.06 – 2,29
	Starost	-.01	.04	.01	1	.94	.99	.93 – 1,08
	Obrazovanje	1,23	.48	3,17	1	.05	2,84	.95 – 8,76
	Zaposlenje	-.26	.77	.12	1	.73	.77	.17 – 3,49
3	Intercept	13,55	3,59	14,41	1	.00	–	–
	Početni distres	-.53	.08	46,52	1	.00	.59	.51 – .69
	Pol	-1,24	1,11	1,26	1	.26	.29	.03 – 2,52
	Starost	.02	.05	.18	1	.67	1,02	.93 – 1.12
	Obrazovanje	1,53	.60	3,73	1	.04	3,17	.98 – 10,21
	Zaposlenje	-.87	.99	.77	1	.37	.42	.06 – .29

Napomena: a = referentna grupa: prva latentna klasa; *B* = koeficijent multinominalne logističke regresije; *se* = standardna greška; *Wald* = test statistik; *df* = broj stepeni slobode; *p* = parametar statističke značajnosti; *Exp(B)* = eksponencijalni logistički koeficijent; *95% CI* = interval pouzdanosti od 95% za *Exp(B)*.

Tabela 4. *Deo rezultata dodatno sprovedene multinominalne logističke regresije*

Latentna klasa[a]		B	se	Wald	df	p	Exp(B)	95% CI
3	Intercept	-3,71	1,69	4,80	1	.03	–	–
	Početni distres	-.31	.05	33,06	1	.00	.74	.66 – .81
	Pol	-.22	.58	.14	1	.71	.81	.26 – 2,49
	Starost	.02	.03	.61	1	.43	1,02	.97 – 1,08
	Obrazovanje	.54	.35	2,41	1	.12	1,72	.87 – 3,42
	Zaposlenje	-.60	.62	.95	1	.33	.55	.16 – 1,83

Napomena: a = referentna grupa: druga latentna klasa; *B* = koeficijent multinominalne logističke regresije; *se* = standardna greška; *Wald* = test statistik; *df* = broj stepeni slobode; *p* = parametar statističke značajnosti; *Exp(B)* = eksponencijalni logistički koeficijent; *95% CI* = interval pouzdanosti od 95% za *Exp(B)*.

Da bi se uporedile druga i treća latentna klasa, sprovedena je dodatna analiza čiji su rezultati prikazani u Tabeli 4. Dobijeni rezultati sugerišu značajan prediktivni potencijal distresa, sugerišući da sa rastom vrednosti početnog distresa raste i verovatnoća da će ispitanici biti svrstani u drugu umesto u treću klasu. Preciznije, sa rastom vrednosti početnog distresa za jednu jedinicu, šanse za pripadnost drugoj klasi jesu 1,35 puta veće u odnosu na pripadnost trećoj klasi.

4. Diskusija

Prilikom istraživanja putanja rane promene distresa kod klijenata na psihološkom tretmanu, detektovane su putanje koje su nazvane putanja *bez promene*, putanja *rane promene* i putanja *postepene promene*. Ispitanici iz prve i najmanje latentne klase (11,20% uzorka) bili su najuznemireniji neposredno pre početka psihološkog tretmana, tj. započeli su tretman u najlošijem psihičkom stanju. Kod ovih ispitanika zabeleže-

na je stagnacija psihičkog stanja zaključno sa šestom tretmanskom seansom, što odgovara nalazima dosadašnjih studija prema kojima se kod inicijalno visoko uznemirenih klijenata poboljšanje stanja očekuje tek u kasnijim fazama tretmana (npr. Melchior et al., 2016). Kod ispitanika iz druge latentne klase (47,20% uzorka) izmeren je srednji stepen distresa neposredno pre početka psihološkog tretmana, pri čemu je upravo za ove ispitanike bila karakteristična poželjna putanja *rane promene*. Preciznije, kod ovih ispitanika je do značajnog smanjenja distresa došlo u periodu između prve i treće tretmanske seanse, da bi nakon toga distres nastavio da opada u blažem intenzitetu. Ovakav rezultat u potpunosti odgovara dosadašnjim nalazima, prema kojima se rana psihička promena detektuje kod onih klijenata koji neposredno pre početka tretmana imaju optimalni, odnosno srednji stepen izraženosti psihičkog problema i/ili simptoma (npr. Owen et al., 2015). Ispitanici iz treće i poslednje latentne klase (41,60% uzorka) započeli su tretman u najboljem psihičkom stanju, tj. bili su najmanje uznemireni neposredno pre početka tretmana. Kod ispitanika iz ove klase distres se menjao putanjom *postepene promene*, s obzirom na to što se granično statistički značajno smanjivao sve vreme u periodu između prve i šeste tretmanske seanse. Prema dosadašnjim nalazima (npr. Smits et al., 2015), kod ispitanika koji započinju tretman u dobrom psihičkom stanju očekuje se ili blaga rana psihička promena ili potpuno odsustvo rane psihičke promene, čime dobijeni rezultat biva u potpunosti usklađen sa dosadašnjim saznanjima.

Istraživanje predikcije pripadnosti latentnim klasama početnim odlikama klijenta pružilo je rezultate prema kojima su za ovo pitanje relevantni početni stepen distresa i obrazovni status ispitanika. Na osnovu toga koliko su ispitanici bili uznemireni neposredno pre početka psihološkog tretmana, moglo se predvideti kojom od identifikovanih putanja će se njihov distres menjati. Poželjna putanja *rane promene* bila je karakteristična za ispitanike koji su započeli tretman srednje uznemireni, dok odstupanje od ovog optimalnog početnog nivoa distresa povećava verovatnoću da će se ispitanici menjati preostalim identifikovanim dvema putanjama. Preciznije, visoke inicijalne vrednosti distresa povećavaju verovatnoću da će za klijente na tretmanu biti karakteristična putanja *bez promene*, dok niske inicijalne vrednosti distresa povećavaju verovatnoću da će se klijenti menjati putanjom *postepene promene*. Kada je

reč o obrazovnom statusu, rezultati ovog istraživanja sugerišu kako se ispitanici sa višim stepenom obrazovanja menjaju putem poželjnijih putanja promene distresa – putanjom *rane promene* ili putanjom *postepene promene*. Ipak, na osnovu početnog stepena obrazovanja nije se moglo statistički značajno predvideti kojom od ove dve putanje će se klijenti menjati, te se može zaključiti kako je obrazovni status ispitanika opravdanije konsultovati prilikom predikcije toga da li će promena u početnoj fazi tretmana u potpunosti izostati.

Ipak, treba uzeti u obzir da neznačajnost pojedinih rezultata može biti posledica ograničenja ovog istraživanja, a ne stvarnog odsustva razlika. Naime, kao glavno ograničenje našeg istraživanja prepoznaje se veličina uzorka, koja je uslovljena težinom dolaska do istog, i koja može biti potencijalni razlog izostanka statističke značajnosti pojedinih rezultata. Kao još jedno ograničenje prepoznaje se to što, osim demografskih, nije obuhvaćen veći broj varijabli koje se tiču klijenta. Međutim, oba ograničenja koja su pripisana ovom istraživanju ujedno predstavljaju i praktične implikacije za buduće istraživačke napore prilikom istraživanja fenomena rane psihičke promene. Osim što povećava korpus dosadašnjih saznanja o fenomenu rane promene i mogućnostima njegove predikcije, naše istraživanje karakterišu i praktične implikacije, koje se prvenstveno ogledaju u pospešenju kvaliteta psihološke prakse. Naime, na osnovu procene klijentovog ranog odgovora na tretman, praktičari mogu prilagođavati svoje buduće intervencije onim klijentima kod kojih je očekivan nepovoljan ishod tretmana. Praktične implikacije slede i iz potvrde prediktivnog potencijala varijabli klijenta u predviđanju promene putem nepoželjnih ranih putanja, budući da se nakon uvida u klijentove početne odlike mogu prepoznati upravo oni klijenti za koje je indikovano osmišljavanje posebnog plana tretmana kako bi se prevenirao njegov nepovoljan ishod.

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CLIENT'S CHARACTERISTICS AS PREDICTORS OF EARLY PSYCHOLOGICAL CHANGE DURING TREATMENT

Abstract: The phenomenon of client's early psychological change during psychological treatment has generated growing interest among researchers. The aim of this study is to identify and examine different early change trajectories of distress and to examine the possibility of predicting how the clients would change depending on their initial characteristics. The sample of 161 participants filled out a distress assessment instrument on three occasions – prior to treatment and after sessions 3 and 6. The latent class analysis and multinomial logistic regression yielded the results indicating three latent classes – the *no change* trajectory, the *early change* trajectory and the *gradual change* trajectory. Additionally, the latent class membership could be predicted by participants' initial distress and educational status.

Key words: Trajectories of early psychological change, distress, psychological treatment, client's initial characteristics, latent class analysis

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1. Introduction

Early change refers to the phenomenon which was detected while researching different trajectories of psychological change. Some patients receiving psychological treatment may experience a significant psychological improvement at the very beginning of treatment (Lambert, 2005). Researchers have increasingly focused their attention on the changes that occur in the initial stage of psychological treatment, since the early response to treatment has been recognized as an indicator of a positive outcome and the long-term effects of the treatment (e.g. Aderka, Nickerson, Bøe & Hofmann, 2012; Flückiger, Del Re, Wampold, Symonds & Horvath, 2012; Lutz, Stulz & Köck, 2009; Van et al., 2008). The early change trajectory has been consistently identified in various studies investigating different trajectories of psychological change, both in homogeneous (e.g., Lutz et al., 2014) or heterogeneous samples (e.g., Stulz, Lutz, Leach, Lucock & Barkham, 2007). However, almost all previous studies were conducted on clinical population samples, so early change was equated with a change in psychological symptoms (e.g., Melchior et al., 2016; Smits, Stinckens, Luyckx, & Claes, 2015). Therefore, these studies cannot offer accurate expectations of early psychological change in clients from a non-clinical population. In order to monitor changes in clients undergoing treatment, it is necessary to use indicators of their condition that will help researchers detect potential psychological changes. It is essential, therefore, to carefully select indicators of the client's condition when conducting psychological treatment research. Researchers in the field agree that one such indicator is the degree of client distress, and that it should be measured in studies involving both clinical and non-clinical samples (Horowitz, Strupp, Lambert, & Elkin, 1997).

Some psychological theories and models explain why a reduction of distress is to be expected at the very beginning of treatment. The Common Factors Model (Frank, 1961) proposes that the key mechanism of the client's psychological change is activated at the initial phase of treatment – the client's hopes for their improvement grow simply because they have begun psychological treatment. Before treatment, the client is demoralized and highly disturbed by the realization that they may

have a psychological problem. After the treatment has started, however, the client's expectations of solving their problem in cooperation with the professional begin to grow. As a result, the client's emotional distress is reduced (Frank, 1973). A similar assumption can be found in the Transtheoretical Model of Change (Prochaska & DiClemente, 1982). According to this model, the first phase of treatment is devoted to experiential processes that lead to a reduction of initial distress values. Some examples of experiential processes are dramatic relief, social release, increased awareness, change in self-evaluation and evaluation of the environment. The Phase Model of psychotherapy (Howard, Lueger, Maling & Martinovich, 1993) is another model which proposes that the level of acute distress is the first to change upon starting treatment. This model proposes that prior to starting treatment most clients feel helpless and hopeless, which causes a high degree of distress. The start of treatment stimulates remoralization, i.e., the mobilization of forces that will be used further during the treatment to solve problems and/or get rid of psychological ailments. Instead of remoralization, the authors of this model use the term "increase in subjective well-being ", which is operationalized as a reduction in the client's acute distress (Howard et al., 1993).

These theories were also empirically reinforced. Many studies have shown that the negative indicators of the client's state underwent the greatest changes in the initial stages of treatment, following a negative acceleration trajectory (e.g., Baldwin, Berkeljon, Atkins, Olsen & Nielsen, 2009; Barkham, Rees, Stiles, Hardy & Shapiro, 2002; Sembill, Vocks, Kosfelder & Schöttke, 2017). Barkham et al. (2002) found that a significant reduction of distress occured after the second treatment session, and then continued to decrease on a non-linear slope as the treatment progressed. Most empirical studies of this topic have been concerned with verifying the accuracy of the Phase Model of Psychotherapy (Howard et al., 1993). The results of these studies lead to the conclusion that the notion of universal trajectories of change common to all clients should be abandoned. Instead, research should seek to identify specific trajectories of change for each indicator of the client's condition. Most empirical studies did bear out the initial hypotheses of the Phase Model, but also showed that they are not universally applicable. To be precise,

an early change in the negative indicators of the condition is detected in the initial phase of the treatment in most clients who start treatment with low to moderate symptomatic distress. However, early change is not observable in clients who begin treatment with more severe symptoms (e.g., Joyce, Ogrodniczuk, Piper & McCallum, 2002; Stulz & Lutz, 2007).

Looking at how the client's mental state changes during treatment, the findings so far suggest individual differences play a significant role. A marked improvement in mental state in the early phase of treatment is not detected in clients who start treatment with a high degree of symptomatic distress (e.g., Melchior et al., 2016). Additionally, the initial phase of treatment for clients with increased symptoms is characterized by stagnation or even significant deterioration (e.g., Swift, Callahan, Heath, Herbert & Levine, 2010). On the other hand, a marked improvement occurs in clients who, prior to starting treatment, have moderate symptoms. Clients who start treatment in a good mental state show very slight early change or no change at all; these findings can be explained by the "floor effect" (e.g., Finch, Lambert, & Schaalje, 2001; Smits et al., 2015).

Trying to predict the trajectories of change has become more complicated after studies were published which showed that clients with the same initial intensity of symptoms can undergo changes that follow markedly different trajectories (e.g., Owen et al., 2015; Stulz, Gallop, Lutz, Wrenn, & Crits-Christoph, 2010). Due to these studies and the theories that stress the importance of clients' traits for the process and outcome of psychological treatment (Orlinsky, Rønnestad, & Willutzki, 2004; Swift & Greenberg, 2012), research has begun to focus on client variables as predictors of specific trajectories of change. Few studies have been conducted on this topic, and on the trajectories of early psychological change in particular. The findings so far suggest that certain client variables are significant for predicting whether the client will experience change in the early stages of treatment. According to the results of the study conducted by Sembill et al. (2017), female respondents are more likely to experience a psychological change in the initial phase of treatment than male respondents. Clients who have higher education and are employed show a significantly higher probability of experienc-

ing early psychological changes compared to clients who have lower education and/or are unemployed (Melchior at al., 2016). It should be noted that these conclusions are derived from a modest corpus of previous studies. It is to be hoped that further research will shed more light on the phenomenon of early change and how to predict it, which is the general aim of this study.

This aim involves two specific research aims: the first one is to verify the assumption that the early change in distress in clients undergoing treatment can occur on markedly different trajectories. The second one is to verify the assumption that the client's initial characteristics can be used to predict the trajectories of the client's distress in the early phase of psychological treatment.

2. Method

2.1. Sample

The sample consists of 161 respondents, clients of the Psychological Counseling Unit of the War Trauma Center and the Youth Counseling Unit of the Novi Sad Humanitarian Center. The sample is made up of adults from the non-clinical population, 49 male and 112 female. The average age of the respondents is 30.71 (SD = 10.07; Mode = 22), ranging from 18 to 63 years. Out of the total sample, 1.2% respondents have elementary education, 52.2% of respondents have secondary education, 19.9% are undergraduate students, while 26.7% have university education. Also, there are 38.7% employed and 61.3% unemployed respondents in the sample.

2.2. Procedure

The research was conducted as part of a wider research project, with mandatory informed consent of the respondents obtained. Potential respondents could apply to participate in free psychological treatment. Upon consulting the exclusion criteria, the research sample was selected. All respondents received free individual treatment consisting of ten one-hour sessions, one session per week. At the same time, the re-

spondents were repeatedly tested with a battery of instruments in order to monitor changes in their mental state. The first three measurements are especially important for this research: the first was done before the beginning of the first session, the second after the end of the third session, and the third after the end of the sixth session.

2.3. Instruments

The list of basic data was used to collect information about the respondents. The list consists of questions related to the demographic characteristics of the respondents (gender, age, education, employment status), and was administered at the start of the first session.

The Depression, Anxiety and Stress Scale - 21 (DASS-21; Lovibond & Lovibond, 1995) was used to assess the degree of distress, i.e., general anxiety of the respondents. It consists of three subscales – depression, anxiety and stress. The scale forms a total summative score with a theoretical range from 0 to 63, whereby higher scores indicate a higher degree of distress. The respondents used a four-point Likert scale ranging from 0 (not at all) to 3 (mostly or almost always) to evaluate the degree to which items reflect their feelings during the previous week. This scale has excellent psychometric properties, as well as its high applicability in the context of psychological treatment evaluation (e.g., Ronk, Korman, Hooke & Page, 2013). The instrument also showed excellent psychometric characteristics in this research, since high internal consistency coefficients were obtained on the first (α = .93), second (α = .93) and third measurements (α = .92). In this research, only the total score of the instrument was used as a measure of the respondent's distress, and the instrument was applied before the beginning of the first, and after the end of the third and sixth sessions.

2.4. Data Processing

To verify the assumption that the early distress change in clients undergoing treatment can occur on markedly different trajectories, latent class analysis was applied using the Mplus 7.32 statistical package. The assumption that the client's initial characteristics can be used to

predict the trajectories of distress in the early phase of psychological treatment was verified using the IBM SPSS 24 multinominal logistic regression package.

3. Results

3.1 Specific trajectories of early distress change

The goal of latent class analysis was to identify subsamples of respondents—latent classes—based on similar distributions of distress change scores, with different score distributions characteristic of different subsamples (Muthén & Muthén, 1998–2012). To estimate the optimal number of latent classes of respondents, fit indicators based on maximum credibility values were used: Akaike information criterion (AIC; Akaike, 1987), Bayesian information criterion (BIC; Schwarz, 1978), as well as sample size adjusted Bayesian information criterion (saBIC; Sclove, 1987), with lower values of these indicators suggesting that a more suitable model should be selected (Morin, Morizot, Boudrias, & Madore, 2011). The adjusted Lo-Mendell-Rubin test (aLMR; Lo, Mendell, & Rubin, 2001) and the bootstrap likelihood ratio test (BLRT; McLachlan & Peel, 2000), were also used as indicators of the significance of the change, which indicate whether the model with one more latent class provides a statistically significantly better explanation of the data than a model with one less latent class. The higher values of entropy suggest that a better fit than these models exists (Ramaswamy, DeSarbo, Reibstein & Robinson, 1993). With three measurements, the possibility of non-linear changes remains, so the tested models included an assessment of the non-linear effects of the change according to the quadratic function. In total, five potential solutions were tested, starting with one and ending with the five latent classes. Table 1 presents the fit indicators for each of the tested models: it is evident, when comparing the indicators, that the solution with three latent classes stands out as the most suitable.

Table 1. *Fit indicators for models with different numbers of early distress change latent classes*

	AIC	BIC	saBIC	aLMR	BLRT	Entropy
1-class	3866,42	3884,91	3856,92	–	–	–
2-class	3701,47	3732,38	3700,63	164,85**	172,95**	.82
3-class	3583,89	3627,03	3582,71	119,68**	125,58**	.86
4-class	3564,69	3620,16	3563,16	25,92	27,20*	.87
5-class	3545,70	3613,49	3543,85	25,73	26,99*	.87

Note: *AIC* = Akaike information criterion; *BIC* = Bayesian information criterion; *saBIC* = sample adjusted *BIC*; *aLMR* = adjusted Lo-Mendel-Rubin test; *BLRT* = bootstrap likelihood ratio test; p < .05*; p < .01**.

The model with three latent classes shows the lowest values of AIC, BIC and saBIC indicators, the last statistically significant improvement in model explicability (aLMR and BLRT indicators), and a significant increase in entropy compared to the previous models, which do not exibit a significant increase in entropy. Consequently, we can identify three latent classes of respondents with qualitatively different trajectories of early change in distress, presented in Chart 1.
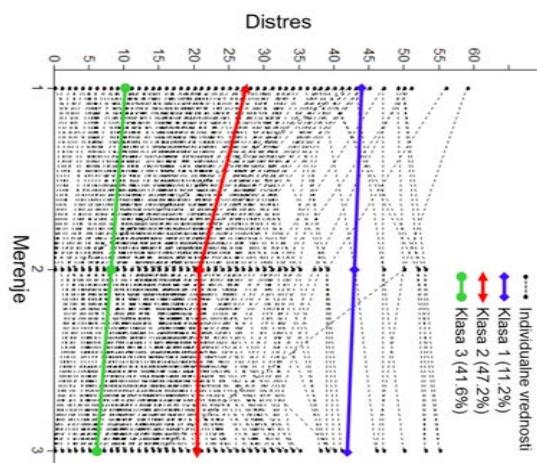
Chart 1. *Three-class model of early distress change*

Table 2 shows that Class 1 respondents do not experience a significant change in distress, considering the insignificant slopes of the curve. Class 2 respondents achieve a non-linear reduction in distress, with a negative acceleration trend. Class 3 respondents's distress level decreases linearly by the third measurement. Variance analysis for repeated measures with class as a grouping variable indicates that, apart from the main effect of measurement (F (2; 157) = 10.22; p < .01), there is also an interaction effect of measurement and belonging to a cluster (F (2; 157) = 3.91; p < .05). This means that distress changes via statistically significantly different trajectories between the identified latent classes.

Table 2. *Parameters of observed latent classes of early distress change*

	N	%	I	SE (I)	S	SE (S)	Q	SE (Q)
Class 1	18	11,2	43,74**	2.,22	-.70	3,68	-.24	1,59
Class 2	76	47,2	27,19**	1,96	-9,26**	2,92	2,86**	1,33
Class 3	67	41,6	10,35**	1,34	-1,96*	1,49	-.03	.66

Note: *N* = number of respondents per class; % = percentage of respondents in the total sample; *I* = average class curve segment; *SE (I)* = standard intercept error; *S* = average class curve slope; *SE (S)* = standard slope error; *Q* = quadratic nonlinear effect; SE (Q) = squared effect standard error of the squared effect; p < .05*; p < .01**.

3.2 Client's initial characteristics as predictors of latent classes membership

Examining the client's initial characteristics as a predictor of latent classes membership was carried out using the multinominal logistic regression method, and the obtained results indicate the statistical significance of the tested model (c^2(10) = 172.92; p < .05). The results in Table 3 indicate that initial distress is a significant predictor in both comparisons, suggesting that as initial distress increases, so does the probability that respondents will be classified in the first latent class (Class 1). With an increase in the initial distress value by one unit, the probability of Class 1 membership is 1.23 times higher than Class 2 membership, and

1.69 times higher than Class 3 membership. Additionally, educational status stands out as borderline statistically significant, whereby more educated respondents are more likely to belong to Class 2 or 3 than to Class 1. With an increase in the value of educational status for one unit, the probability of Class 3 membership is 3.17 times higher than Class 1, and with the same increase, the probability of Class 2 membership is 2.84 times higher than Class 1.

Table 3. *Multinominal logistic regression results*

Latent class[a]		B	se	Wald	df	p	Exp(B)	95% CI
2	Intercept	9,84	3,14	9,81	1	.00	–	–
	Initial distress	-.22	.05	15,98	1	.00	.81	.72 – .89
	Gender	-1,03	.95	1,18	1	.28	.36	.06 – 2,29
	Age	-. 01	.04	.01	1	.94	.99	.93 – 1,08
	Education	1,23	.48	3,17	1	.05	2,84	.95 – 8,76
	Employment	-.26	.77	.12	1	.73	.77	.17 – 3,49
3	Intercept	13,55	3,59	14,41	1	.00	–	–
	Initial distress	-.53	.08	46,52	1	.00	.59	.51 – .69
	Gender	-1,24	1,11	1,26	1	.26	.29	.03 – 2,52
	Age	.02	.05	.18	1	.67	1,02	.93 – 1.12
	Education	1,53	.60	3,73	1	.04	3,17	.98 – 10,21
	Employment	-.87	.99	.77	1	.37	.42	.06 – .29

Note: a = reference group: Latent class 1; *B* = multinominal logistic regression coefficient; *se* = standard error; *Wald* = test statistic; df = degrees of freedom; p = statistical significance parameter; Exp(B) = exponential logistic coefficient; 95% CI = 95% confidence interval for Exp(B).

Table 4. *Additional multinominal logistic regression, a portion of results*

Latent class[a]		B	se	Wald	df	p	Exp(B)	95% CI
3	Intercept	-3,71	1,69	4,80	1	.03	–	–
	Initial distress	-.31	.05	33,06	1	.00	.74	.66 – .81
	Gender	-.22	.58	.14	1	.71	.81	.26 – 2,49
	Age	.02	.03	.61	1	.43	1,02	.97 – 1,08
	Education	.54	.35	2,41	1	.12	1,72	.87 – 3,42
	Employment	-.60	.62	.95	1	.33	.55	.16 – 1,83

Note: a = reference group: Latent class 1; *B* = multinominal logistic regression coefficient; *se* = standard error; *Wald* = test statistic; df = degrees of freedom; p = statistical significance parameter; Exp(B) = exponential logistic coefficient; 95% CI = 95% confidence interval for Exp(B).

Table 4 presents the results of an additional analysis, conducted in order to compare the second and third latent classes. The obtained results suggest a significant predictive potential of distress: as the value of initial distress increases, so does the probability that respondents will be classified in Class 2 than in Class 3. To be precise, with an increase in the value of the initial distress by one unit, the probability of Class 2 membership is 1.35 times higher than Class 3 membership.

4. Discussion

This research identified a number of early change trajectories which were named the trajectory of *no change*, the trajectory of *early change* and the trajectory of *gradual change*. The respondents from the first and smallest latent class (11.20% of the sample) were the most disturbed immediately prior to treatment, i.e., their mental state was the most deteriorated. The stagnation of the mental state was recorded after the sixth treatment session. This is consistent with previous studies which found that in initially highly disturbed clients, improvement is expected only in the later stages of treatment (e.g., Melchior et al., 2016). In the

respondents from the second latent class (47.20% of the sample), the mean degree of distress was measured immediately prior to treatment. These respondents exibited the preferred trajectory of early change. A significant distress reduction occurred in the period between Session 1 and 3. After Session 3, the distress continued to decrease more slowly. This is also fully consistent with previous studies which found that early psychological change is detected in those clients who, immediately prior to treatment, experience moderate disturbance and/or symptoms (e.g., Owen et al., 2015). The respondents from the third latent class (41.60% of the sample) started the treatment in the best mental state, i.e., exhibited the least anxiety prior to treatment. With this class, distress decreased along the trajectory of gradual change, declining statistically significantly all the time between sessions 1 and 6. Previous studies (e.g., Smits et al., 2015) showed that clients who start treatment in a good mental state experience either a mild early psychological change or a complete absence of early psychological change. This result is, therefore, also consistent with previous findings.

Examining the prediction of latent classes membership according to clients' initial characteristics, the results obtained confirmed that the initial degree of distress and the educational status of the respondent are relevant for this issue. Depending on the degree of distress prior to treatment, it was possible to predict the trajectory of distress change in respondents. A preferred trajectory of early change was observed in respondents who were moderately distressed prior to treatment. Deviation from the optimal initial distress level increased the likelihood that early distress change would take one of the remaining two trajectories. In other words, high initial distress values increase the likelihood that clients in treatment will be exhibit a no-change trajectory, while low initial distress values increase the likelihood that clients will exhibit a gradual change trajectory. The results suggest that respondents with a higher education level exhibit the preferred trajectories of distress change–early change or gradual change. However, based on the initial level of education, it was not possible to predict statistically significantly which of these two trajectories is more likely to occur. We can conclude that the respondents' education is more relevant when predicting whether the change in the initial phase of treatment will occur or not.

However, it should be noted that the statistical insignificance of certain results may be a consequence of the limitations of this research, and not the actual absence of differences. The main limitation of this research is the sample size. Recruiting a sample of a sufficient size for this research proved to be a challenge. The fact that some results lack statistical significance can be ascribed to this circumstance. Another limitation is that, apart from demographic variables, a large number of client-related variables are not included. However, both limitations are also practical implications for future research into the phenomenon of early psychological change. In addition to increasing the corpus of previous knowledge about the phenomenon of early change and the possibilities of its prediction, this research also has practical implications, mostly concerned with improving the quality of psychological practice. Based on the assessment of the client's early response to treatment, practitioners can adapt their future interventions to those clients who are expected to have an unfavorable treatment outcome. Confirming the predictive potential of client variables in predicting undesirable early change trajectories also has practical implications. An insight into the client's initial characteristics can help practitioners recognize clients in need of a special treatment plan in order to prevent unfavorable treatment outcomes.

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ANKSIOZNOST U NASTAVI STRANIH JEZIKA KOD UČENIKA OSNOVNIH ŠKOLA U SRBIJI

Apstrakt: Ovaj rad ispituje nivo anksioznosti u nastavi stranih jezika kod učenika tri različite osnovne škole u Srbiji (N=151). Instrument koji je u istraživanju primenjen je *Foreign Language Classroom Anxiety Scale* (Horwitz *et al*., 1986). Obrada podataka obuhvatila je analizu odgovora učenika, srednju vrednost stepena anksioznosti učenika u okviru skale, razlike između učenika određenog uzrasta, razlike između učenika u ruralnoj i gradskoj sredini, onih učenika koji pohađaju i privatne časove i onih koji uče samo u školi, kao i uticaj odnosa u okviru učeničke grupe ili percipirane strogosti profesora na nivo jezičke anksioznosti. Rezultati pokazuju da uprkos utvrđenom umerenom nivou anksioznosti, većina učenika oseća uznemirenost kad treba da govori bez prethodne pripreme.

Ključne reči: anksioznost u nastavi stranog jezika, zazor od usmene komunikacije, (pred)ispitna strepnja, bojazan od negativne društvene evaluacije, osnovna škola.

1. Anksioznost i učenje stranih jezika

Anksioznost je verovatno najviše istraživani psihološki fenomen. Priroda i posledice ovog fenomena čest su predmet istraživanja kako pedagoških tako i drugih naučnih disciplina. Iako anksioznost može biti permanentna karakterna osobina, ona može biti i ograničena na specifične situacije kao što je učenje jezika, pa u tom slučaju potpada

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pod kategoriju specifične anksioznosti (Horwitz *et al.*, 1986: 125). Anksioznost u nastavi stranih jezika je danas priznata kao jedistvena i veoma kompleksna forma situaciono specifične anksioznosti koja može predstavljati ozbiljnu prepreku u okviru procesa učenja jezika, bez obzira na to da li je ambijent u kojem se ova aktivnost vrši formalan ili neformalan (Oxford, 1999: 59). Anksioznost učenika je izvorno definisana jednostavno kao osećanje nelagode, frustracije, sumnje-u-sebe, bojazni ili brige (Scovel, 1978: 134), ali su kasnije definicije pokušale anksioznost neposrednije povezati sa kontekstom učenja jezika. Tako Mekintajer (MacIntyre, 1998: 27) ovaj fenomen interpretira kao "zabrinutost i negativnu emocionalnu reakciju koja nastaje prilikom učenja ili upotrebe drugog jezika". Horvic, Horvic i Koup (Horwitz, Horwitz and Cope, 1991:31) je definišu kao "svojevrsni kompleks samo-percepcija, verovanja, osećanja i ponašanja povezanih sa učenjem jezika u učionici koji proističu iz jedinstvenosti procesa učenja jezika".

U klasifikaciji je na početku pravljena razlika između facilitativne (podstičuće) i debilitativne (ustavljajuće) anksioznosti (Scovel, 1978). Debilitativna anksioznost se može razumeti kao osećanje nervoze koja je dovoljno jaka da spreči osobu da u potpunosti izrazi svoje potencijale, dok je facilitativna anksioznost neka vrsta "kreativne" nervoze koja osobu održava dovoljno napetom da aktivira svoje potencijale i da izgradi odgovoran stav prema zadacima koji su joj postavljeni. Koncept facilitativne anksioznosti je pokrenuo kontroverzna gledišta u metodologiji podučavanja jezika. Terel i Rardin (Terrell, Rardin) se slažu da može postojati pozitivna anksioznost pod uslovom da je razumemo kao stanje usredsређenosti i pažnje (citirano u Young, 1992). Hedli (Omaggio Hadley) veruje da bi umereni intenzitet napetosti mogao biti koristan, budući da učenici malo toga usvoje ako su isuviše opušteni (citirano u Young, 1992). Vilijams (Williams, 1991) također smatra da je ova forma facilitativne anksioznosti, u stvari, stanje tihe anksioznosti, pa je sledstveno tome, stimulativna i korisna, za razliku od stanja pojačane anksioznosti koja, uopšteno govoreći, ima paralizirajuće efekte. S druge strane, Krašen (Krashen) tvrdi da u usvajanju jezika ne postoji pozitivna anksioznost, jer je "tradicionalno okruženje prilikom učenja jezika već takvo da pobuđuje anksioznost u stupnjevima koji prevazilaze ono što je blagotvorno" (Young, 1992). Mekintajer i Gardner (MacIntyre and Gardner, 1994) zaključuju da jezički

anksiozni učenici imaju više teškoća da izraze svoje ideje i da su skloni da podcenjuju svoje sposobnosti. Slično tome, Na (2007) smatra da anksioznost "čini da učenici postanu obeshrabreni, da gube poverenje u svoje sposobnosti, da izbegavaju učestvovanje u aktivnostima u učionici, ili čak da odustaju od ambicije da dobro savladaju jezik".

Istraživanje anksioznosti kod učenja stranog jezika je dosad uglavnom bilo fokusirano na izvorišta ovog paralizirajućeg osećanja i na njegove odnose sa drugim varijablama učenja.

Džekson (Jackson, 2002) tvrdi da su nivo kursa, aktivnosti u učionici, nastavnikov stav i ponašanje, uz samu organizaciju kursa najčešći izvori anksioznosti prilikom učenja stranog jezika. Jang (Young 1991: 426) je identifikovao šest velikih izvorišta: (1) personalne i interpersonalne anksioznosti, (2) učenikova verovanja povezana sa učenjem jezika, (3) instruktorova verovanja povezana sa podučavanjem jezika, (4) interakcija između učenika i instruktora, (5) procedure koje se sprovode u učionici, (6) testiranje jezika.

Horvic, Horvic i Koup (Horwitz, Horwitz &Cope 1986) ističu tri ključne komponente anksioznosti kod učenja stranih jezika koje su najšire prihvaćene i istraživane. To su: (1) zazor od komunikacije, (2) (pred)ispitna strepnja, (3) bojazan od negativne evaluacije.

Zazor od komunikacije se definiše kao tip prekomerne opreznosti koju karakteriše strah ili uznemirenost zbog komunikacije s drugim ljudima (Horwitz *et al.*, 1986). Autori ističu da ljudi koji generalno imaju poteškoće da govore pred drugima imaju još veće poteškoće kada to čine na stranom jeziku, jer nemaju kontrolu nad komunikativnom situacijom, njihovo delovanje je pod neprekidnom paskom, a sposobnosti često ograničene (Horwitz *et al.*, 1986). *(Pred)Ispitna strepnja* je tip straha od izvršavanja (ostvarivanja) koji potiče iz straha od neuspeha (Horwtiz *et al.*, 1986). Učenici koji je osećaju su skloni da sebi postavljaju nerealistične ciljeve i da svoje nepotpune učinke vide ne kao prirodni deo razvoja u okviru procesa učenja, nego kao neuspeh koji je rezultat njihove nesposobnosti i nekompetencije. *Bojazan od negativne evaluacije* proističe iz potrebe učenika da izbegne ostavljanje negativnog utiska na druge, a to u ovom kontekstu – učenja stranog jezika – pravi teškoće, budući da se često zahteva komunikacija koju nastavnik neprekidno evaluira. Neki

učenici mogu biti također osetljivi na evaluaciju svojih kolega, bez obzira na to da li je ova realna ili imaginarna (Horwitz *et al.*, 1986).

Mada se zazor od komunikacije, (pred)ispitna strepnja i bojazan od negativne evaluacije mogu interpretirati kao fundamentalne komponente anksioznosti kod učenja i upotrebe stranih jezika, autori naglašavaju da se radi o daleko kompleksnijem fenomenu koji nije samo kombinacija ova tri osećanja. Ipak, ove tri komponente čine integralni deo instrumenta koji su autori konstruisali za merenje anksioznosti – *Foreign Language Classroom Anxiety Scale* (Horwitz *et al.*, 1986) – koji je otad korišćen u brojnim studijama koje se bave ovom temom.

1.2. Anksioznost i druge varijable

Većina afektivnih faktora pokazuju međusobnu povezanost, pa, ni anksioznost ne predstavlja izuzetak, budući da je (usko) povezana sa drugim personalnim karakteristikama i mentalnim stanjima. Tako istraživanja pokazuju da su introvertni učenici skloniji anksioznosti u komunikativnim situacijama (MacIntyre & Charos 1996; Brown, Robson & Rosenkjar, 2001; Liu & Zhang, 2015), jer više vole individualni rad od grupnih aktivnosti kao što su diskusije i situacione igre (role plays). Isto tako, učenici smanjenog samopouzdanja skloniji su anksioznosti i sledstveno tome nerado učestvuju u konverzacijama koje mogu da ugroze njihov ranjivi ego i emocionalnu ravnotežu (Ehrman, 1996; Liu & Zhang, 2015). Značajna korelacija je također zapažena između anksioznosti kod učenja jezika i motivacije. Tačnije, učenik skloniji anksioznosti je, uopšteno govoreći, u manjoj meri motivisan intrinsično, nego što je motivisan zahtevima samog jezika (Liu & Huang, 2011). Konačno, utvrđeno je da anksioznost kod učenja stranih jezika negativno korelira sa veštinama koje su povezane sa emocionalnom inteligencijom (Chao, 2003), ali pozitivno korelira sa perfekcionističkim tendencijama učenika (Gregersen & Horwitz, 2002).

Nažalost, ovako jasne povezanosti nisu pronađene između inteziteta anksioznosti i drugih varijabli koje predstavljaju karakter i sposobnosti učenika (learner variables). Zbog inkonzistentnih rezultata istraživanja uticaj kompetencije učenika, rodne pripadnosti ili uzrasta na anksioznost nije u dovoljnoj meri objašnjen.

Moguće je izvesti zaključak da ograničene lingvističke sposobnosti početnika mogu izazvati viši nivo anksioznosti, što su potvrdile i brojne relevantne studije (Liu 2006; Gardner *et al.*, 1977). U istom duhu, Mekintajer i Gardner (MacIntyre and Gardner 1991: 111) tvrde da "sa porastom iskustva i veštine, na prilično konzistentan način anksioznost opada". Ipak, ovaj je prihvatljivi zaključak doveden u pitanje zahvaljujući rezultatima mnogih istraživanja koja izveštavaju o prisustvu visokog stepena anksioznosti kod naprednih učenika (Cheng, 2002; Ewald, 2007; Kitano, 2001; Marcos-Llinás & Juan-Garau, 2009). Kitano (2001) ovo objašnjava time da je povišena anksioznost među naprednim učenicima najverovatnije posledica povećanja kompleksnosti instrukcija na višim nivoima učenja. Na sličan način, različite studije pokazuju da ocenjivanje na kursevima jezika ujedno i negativno (MacIntyre & Gardner, 1994; Sparks & Ganschow, 2007), ali i pozitivno (Onwuegbuzie *et al.*, 1999; Bailey & Daley, 2000) korelira sa visinom nivoa anksioznosti.

Istraživanja povezana sa rodnom pripadnošću također pokazuju konfliktne rezultate. Unatoč tome što se studije stranog jezika smatraju (tipično) ženskim domenom (Onwuegbuzie *et al.*, 2001), i što nalazi velikog broja istraživanja pokazuju viši nivo anksioznosti među studentima ženskog pola, naročito u akademskom okruženju (Chang, 1997; Donovan & MacIntyre, 205; Felson & Trudeau, 1991; Daly *et al.*, 1994), do konačnih zaključaka o ulozi rodne pripadnosti ipak nije moguće doći, jer, s druge strane, brojne studije ukazuju na to da značajnih razlika u nivou anksioznosti između učenika muškog i ženskog pola nema. (Aida, 1994; Dewaele, 2002; Onwuegbuzie *et al.*, 1999; Suzić, 2015).

Studije koje su istraživale odnose između uzrasta i anksioznosti kod učenja stranog jezika također ne pokazuju jednoznačne rezultate. Neka istraživanja izveštavaju da su odrasli, studenti na univerzitetima i koledžima, skloniji anksioznosti od dece (Donovan & MacIntyre, 2005; Bailey *et al.*, 2000; Dewaele, 2007). Unutar grupe odraslih, starosti između 18 i 71, kako istraživanje pokazuje, nivo anksioznosti raste srazmerno starosnoj dobi studenata (Onwuegbuzie, 1999). Ipak, neki autori nalaze da je viši nivo anksioznosti prisutan među mlađima (MacIntyre *et al.*, 2002), iako se oni generalno smatraju manje anksioznim i inhibiranim.

Ovako inkonzistentni rezultati istraživanja sugerišu da ni rodna pripadnost, ni uzrast učenika, pa čak ni njihov nivo kompetencije nije nerazdvojivo povezan sa višim nivoima anksioznosti. Upravo iz ovih razloga ova će se studija u većoj meri fokusirati na druge varijable kao što su vršnjačka saradnja, stepen izloženosti stranom jeziku i (ne)urbani kontekst učenja. Hipoteza koju želimo da testiramo jeste da li ovi činioci mogu imati jači uticaj na anksioznost kod učenja stranih jezika.

2. Metodologija istraživanja

Istraživanje koje je predstavljeno u ovom radu je sprovedeno u tri osnovne škole: Ivan Gundulić (N=52) u Novom Sadu, Sveti Sava (N=53) u Novoj Pazovi i Vuk Karadžić (N=46) u Baču. Uključen je ukupno 151 učesnik, od toga 75 dečaka i 76 devojčica koji pohađaju jednu urbanu (N=52) i dve ruralne (N =99) škole. Iz svake od ovih škola izabrane su po dve generacije učenika: desetogodišnji učenici četvrtog razreda i trinaest učenika starosti trinaest, odnosno četrnaest godina koji pohađaju sedmi, odnosno osmi razred.

Glavni ciljevi ove studije su sledeći:

(1) Identifikacija nivoa anksioznosti u svakoj od ovih grupa.

(2) Ispitivanje da li postoje značajne razlike u stepenu anksioznosti između:

- Učesnika koji dolaze iz urbanih i ne-urbanih područja;

- Učenika muškog i ženskog pola;

- Dve generacije učenika (starosti 10 i 13 do 14 godina);

- Učesnika koji pohađaju i privatne škole stranih jezika i onih koji uče samo u državnim školama.

(3) Ustanovljavanje da li postoji neka korelacija između nivoa anksioznosti i

- Atmosfere u učionici i

- Nastavnika

2.1. Instrument

Instrument upotrebljen u ovom istraživanju je adaptirana verzija upitnika - *Foreign Language Classroom Anxiety Scale* (FLCAS) – koji je preveden na srpski jezik. Originalna verzija sadrži 33 stavke zatvorenog tipa (Horwitz et al., 1986: 129), podeljene u tri kategorije koje mere stepen zazora od komunikacije, ispitne anksioznosti i bojazni od negativne evaluacije. Za potrebe ovog istraživanja dodato je još devet stavki, od kojih su dve opšta pitanja:

• Da li je tvoj nastavnik engleskog jezika isuviše strog?

• Da li pohađaš neku privatnu školu engleskog jezika?

Cilj prvog pitanja dodatog upitniku jeste bilo da utvrdi da li očekivanja nastavnika utiču na intenzitet učenikove anksioznosti, a drugog, da otkrije da li postoji razlika u stepenu jezičke anksioznosti između učenika koji pohađaju privatne škole jezika, koji sledstveno tome imaju više mogućnosti da učestvuju u različitim aktivnostima, i onih koji uče engleski samo u državnim školama.

Upitniku je dodato još sedam stavki sličnih onima koje se nalaze u originalnoj verziji ovog upitnika:

• Neki učenici u našoj grupi se često smeju onima koji greše .

• Na času stranog jezika kada nešto ne znam siguran/sigurna sam da će mi neko iz razreda pomoći.

• Kada izostanem sa časa stranog jezika (zbog bolesti, na primer), znam da će mi drugovi iz razreda objasniti ono što su radili na času.

• U svoje slobodno vreme družim se sa drugovima iz razreda.

• U svom se razredu osećam dobro i nikad ne brinem da li ću ispasti ili zvučati glupo ili luckasto.

• Naš nastavnik nam je zabranio da se smejemo nekome ko pravi greške ili ima poteškoće prilikom govora.

• Naš nastavnik engleskog želi da pomažemo i podržavamo jedni druge.

Ove su stavke dodate originalnoj verziji upitnika da bi se dobio uvid u kvalitet atmosfere u razredu, odnose među učenicima i vršnjačku kooperaciju unutar grupe, budući da ovi faktori doprinose porastu anksioznosti u učionici prilikom nastave stranog jezika.

Učesnici su popunjavali upitnik anonimno na času engleskog jezika koji traje 45 minuta. Za deskriptivnu analizu, analizu varijanse, T-testove nezavisnih uzoraka i Pirsonove korelacije upotrebljen je The Statistical Package for Social Sciences (SPSS 15.0)

3. Rezultati i diskusija

Budući da su ispitanici popunjavali upitnik birajući stepen prema petostepenoj Likertovoj skali (u rasponu koji obuhvata odgovore od *potpuno se slažem* do *uopšte se ne slažem*), prvo su izračunate srednje vrednosti za svaki iskaz i za svakog učenika, tako da bi mogli biti dobijeni ukupni rezultati.

Tabela 1: Srednja vrednost stepena anksioznosti

		Zazor od komunikacije (11-55)	Ispitna strepnja (15-75)	Bojazan od negativne evaluacije (7-35)	Ukupni opseg nivoa anks. (33-165)
Ivan Gundulić	N	52	52	52	
	Srednja vred.	**32.69**	**41.27**	**19.33**	**93.29**
	S. D.	5.75	6.72	5.82	15.26
Sveti Sava	N	53	53	53	53
	Srednja vred.	**32.96**	**45.96**	**21.36**	**100.28**
	S. D.	9.48	12.04	6.35	25.04
Vuk Karadžic	N	46	46	46	46
	Srednja vred.	**33.13**	**46.07**	**20.98**	**100.17**
	S. D.	7.14	9.46	5.56	19.76

Kao što pokazuje Tabela 1, rezultati sve tri škole pokazuju umereni nivo anksioznosti u sve tri kategorije – zazora od komunikacije, ispitne strepnje i bojazni od negativne evaluacije – kao i sveukupnog nivoa anksioznosti.

Iako umereni intenzitet anksioznosti nije alarmantan, odgovori na neke od stavki FLCAS-a otkrivaju da napetost koju učenici osećaju u određenim situacijama nije nipošto beznačajna što bi moglo imati ozbiljnog uticaja na njihove ciljeve (learning goals).

Mnogi učesnici su napisali:

• Da se nikada ne osećaju sasvim sigurni kada treba da govore na časovima stranog jezika (46.40%).

• Da strepe kada očekuju da će biti prozvani da odgovaraju na časovima jezika (42.30%).

• Da ih hvata panika kada treba da govore bez pripreme (49 %).

• Da ponekad budu toliko nervozni na času, da zaboravljaju ono što znaju (45.10%).

• Da se osećaju anksiozno, čak i ako su dobro pripremljeni za čas jezika (51%).

• Da osete kako im srce lupa kada očekuju da budu prozvani na času jezika (52.90%).

• Da postaju nervozni i zbunjeni dok govore (41.80%).

• Da se ne osećaju sigurno i opušteno pre početka časa jezika (49.40%).

• Da postaju nervozni kada nemaju unapred pripremljene odgovore na pitanja koja nastavnik jezika postavlja (43.70%).

Ovi odgovori spadaju u sve tri kategorije FLCAS-a, a ono što im je zajedničko jeste izražen strah od komunikacije, bez obzira na to da li se radi o komunikaciji na času ili sa izvornim govornikom tog jezika.

Alarmantno je što više od polovine učenika *oseća da im srce lupa kada očekuju da budu prozvani*, budući da tako snažna manifestacija anksioznosti ne samo što može uticati na proces učenja, nego i na ukupno samopouzdanje i dobrobit samog učenika. Potrebno je uočiti tako-

đer da odgovori otkrivaju povećanu anksioznost u slučaju da učenici misle da se nisu dobro pripremili. To bi se moglo objasniti neprimerenim ciljevima nastave koje postavljaju nastavnici, pristalice tradicionalnih metoda podučavanja, ili sami učenici prenoseći pogrešne strategije učenja iz drugih disciplina na učenje stranih jezika. U okviru tradicionalnog sistema školovanja, kakav je i ovaj u Srbiji, usmena aktivnost je često u značajnoj meri svedena na formu prezentacije memorisanog znanja. Nasuprot tome, komunikacija u stvarnom životu predstavlja spontan i nepredvidiv proces za kojeg se nije moguće unapred pripremiti i oni učenici koji se isuviše oslanjaju na pripremu će vrlo verovatno biti skloni da je izbegavaju.

Neki odgovori takođe otkrivaju da se učenici plaše da će im se drugovi iz razreda smejati kada govore (43,10%) ili da se neće osećati prijatno u društvu govornika čiji je engleski maternji jezik (45%). Posledica takvih verovanja i osećanja po svoj prilici je to da će oni izbegavati komunikativne aktivnosti na stranom jeziku, kako u učionici, tako i u stvarnom životu, što bi upravo trebalo da bude osnovni cilj procesa učenja.

Veliki broj učenika izveštava da se boje da će ih njihov nastavnik stranog jezika ispravljati svaki put kada naprave grešku (46,40%). Budući da procenat učenika koji su odobrili ovu stavku prevazilazi postotak onih koji misle da je njihov nastavnik strog (39,10%) i da se ovaj strah do neke mere može činiti iracionalnim, ipak, tek bi daljnje istraživanje otkrilo da li se nastavnici konzistentno pridržavaju modernih principa korekcije grešaka, drugim rečima, da li se uzdržavaju od ispravljanja grešaka kada je fokus na fluentnosti, a ne na tačnosti.

Što se tiče srednjih vrednosti, opaža se neznatna razlika kada je u pitanju strah od ispitivanja i sveukopnog stepena anksioznosti među grupama učenika. Učenici škole Ivan Gundulić svedoče o nižem nivou anksioznosti od ostalih učesnika. Budući da je ovo jedina škola smeštena na urbanom području unutar ovog istraživanja, izvršeno je istraživanje T-testa nezavisnih uzoraka sa namerom da se identifikuju potencijalne statističke razlike među izveštajima škola iz urbanih i ne-urbanih područja.

Tabela 2a: Grupna statistika – urbana/ne-urbana područja

		N	Sredina	Standard. devijacija
Zazor od komunikacije	Urbano područje	52	32.69	5.75
	ne-urbano područje	99	33.04	8.43
Ispitna strepnja	Urbano područje	52	41.27	6.72
	ne-urbano područje	99	46.01	10.87
Bojazan od negativne evaluacije	Urbano područje	52	19.33	5.82
	ne-urbano područje	99	21.18	5.97
Ukupni stepen anksioznosti	Urbano područje	52	93.29	15.26
	ne-urbano područje	99	100.23	22.63

Tabela 2b : T-test nezavisnih uzoraka – urbano/ne-urbano područje

	t	df	Sig. (2-tailed)	Srednja razlika
Zazor od komunikacije	-.27	149	.79	-.35
Ispitna strepnja	-2.87	149	**.00**	-4.74
Bojazan od negativne evaluacije	-1.83	149	.07	-1.85
Ukupan stepen anksioznosti	-1.99	149	**.05**	-6.94

Rezultati prikazani na Tabeli 2b ukazuju na statistički značajnu razliku između urbanih i ne-urbanih škola u pogledu ukupnog stepena anksioznosti i ispitne strepnje. Učenici koji pohađaju škole u urbanim područjima očigledno pokazuju manje anksioznosti od onih u ne-urbanim područjima. Daljnja istraživanja bi mogla utvrditi da li je veći stepen anksioznosti na ovim područjima prouzrokovan kvalitetom nastave, koji se generalno smatra višim na urbanim područjima, ili je nastao pod uticajem nekih socijalnih faktora. Dosad se mali broj studija fokusirao na kontekst urbanih, odnosno ne-urbanih (ruralnih) škola, a rezultati tih studija su inkonzistentni. U sličnoj studiji u Indoneziji, na primer, učenici iz urbanih škola su pokazali više straha od negativne evaluacije, dok su učenici iz ne-urbanih područja pokazali viši stepen zazora od komunikacije (Anjaniputra, 2021).

T-test nezavisnih uzoraka je korišćen da bi se proverilo da li ima značajnih razlika između učesnika muškog i ženskog pola, ali u ovom istraživanju takve razlike nisu pronađene.

Analiza se nadalje fokusirala na stepen anksioznosti kod dve generacije učenika koje su bile uključene u ovo istraživanje: učenike četvrtog razreda, starosti deset godina i učenike sedmog, odnosno osmog razreda, starosti trinaest, odnosno četrnaest godina.

Tabela 3a: Grupna statistika – uzrast učenika

	Uzrast učenika	N	Srednja vrednost	Standard. Devijacija
Zazor od komunikacije	Četvrti razred	52	32.54	6.26
	Sedmi i osmi razred	99	33.12	8.24
Ispitna strepnja	Četvrti razred	52	43.13	8.49
	Sedmi i osmi razred	99	45.03	10.52
Bojazan od negativne evaluacije	Četvrti razred	52	19.06	5.36
	Sedmi I osmi razred	99	21.32	6.14
Ukupna anksioznost	Četvrti razred	52	94.73	17.46
	Sedmi I osmi razred	99	99.47	21.99

Tabela 3b: T-test nezavisnih uzoraka – uzrast učenika

	t	df	Sig. (2-tailed)	Srednja razlika
Zazor od komunikacije	-.45	149	.66	-.58
Strah od ispita	-1.12	149	.26	-1.90
Bojazan od negativne evaluacije	**-2.25**	**149**	**.03**	**-2.27**
Ukupna anksioznost	-1.35	149	.18	-4.74

T-test nezavisnih uzoraka pokazuje statistički značajne razlike među dvema grupama u njihovim izveštajima koji se tiču *bojazni* od negativne evaluacije. Stariji *učesn*ici, naime, skloniji su ovoj bojazni od mlađih. Ovakvi bi rezultati mogli biti povezani sa emocionalnom ranjivošću koja je karakteristič*na za pubertet* kada se reakcije i procene vršnjaka ili određenih autoriteta smatraju važnim, i čak mogu da ugroze ego i samopouzdanje učenika. Ipak, rezultati ove studije ne mogu podržati generalne zaključke o uticaju uzrasta na anksioznost, budući da nije opažena nikakva značajna razlika u pogledu komunikacijskog zazora ili

(pred)ispitne strepnje. Štaviš*e, slično* istraživanje sprovedeno u Srbiji je pokazalo da su mlađi učenici izveštavali o višem nivou straha od ispitivanja od svojih starijih drugova (Suzić, 2015).

T-test nezavisnih uzoraka je također bio korišćen u svrhu analize razlike u intenzitetu anksioznosti o kojoj izveštavaju učenici koji pohađaju privatne škole stranih jezika i onih koji uče engleski samo u državnim školama. Rezultati koji su dobijeni prikazani su na Tabelama 4a i 4b.

Tabela 4a: Grupna statistika – pohađanje/ne-pohađanje privatne škole jezika

	Pohađanje privatne škole jezika	N	Sredina	Standard. Devijacija
Zazor od komunikacije	da	30	31.30	6.64
	ne	100	33.44	7.43
Ispitna strepnja	da	30	41.30	7.84
	ne	100	45.25	9.87
Bojazan od negativne evaluacije	da	30	17.73	6.18
	ne	100	21.31	5.41
Ukupna anksioznost	da	30	90.33	17.70
	ne	100	100.00	20.01

Tabela 4b: T-test nezavisnih uzoraka – pohađanje/ne- pohađanje privatne škole jezika

	t	df	Sig. (2-tailed)	Srednja razlika
Zazor od komunikacije	-1.42	128	.16	-2.14
Ispitna strepnja	-2.01	128	**.05**	-3.95
Bojazan od negativne evaluacije	-3.07	128	**.00**	-3.58
Ukupna anksioznost	-2.38	128	**.02**	-9.67

Statistički značajne razlike se mogu opaziti kod rezultata koji se odnose na ispitnu strepnju, bojazan od negativne evaluacije i ukupnu anksioznost. Grupa učenika koja ne pohađa dodatnu nastavu engleskog

jezika pokazuje veći stepen anksioznosti. U sličnom istraživanju koje su sprovele Suzić i Radić-Bojanić (2017) učenici koji nisu pohađali privatne škole stranih jezika, pokazali su viši ukupni nivo anksioznosti. Ovako konzitentni rezultati sugerišu da povećana izloženost stranom jeziku smanjuje anksioznost. Naravno, ne mogu svi učenici sebi priuštiti časove u privatnoj školi, pa bi zbog toga vredelo razmotriti mogućnost da škole same obezbede dodatnu nastavu stranog jezika, bilo opcionalnu ili obaveznu. Interesantno je zapaziti, s druge strane, odsustvo značajnih razlika u zazoru od komunikacije, iako je razložno pretpostaviti da bi povećana izloženost stranom jeziku morala smanjivati ovaj tip anksioznosti.

Uticaj atmosfere u učionici i percipirana strogost nastavnika analizirana je pomoću Pirsonovih korelacija.

Srednja vrednost rezultata sedam iskaza dodatih originalnoj verziji upitnika u svrhu ustanovljavanja odnosa unutar grupe je potom izračunata i upoređena sa srednjom vrednošću rezultata dobijenih za četiri kategorije – ukupni stepen anksioznosti, zazor od komunikacije, (pred) ispitna strepnja i bojazan od negativne evaluacije. Veoma značajna negativna korelacija je ustanovljena između odnosa u učionici i zazora od komunikacije (r=-0.199, p≤0.01), što znači da su učenici koji osećaju da atmosfera u grupi nije prijateljska i da im nedostaje uzajamna podrška, skloniji osećanju anksioznosti prilikom izvršavanja komunikativnih zadataka od onih koji osećaju podršku svojih drugova i koji su dobro prihvaćeni u razredu. Ovaj rezultat potvrđuje zaključke brojnih studija u kojima se naglašavaju blagotvorni efekti vršnjačke kooperacije i percipirane emocionalne podrške drugih učenika na anksioznost povezanu sa stranim jezikom (Frantzen & Magnan, 2005; Jin & Dewaele, 2018; Nagahashi, 2007). Iznenađuje, međutim, da značajna korelacija između percipirane strogosti nastavnika i povećanja nivoa anksioznosti nije pronađena, mada je bilo predpostavljeno da je uloga nastavnika u kreiranju opuštenije atmosfere za vreme časa veoma istaknuta. Ipak, ovi rezultati ne umanjuju značaj nastavnika zato što pokazuju pozitivnu korelaciju između strogosti nastavnika i dobrih odnosa u razredu (r=0.164, p≤0.05), što sugeriše da, iako, uopšteno govoreći, prijateljski raspoloženi i demokratski nastrojeni nastavnici uživaju naklonost učenika i da su, bez sumnje, daleko efikasniji u smanjenju tenzija, razumna

i umerena strogost poboljšava odnose među učenicima, što verovatno proističe iz bolje kontole nad interakcijom unutar grupe i uspešnijim ograničavanjem nepoželjnog ponašanja i kompetitivnosti.

4. Zaključak

Na osnovu rezultata ove studije mogu se izvući sledeći zaključci.

(1) Učenici osnovnih škola u Srbiji pokazuju umereni nivo anksioznosti u učionici prilikom nastave stranog jezika. To se na prvi pogled može činiti ohrabrujuće, ali analiza njihovih odgovora otkriva da tenzija koju osećaju u nekim situacijama prilikom učenja ima snažne debilitativne (ustavljujuće) efekte, naročito kada očekuju da će biti prozvani da odgovaraju ili kada je potrebno da govore bez pripreme, što dovodi do toga da učenici nerado učestvuju u komunikaciji.

(2) Nisu otkrivene značajne razlike između učenika muškog i ženskog pola, ali su pronađene kod grupa učenika različitog uzrasta. Naime, mlađi učenici osećaju se u manjoj meri anksiozni od starijih, koji izveštavaju o većam stepenu bojazni od negativne evaluacije. Učenici koji pohađaju ne-urbane škole pokazuju veći stepen strepnje kod ispitivanja i viši ukupni nivo anksioznosti. Pohađanje privatnih škola ili dodatne nastave jezika koji omogućuju veću izloženost jeziku i daju više mogućnosti učestvovanja u komunikativnim aktivnostima smanjuju ukupni nivo anksioznosti, bojazan od negativne evaluacije i (pred)ispitnu strepnju. Jedina komponenta na koju, kako se čini, uzrast, sredina ili dodatna izloženost stranom jeziku ne utiče jeste zazor od komunikacije.

(3) S druge strane, prijateljska atmosfera u učionici i dobri odnosi unutar grupe redukuju samo zazor od komunikacije. Zanimljivo je da je interakcija unutar grupe pozitivno korelirana sa strogošću nastavnika. Dobijeni odgovori sugerišu da se ova poželjna forma strogosti mora najverovatnije interpretirati kao spremnost da se postave granice, a ne kao spremnost da se ispravljaju sve, i krupnije i sitnije, greške na koju se učenici tuže.

Neki se zaključci u ovom istraživanju ipak ne mogu generalizirati, osobito oni koji se odnose na uticaj rodne pripadnosti i uzrasta, usled inkonzistentnih rezultata ranijih studija. Ipak, sveukupni rezultati ukazuju na izvorište anksioznosti koje se pokazalo da je od krucijalnog značaja i koje iziskuje da mu se posveti više pažnje i istraživanja – a to je strah od govora, naročito govora bez prethodne pripreme. Veliki deo istraživanja pokazuje da je najčešći uzrok anksioznosti to što učenici moraju da progovore glasno pred svojim drugovima. Oni često misle da će biti ismejani zbog svojih grešaka, lošeg izgovora ili nesposobnosti da na odgovarajući način izraze svoje ideje (Price, 1992: 104). Čak i ako se takav strah može smatrati iracionalnim, povezanim sa samopuzdanjem učenika, strahom od javnog govora ili perfekcionizmom, jedan od efikasnijih načina suprotstavljanja ovoj nelagodi, kako ova sudija pokazuje, jeste uspostavljanje atmosfere uzajamnog pružanja podrške u učionici.

4.1 Pedagoške implikacije

Da bi se nastava jezika učinila manje stresnom, nastavnici treba da ohrabre učenike uveravajući ih da praviti greške nije ništa loše, povremeno naglašavajući vrednost grešaka u nastavi (Price, 1992: 105). Ispravljanje uglavnom treba izbegavati kada je fokus na fluentnosti, ili činiti to nenametljivo, podstičući samo-korigiranje, ako je to baš neophodno i korisno. Uz to, nastavnik treba da postavlja realistične ciljeve koje će jasno obrazložiti, naročito onim učenicima koji su preambiciozni, jer su ovi skloni – isuviše često – da od sebe očekuju da za kratko vreme razviju fluentnost poput one na maternjem jeziku, govor bez grešaka i besprekoran izgovor, pa se, konsekventno, u slučaju da im to ne pođe za rukom, osećaju inferiorno i anksiozno.

Budući da mnogi učenici izveštavaju o pojačanoj anksioznosti kada ih prozivaju nasumce I kada moraju da govore pred celim razredom, nastavnici treba da pažljivo planiraju aktivnosti birajući takve za koje se zna ne izazivaju pojačane anksiozne reakcije, kao što su rad u grupama, u parovima ili razne igre. Ipak, oprez nije na odmet kada se narušava uobičajena rutina aktivnosti na času. Tako, na primer, diskusija u malim grupama se često smatra zadatkom koji ne izaziva anksioznost, ali ako

učenici nisu upoznati sa formatom, ova aktivnost inicijalno može iza-zvati povišenu tenziju, upravo zbog nedostatka tog iskustva.

U tradicionalnim školskim sistemima, da bi se materijal prezento-vao oralno, neophodno je dosta memorisanja i pripreme. Učenici često ovakve navike učenja prenose i na učenje stranog jezika, pa se osećaju nesigurno kada je njihov zadatak manje strukturiran i manje predvidiv. Stoga je dobar korak u pravcu transformacije tradicionalnog plana časa uvođenje strukturiranih i polu-strukturiranih aktivnosti na početku, zato što se ove čine "sigurnijim" i predstavljaju postepeni prelaz od tra-dicionalnog koncepta učenja ka funkcionalnoj upotrebi jezika. Ukoliko je to potrebno, učenicima se može pružiti prilika da razmisle o temi, kratko prodiskutuju o svojim idejama ili čak da ih zapišu, te da ih u obliku beležaka koriste u grupnim diskusijama, koje treba da postepeno postanu regularna aktivnost na času.

Na kraju treba istaći i to, da je mnogo pozitivne podrške i ohra-brivanja od strane nastavnika od suštinskog značaja za kreiranje manje stresne atmosfere na času i boljih međusobnih odnosa unutar grupe.

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Dodatak

Frekventnost odgovora na FLCAS (%)

		Potpuno se slažem	Slažem se	Niti se slažem, niti ne slažem	Ne slažem se	Uopšte se ne slažem
1.	Nikada se ne osećam potpuno siguran/na u sebe kada govorim na *času* stranog jezika.	28.50	17.90	29.10	12.60	11.90
2.	Ne brinem o tome da ću napraviti grešku na času stranog jezika.	23.20	19.90	30.50	13.90	12.60
3.	Drhtim kada znam da će me prozvati da odgovaram na času stranog jezika.	23.80	18.50	18.50	15.20	23.80
4.	Plaši me kad ne razumem *šta* mi nastavnik kaže na stranom jeziku.	13.20	20.50	19.20	21.20	25.80
5.	Ne bi mi uopšte smetalo da imam dodatne časove stranog jezika.	22.50	11.90	17.20	16.60	31.80
6.	Za vreme *časa* (stranog jezika) *često* razmiš*ljam* o stvarima koje nemaju nikakve veze sa predmetom.	.80	21.20	21.20	9.30	12.60
7.	Neprestano mislim da drugi učenici bolje znaju jezike od mene.	18.50	17.20	29.10	19.90	15.20
8.	Obič*no* sam opušten/a prilikom ispitivanja na *časov*ima stranog jezika.	14.60	16.60	27.20	10.60	31.10
9.	Hvata me panika kada sam prinuđen/a da govorim bez pripreme na *času* stranog jezika.	31.80	17.20	17.20	11.30	22.50

10. Brinem za posledice loše ocene iz stranog jezika.	21.90	21.20	19.20	16.60	21.20
11. Ne razumem zašto se neki ljudi toliko uzbuđuju oko *časova* stranog jezika.	15.20	11.90	31.80	15.20	25.80
12. Na *času* stranog jezika postajem toliko nervozan/na da zaboravljam stvari koje znam.	27.20	17.90	13.20	15.20	26.50
13. Sramota me je da se dobrovoljno javljam da odgovaram na *času* stranog jezika.	23.80	9.90	14.60	16.60	35.10
14. Ne bih bio/la nervozna prilikom razgovora na stranom jeziku sa izvornim govornikom.	15.90	11.90	25.80	17.20	29.10
Uznemirava me kada ne razumem *šta* to nastavnik ispravlja.	23.20	19.90	25.80	13.90	17.20
Čak i ako sam dobro pripremljen/a za *čas* osećam strepnju.	33.80	17.20	13.20	15.20	20.50
17. *Često* mi se ne ide na *čas* stranog jezika.	26.50	13.90	27.20	15.20	17.20
18. Samopuzdan/a sam kada govorim na *času* stranog jezika.	17.20	16.60	29.10	16.60	20.50
19. Plašim se da *će* nastavnik ispravljati svaku grešku koju napravim.	21.90	22.50	24.50	14.60	16.60
20. Osećam kako mi srce lupa kada očekujem da *će* me prozvati da odgovaram na *času* stranog jezika.	34.40	18.50	13.20	15.20	18.50

21. *Što* više učim za test, to sam više zbunjen/a.	25.20	17.90	20.50	11.30	25.20
22. Ne osećam pritisak da bih se dobro pripremio/la za *čas* jezika.	31.90	21.90	20.50	9.30	17.20
23. Neprestano imam osećaj da drugi učenici bolje vladaju stranim jezikom od mene.	23.20	15.90	29.80	13.20	17.90
24. Osećam se vrlo ranjivo kada govorim stranim jezikom pred drugim učenicima.	17.90		25.20	15.90	19.90
25. *Čas* jezika se odvija tako brzo da se brinem da ne zaostanem.	19.20	16.60	22.50	17.90	23.80
26. Osećam se napetije i nervoznije na *času* jezika nego na drugim *časov*ima.	19.90	15.90	27.20	11.90	25.20
27. Kada govorim na *času* jezika, postajem nervozan/a i zbunjen/a.	25.20	16.60	17.20	19.20	21.90
28. Pre *časa* stranog jezika osećam se sigurno i opušteno.	11.30	15.20	23.20	17.90	32.50
Postajem nervozan/a kada ne razumem svaku reč koju nastavnik jezika izgovori.	15.90	21.20	26.50	10.60	25.80
30. Zapanjen sam brojem pravila koje je potrebno naučiti da bi se govorilo stranim jezikom.	25.80	14.60	31.10	13.90	14.60
31. Pribojavam se da *će* mi se drugi učenici smejati kada govorim stranim jezikom.	23.20	19.90	11.90	21.90	23.20

Verovatno bih se osećao/la lagodno u društvu izvornih govornika stranog jezika.	11.90	14.60	28.50	23.80	21.20
33. Postajem nervozan/na kada nastavnik jezika postavlja pitanja na koje nemam unapred spreman odgovor.	21.20	22.50	22.50	16.60	17.20

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FOREIGN LANGUAGE ANXIETY AMONG ELEMENTARY SCHOOL STUDENTS IN SERBIA

Summary: This paper examines the level of foreign language anxiety among elementary school students (N=151) attending three different schools in Serbia. The instrument used in this research is the *Foreign Language Classroom Anxiety Scale* (Horwitz *et al.*, 1986). Data analysis involves the analysis of students' responses, their overall mean anxiety scores, the differences between students of different ages, background, and attendance at private language schools or not, as well as the influence of group relationships and the perceived strictness of the teacher. The results show that even though the students report moderate level of anxiety, most of them feel quite anxious when having to speak without previous preparation.

Key words: foreign language anxiety, communication apprehension, test anxiety, fear of negative evaluation, primary school.

1. Foreign language learning anxiety

Anxiety is probably the most researched psychological phenomenon, and its nature and effects are increasingly being examined in a

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number of educational and professional disciplines as well. Although it can be a permanent character trait, it can also be limited to language learning situations, and then it falls into the category of specific anxiety reactions (Horwitz *et al.*, 1986: 125).

Foreign language classroom anxiety is nowadays recognised as a unique and rather complex form of situation-specific anxiety that may seriously impede the process of language learning regardless of whether the setting is formal or informal (Oxford,1999: 59). Learner anxiety was originally simply defined as a feeling of uneasiness, frustration, self-doubt, apprehension or worry (Scovel, 1978: 134), but later definitions try to relate it more specifically to the context of language learning. MacIntyre (1998: 27) interprets it as "the worry and negative emotional reaction aroused when learning or using a second language". Horwitz, Horwitz and Cope define it even more precisely as a "distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process" (Horwitz *et al.*, 1991: 31).

In classifying anxiety, a distinction between facilitative and debilitative anxiety was initially made (Scovel, 1978). Debilitative anxiety can be understood as a feeling of nervousness that is strong enough to prevent a person from fully expressing his or her potentials, whereas facilitative anxiety is a sort of "creative" nervousness that keeps a person tense to the extent needed to activate potential and develop a responsible attitude to the tasks. The concept of facilitative anxiety has raised controversial views in language teaching methodology. Terrell and Rardin agree that there may be positive anxiety if we understand it as a state of attentiveness or alertness (as cited in Young, 1992). Omaggio Hadley believes that a moderate amount of tension might be useful, since students do not absorb anything when they feel too relaxed (as cited in Young, 1992). Williams (1991) also argues that the form of facilitative anxiety is, in fact, a low anxiety state and therefore stimulating and useful unlike high anxiety states that generally have debilitative effects. On the other hand, Krashen claims that there is no positive anxiety in language acquisition since "the traditional language learning environment is already inherently anxiety-evoking at levels beyond the beneficial" (Young, 1992). MacIntyre and Gardner (1994) concluded that

students with language anxiety find it more difficult to express their own views and tend to underestimate their own abilities. Similarly, Na (2007) found out that anxiety "can make learners get discouraged, lose faith in their abilities, escape from participating in classroom activities, and even give up the effort to learn a language well".

The research on foreign language learning anxiety has so far largely focused on the sources of this impeding feeling as well as on its relationship with other learner variables.

Jackson (2002) claims that the course level, activities in the classroom, the teacher's attitude and behaviour, as well as course organization are the most common sources of foreign language learning anxiety. Young (1991: 426) identified six major sources: (1) personal and interpersonal anxieties, (2) learner beliefs about language learning, (3) instructor beliefs about language teaching, (4) instructor-learner interactions, (5) classroom procedures and (6) language testing.

Horwitz, Horwitz and Cope (1986) point out three crucial components of foreign language anxiety most widely accepted and researched (1) communication apprehension, (2) test anxiety, and (3) fear of negative evaluation.

Communication apprehension is defined as a type of shyness characterized by fear of or anxiety about communicating with people (Horwitz *et al.*, 1986). The authors claim that people who generally have difficulties speaking in groups will often have even greater difficulties in a foreign language since they have little control over the communicative situation, their performance is constantly monitored and the facility they possess is often limited (Horwitz *et al.*, 1986). *Test-anxiety* is a type of performance anxiety stemming from a fear of failure (Horwtiz *et al.*, 1986). Students who feel it tend to have unrealistic expectations of themselves, viewing imperfect achievements not as natural developmental part of the learning process, but as failure resulting from their inability and incompetence. *Fear of negative evaluation* arises from a learner's need to avoid making a negative social impression on others. This creates difficulties in this context since foreign language learning requires frequent communication that is constantly evaluated by the teacher. Some learners may also be very sensitive to the evaluation - real or imagined - of their peers (Horwitz *et al.*, 1986).

Even though communication apprehension, test anxiety and fear of negative evaluation may be interpreted as fundamental components of foreign language anxiety, the authors point out that it is a much more complex phenomenon, not simply the combination of these three feelings. However, these very components are integral parts of the instrument the authors designed for measuring anxiety – *Foreign Language Classroom Anxiety Scale* (Horwitz *et al*., 1986) and which has been employed in a great number of studies ever since.

1.2 Anxiety and other learner variables

Since most affective factors tend to be interrelated, anxiety is strongly linked to other personal characteristics and states. Namely, research findings suggest that introvert students are likely to be more anxious in communicative situations (MacIntyre & Charos 1996; Brown, Robson & Rosenkjar, 2001; Liu & Zhang, 2015) due to their preference for individual work over group activities such as discussions or role plays. Likewise, students with lower self-esteem tend to be more anxious and consequently reluctant to take part in conversations that could threaten their vulnerable ego and emotional equilibrium (Ehrman, 1996; Liu & Zhang, 2015). A significant relationship was also observed between language learning anxiety and motivation. More precisely, a more anxious learner is generally less intrinsically motivated, but more motivated by language requirement (Liu & Huang, 2011). Finally, foreign language anxiety was found to be negatively correlated with emotional intelligence skills (Chao, 2003), but positively correlated with students' perfectionist tendencies (Gregersen & Horwitz, 2002).

Unfortunately, such clear relationships were not found between the intensity of anxiety and other learner variables. Due to inconsistent study results, the influence of the learner's competence, gender or age is still not sufficiently understood.

It can be deduced that the limited linguistic abilities that beginner learners possess might provoke higher anxiety levels, and this has been confirmed in a number of relevant studies (Liu 2006; Gardner *et al.*, 1977). Along the same lines, MacIntyre and Gardner (1991: 111) claim that "as experience and proficiency increase, anxiety declines in

a fairly consistent manner". However, this reasonable conclusion was disputed by the results of a great deal of research that reports higher anxiety scores among advanced students (Cheng, 2002; Ewald, 2007; Kitano, 2001; Marcos-Llinás & Juan-Garau, 2009). Kitano (2001) explains that high anxiety among proficient language learners may be due to the increase in the complexity of instruction at higher levels. Similarly, language course grades were found to be both negatively (MacIntyre & Gardner, 1994; Sparks & Ganschow, 2007) and positively (Onwuegbuzie *et al.*, 1999; Bailey & Daley, 2000) correlated with high anxiety levels in different studies.

Gender-related research on anxiety also shows conflicting results. Even though foreign language study is considered to be feminine domain (Onwuegbuzie *et al.*, 2001), findings of a great deal of research indicate higher anxiety levels among female students, particularly in academic settings (Chang, 1997; Donovan & MacIntyre, 2005; Felson & Trudeau, 1991; Daly *et al.*, 1994). However, final conclusions on the role of gender could not be drawn, since a number of studies found no significant difference between the level of anxiety among male and female learners (Aida, 1994; Dewaele, 2002; Onwuegbuzie *et al.*, 1999; Suzić, 2015).

Studies that investigated the relationship between age and foreign language classroom anxiety also show mixed results. A number of researchers report that adults, university and college students tend to be more anxious than children (Donovan & MacIntyre, 2005; Bailey *et al.*, 2000; Dewaele, 2007). In a group of adults aged between 18 and 71, it was found out that the level of anxiety increases with the age of students (Onwuegbuzie, 1999). However, some authors found higher language anxiety scores among younger learners (MacIntyre *et al.*, 2002) although they are generally considered to be less anxious or inhibited.

Such inconsistent research findings might suggest that gender, age of learners or even their level of competence are not strongly linked to high anxiety states. Therefore, this study tries to focus more closely on other variables such as peer cooperation, extent of exposure to the foreign language and (non)urban context of learning with a hypotehesis that they might have stronger influence on the level of foreign language classroom anxiety.

2. The research methodology

The research presented in this paper was carried out in three elementary schools: Ivan Gundulić (N=52) from Novi Sad, Sveti Sava (N=53) from Nova Pazova and Vuk Karadžić (N=46) from Bač. It involved 151 participants altogether, 75 boys and 76 girls attending one urban (N=52) and two rural schools (99). Two generations of students in each school were selected: ten-year-old pupils attending the fourth grade (N=52) and thirteen to fourteen-year-old students attending the seventh or eighth grade (N=99).

The main goals set in this study were the following:

(1)   Identifying the level of foreign language anxiety in each of the groups.

(2)   Investigating whether there are significant differences in anxiety scores between:

- Participants coming from urban and non-urban areas;
- Male and female learners;
- Two generations of students (aged 10 and aged 13 to 14);
    Participants who attend private language schools and those who learn in state schools only.

(3)   Determining whether there is any correlation between anxiety scores and

- The atmosphere in the class and
- The teacher.

2.1. The instrument

The instrument used in this research is the adapted version of Horwitz, Horwitz and Cope's questionnaire - *Foreign Language Classroom Anxiety Scale* (FLCAS) translated into Serbian. The original version contains 33 closed-ended items (Horwitz *et al.*, 1986: 129) that fall into three categories and measure the degree of communication apprehension, test anxiety and fear of negative evaluation. For the purpose of this research, the questionnaire was extended with nine more items, two being general questions:

- Is your English teacher too strict?
- Do you attend any private English language school?

The aim of the first question added to the questionnaire was to find out whether the expectations of the teacher influenced the intensity of learners' anxiety. The second one tried to reveal if there is any difference in the degree of foreign language anxiety between the learners who attend private language schools and consequently have more opportunities to participate in a variety of activities and those who learn English in public schools only.

The questionnaire was also extended with seven items similar to the ones in the original version of the questionnaire:

- Some students in our group tend to laugh at others when they make errors.
- When there is something I don't know in foreign language class, I am sure some of my class-mates will help me.
- When I am absent from foreign language classes (due to being ill, for example), I know that my class-mates will explain to me what they were doing during the class.
- I spend some free time with my class-mates.
- I feel good in my class and never worry whether I might look or sound stupid or silly.
- Our English teacher has forbidden laughing at somebody who is making an error or having problems speaking.
- Our English teacher wants us to support and help each other.

These items were added to the original version of the questionnaire to enable better insight into the quality of the classroom atmosphere, relationships and peer cooperation within the group since these factors might also raise classroom language learning anxiety.

The participants filled in the questionnaire anonymously, during an English class that lasted for 45 minutes. The Statistical Package for Social Sciences (SPSS 15.0) was used for descriptive analysis, analysis of variance, independent samples T-tests and Pearson's correlations.

3. **Results and discussion**

a degree according to the five-point Likert scale (ranging from *strongly agree* to *strongly disagree*), mean values were first calculated for each statement and each student, so that the overall scores could be worked out. The results presented in Table 1 show mean anxiety scores for each of the three schools involved in this research.

Table 1: Mean anxiety scores

		Communication apprehension (11-55)	Test anxiety (15-75)	Fear of negative evaluation (7-35)	Overall anxiety score range (33-165)
Ivan Gundulić	N	52	52	52	52
	Mean	**32.69**	**41.27**	**19.33**	**93.29**
	S. D.	5.75	6.72	5.82	15.26
Sveti Sava	N	53	53	53	53
	Mean	**32.96**	**45.96**	**21.36**	**100.28**
	S. D.	9.48	12.04	6.35	25.04
Vuk Karadžic	N	46	46	46	46
	Mean	**33.13**	**46.07**	**20.98**	**100.17**
	S. D.	7.14	9.46	5.56	19.76

As shown in Table 1, the scores in each of the three schools reflect moderate anxiety levels in all the categories – communication apprehension, test anxiety, fear of negative evaluation and overall anxiety level.

Although moderate intensity of anxiety is not alarming, responses to some FLCAS items reveal that the tension students feel in certain situations is by no means insignificant and might seriously affect their learning goals.

A number of participants[3] report that:

- They never feel quite sure when they are speaking in their foreign language class (46.40%).

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[3] For each of the items presented in the following paragraphs, the percentage was calculated by adding the percentage of students who endorsed the responses – *strongly agree* and *agree*.

- They tremble when they are going to be called on in language class (42.30%).

- They start to panic when they have to speak without preparation (49 %).

- They can get so nervous in language class, they forget things they know (45.10%).

- Even if they are well-prepared for the language class, they feel anxious (51%).

- They can feel their heart pounding when they are going to be called on in language class (52.90%).

- They get nervous and confused when they are speaking (41.80%).

- They do not feel sure and relaxed on their way to the language class (49.40%).

- They get nervous when the language teacher asks questions which they have not prepared in advance (43.70%).

The responses presented above belong to all the three categories of FLCAS, but what they have in common is a strong fear of communication, whether in class or with native speakers. It is quite alarming that more than half of the students *feel their heart pounding when they are going to be called on*, since such strong anxiety manifestations might affect not only the language learning process, but the general self-esteem and well-being of students as well. It is worth noting that some of the responses reveal much higher anxiousness if students think they have not prepared well. This might suggest inappropriate learning goals set either by teachers who favour traditional teaching methods or by the students themselves, who might be transferring inadequate learning strategies from other disciplines to foreign language learning. In traditional school systems, such as the one in Serbia, a significant portion of oral activity is often in the form of presenting memorised knowledge. Conversely, real-life communication is a spontaneous and unpredictable process that cannot be fully prepared in advance and students who rely too much on preparation are likely to avoid taking part in it. Some

of the responses also reveal that students are afraid their peers might laugh at them when they speak (43.10%) or that they would not feel comfortable around native speakers (45%). Such beliefs and feelings are quite likely to make them avoid communicative activities in the classroom as well as real-life communication in the foreign language, which should be the primary goal of the learning process.

A great number of students report that they are afraid their language teacher is ready to correct every mistake they make (46.40%). Since the percentage of students who endorsed this item is higher than the percentage of students who think that their teacher is strict (39.10%), this fear seems to be irrational to some extent, but further research would reveal whether modern principles related to error correction are consistently employed by the teachers, in other words – whether they refrain from correction when the focus is on fluency and not on accuracy.

Going back to mean values, a slight difference can be observed in test anxiety and overall anxiety scores between the three groups of students. The students at Ivan Gundulić school reported lower anxiety levels than the other participants. Since this is the only school located in an urban area in this research, an independent samples T-test was performed with the view of identifying potential statistical differences between the reports in urban and non-urban schools.

Table 2a: Group statistics – urban/non-urban area

		N	Mean	Standard deviation
Communication apprehension	urban	52	32.69	5.75
	non-urban	99	33.04	8.43
Test anxiety	urban	52	41.27	6.72
	non-urban	99	46.01	10.87
Fear of negative evaluation	urban	52	19.33	5.82
	non-urban	99	21.18	5.97
Overall anxiety score	urban	52	93.29	15.26
	non-urban	99	100.23	22.63

Table 2b: Independent samples T-test – urban/non-urban area

	t	df	Sig. (2-tailed)	Mean Difference
Communication apprehension	-.27	149	.79	-.35
Text anxiety	-2.87	149	**.00**	-4.74
Fear of negative evaluation	-1.83	149	.07	-1.85
Overall anxiety	-1.99	149	**.05**	-6.94

The results presented in Table 2b do indicate statistically significant differences between the urban and non-urban school students in their overall anxiety scores as well as in test anxiety. Students attending schools in urban areas apparently feel less anxious in test situations than those in non-urban areas. Further research might determine whether stronger anxiousness in non-urban areas is caused by the quality of teaching, which is often considered to be higher in urban schools, or by the influence of certain social factors. Not many studies have so far focused on urban and non-urban school context and the results are still quite inconsistent – in a similar study in Indonesia, urban students showed higher fear of negative evaluation, while non-urban students had higher communication apprehension (Anjaniputra, 2021).

An independent samples T-test was also used to check whether there are any significant differences between male and female participants, but in this research, none were detected.

Further analysis focused on the anxiety scores reported by the two generations involved in this research: fourth grade students aged ten and seventh or eighth grade students aged thirteen to fourteen.

Table 3a: Group statistics – age of students

	Age of students	N	Mean	Standard Deviation
Communication apprehension	4th grade	52	32.54	6.26
	7th and 8th grade	99	33.12	8.24
Test anxiety	4th grade	52	43.13	8.49
	7th and 8th grade	99	45.03	10.52
Fear of negative evaluation	4th grade	52	19.06	5.36
	7th and 8th grade	99	21.32	6.14
Overall anxiety	4th grade	52	94.73	17.46
	7th and 8th grade	99	99.47	21.99

Table 3b: Independent samples T-test – age of students

	t	df	Sig. (2-tailed)	Mean Difference
Communication apprehension	-.45	149	.66	-.58
Test anxiety	-1.12	149	.26	-1.90
Fear of negative evaluation	**-2.25**	**149**	**.03**	**-2.27**
Overall anxiety	-1.35	149	.18	-4.74

An independent samples T-test shows statistically significant differences between the two groups in their reports of fear of negative evaluation. More precisely, the older participants tend to feel it more frequently than the younger ones. Such findings might be related to the emotional vulnerability common in puberty, when evaluation and reactions of peers or certain authorities are considered important and might even threaten the ego and self-esteem of the learner. However, the results of this study cannot support any general conclusions on the effects of age since no significant differences between the two age groups were observed in communication apprehension or test anxiety. Moreover, in a similar study, carried out in Serbia, the younger students reported higher levels of test anxiety than the older ones (Suzić, 2015).

An independent samples T-test was also performed in analysing the differences between the intensity of anxiety reported by students who attend private language schools and those who learn English in public schools only. The results obtained are presented in Tables 4a and 4b.

Table 4a: Group statistics – attending/not attending a private language school

	Attending a private language school	N	Mean	Standard Deviation
Communication apprehension	yes	30	31.30	6.64
	no	100	33.44	7.43
Test anxiety	yes	30	41.30	7.84
	no	100	45.25	9.87
Fear of negative evaluation	yes	30	17.73	6.18
	no	100	21.31	5.41
Overall anxiety	yes	30	90.33	17.70
	no	100	100.00	20.01

Table 4b: Independent Samples T-test – attending/not attending a private language school

	t	df	Sig. (2-tailed)	Mean Difference
Communication apprehension	-1.42	128	.16	-2.14
Test anxiety	-2.01	128	**.05**	-3.95
Fear of negative evaluation	-3.07	128	**.00**	-3.58
Overall anxiety	-2.38	128	**.02**	-9.67

Statistically significant differences can be observed in test anxiety, fear of negative evaluation and overall anxiety scores, all of them being higher in the group of students who do not have any additional English classes. Overall anxiety scores were also found to be higher in students not attending private language schools in a similar study conducted by Suzić and Radić-Bojanić (2017) and such consistent findings may suggest that more exposure to a foreign language reduces foreign language anxiety. Admittedly, not all students can afford private language classes, so it is worth considering if additional classes at school, whether compulsory or optional, could be provided in the future. It is interesting to note, however, that no significant differences were observed in com-

munication apprehension even though more exposure to a foreign language is reasonably assumed to lower this type of anxiety.

The influence of the atmosphere in the classroom and the perceived strictness of the teacher were analysed by means of Pearson's correlations.

Mean scores for the seven statements added to the original version of the questionnaire to check the relationships within a group were calculated and compared with mean scores in four categories – overall anxiety level, communication apprehension, test anxiety and fear of negative evaluation. A highly significant negative correlation was detected between the relationships in the classroom and communication apprehension ($r=-0.199$, $p \leq 0.01$), meaning that students who feel that the atmosphere in the group is not friendly and supportive tend to feel more anxious in communicative tasks than those students who feel supported and well-accepted by their peers. This finding supports the conclusions of a number of studies that emphasize the ameliorating effects of peer cooperation and perceived student emotional support on foreign language anxiety (Frantzen & Magnan, 2005; Jin & Dewaele, 2018; Nagahashi, 2007).

Surprisingly, no significant correlation was found between the perceived strictness of the teacher and anxiety scores, even though it is assumed that teachers have major roles in establishing a stress-free atmosphere during the class. However, such findings do not diminish the importance of the teacher, since the results show positive correlation between the strictness of the teacher and good classroom relationships ($r=0.164$, $p \leq 0.05$), which might suggest that even though friendly and democratic teachers are generally favoured and undoubtedly more efficient in reducing tension, reasonable and moderate strictness improves the relationships between the students, probably due to better control of the interaction within the group and setting necessary limits on undesirable behaviour and competitiveness.

4. Conclusion

Summarising the findings of this study, the following conclusions can be made:

(1)   Primary school students in Serbia report a moderate level of foreign language classroom anxiety, which may seem encouraging, but the analysis of their responses reveals that tension they feel in some learning situations has strong debilitative effects, particularly when they expect to be called on or have to speak without preparation, and may, therefore, result in reluctance to participate in communication.

(2)   Significant differences were not found between male and female learners, but they were detected in different age groups – the younger learners feel less anxious than the older ones, who report higher fear of negative evaluation. Students who attend non-urban schools report higher test anxiety and overall anxiety scores. Attending private language schools or additional language classes that enable more exposure to the language and more opportunity to participate reduces overall anxiety as well as fear of negative evaluation and test anxiety. The only component that seems not to be affected by age, background or extra exposure to the foreign language is communication apprehension.

(3)   On the other hand, a friendly classroom atmosphere and good relationships within the group reduce communication apprehension only. Interestingly, interactions within a group are positively correlated with the strictness of the teacher. The responses obtained suggest that the desirable form of strictness should most probably be interpreted as a readiness to set limits and not the readiness to correct each and every mistake that the students complained about.

Some of the conclusions in this research, particularly those related to the influence of gender and age, cannot be generalised due to previous inconsistent study results. However, the overall findings shed light on a source of anxiety that emerged as crucial and requires more attention and investigation – fear of speaking, particularly without preparation. A great deal of research shows that the most common source of anxiety is having to speak in front of peers. Students often think they will be laughed at for their mistakes, pronunciation or inability to express their

intended meaning well (Price, 1992: 104). Even though such fears might be irrational and related to students' general self-esteem, fear of public speech or perfectionism, an efficient way of dealing with it, as this study has shown, is to establish a supportive atmosphere in the classroom.

4.1 Pedagogical implications

In order to make language classes less stressful, teachers should encourage making mistakes and periodically emphasise their instructional value (Price, 1992: 105). Correction should generally be avoided when the focus is on fluency or carried out in an unobtrusive way or through initiating self-correction when it is really necessary and useful.

Additionally, realistic goals should be set by the teacher and clearly explained to students who tend to be over-ambitious. More often than not, they expect to develop native-like fluency, error-free speech and pronunciation in a short period of time, consequently feeling inferior and anxious when they fail.

Since most students report strong anxiety when they are called on randomly and have to speak in front of the whole class, teachers should carefully plan their activities, selecting those that are well-known to be low-anxiety provoking, such as group work, pair work and the use of games. However, care must be taken when the customary pattern of classroom activities is about to change. Even though small group discussions are often ranked as low-anxiety tasks, if students are unfamiliar with the format they could initially produce higher levels of tension due to this lack of experience.

Additionally, in traditional school systems, a great deal of memorisation and preparation is required for presenting material orally, and students tend to transfer such learning habits to foreign language learning, feeling insecure when their task is less structured and less predictable. Therefore, a good step in transforming a traditional lesson plan could be introducing structured and semi-structured activities first, since they seem to be "safer" and offer gradual transition from traditional concepts of learning to a functional use of language. If necessary, students should be given an opportunity to think about the topic and brainstorm their ide-

as, even write down some notes before taking part in group discussions, which should gradually become a regular classroom activity.

Finally, a great deal of positive reinforcement and encouragement by the teacher is essential in creating a less stressful atmosphere and better relationships within the group.

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Appendix

Frequency of responses to FLCAS (%)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. I never feel quite sure of myself when I am speaking in my foreign language class.	28.50	17.90	29.10	12.60	11.90
2. I don't worry about making mistakes in language class.	23.20	19.90	30.50	13.90	12.60
3. I tremble when I know that I'm going to be called on in language class.	23.80	18.50	18.50	15.20	23.80
4. It frightens me when I don't understand what the teacher is saying in the foreign language.	13.20	20.50	19.20	21.20	25.80
5. It wouldn't bother me at all to take more foreign language classes.	22.50	11.90	17.20	16.60	31.80
6. During language class, I find myself thinking about things that have nothing to do with the course.	35.80	21.20	21.20	9.30	12.60

7. I keep thinking that the other students are better at languages than I am.	18.50	17.20	29.10	19.90	15.20
8. I am usually at ease during tests in my language class.	14.60	16.60	27.20	10.60	31.10
9. I start to panic when I have to speak without preparation in language class.	31.80	17.20	17.20	11.30	22.50
10. I worry about the consequences of failing my language class.	21.90	21.20	19.20	16.60	21.20
11. I don't understand why some people get so upset over foreign language classes.	15.20	11.90	31.80	15.20	25.80
12. In language class, I can get so nervous I forget things I know.	27.20	17.90	13.20	15.20	26.50
13. It embarrasses me to volunteer answers in my language class.	23.80	9.90	14.60	16.60	35.10
14. I would not be nervous speaking the foreign language with native speakers.	15.90	11.90	25.80	17.20	29.10

15. I get upset when I don't understand what the teacher is correcting.	23.20	19.90	25.80	13.90	17.20
16. Even if I am well prepared for language class, I feel anxious about it.	33.80	17.20	13.20	15.20	20.50
17. I often feel like not going to my language class.	26.50	13.90	27.20	15.20	17.20
18. I feel confident when I speak in foreign language class.	17.20	16.60	29.10	16.60	20.50
19. I am afraid that my language teacher is ready to correct every mistake I make.	21.90	22.50	24.50	14.60	16.60
20. I can feel my heart pounding when I'm going to be called on in language class.	34.40	18.50	13.20	15.20	18.50
21. The more I study for a language test, the more confused I get.	25.20	17.90	20.50	11.30	25.20
22. I don't feel pressure to prepare very well for language class.	31.90	21.90	20.50	9.30	17.20

23. I always feel that the other students speak the foreign language better than I do.	23.20	15.90	29.80	13.20	17.90
24. I feel very self-conscious about speaking the foreign language in front of other students.	17.90	21.20	25.20	15.90	19.90
25. Language class moves so quickly I worry about getting left behind.	19.20	16.60	22.50	17.90	23.80
26. I feel more tense and nervous in my language class than in my other classes.	19.90	15.90	27.20	11.90	25.20
27. I get nervous and confused when I'm speaking in my language class	25.20	16.60	17.20	19.20	21.90
28. When I'm on my way to language class, I feel very sure and relaxed.	11.30	15.20	23.20	17.90	32.50
29. I get nervous when I don't understand every word the language teacher says.	15.90	21.20	26.50	10.60	25.80

30. I am overwhelmed by the number of rules you have to learn to speak a foreign language.	25.80	14.60	31.10	13.90	14.60
31. I am afraid that the students will laugh at me when I speak the foreign language.	23.20	19.90	11.90	21.90	23.20
32. I would probably feel comfortable around the native speakers of the foreign language.	11.90	14.60	28.50	23.80	21.20
33. I get nervous when the language teacher asks questions which I haven't prepared in advance.	21.20	22.50	22.50	16.60	17.20

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MAKROEKONOMSKI IZAZOVI KLIMATSKIH PROMENA

Rezime: Dvadeseti vek je obeležeilo globalno zagrevanje koje nije zabeleženo, tako dramatičnog intenziteta, u celokupnoj ljudskoj istoriji. U svetu današnjice ne postavlja se više pitanje da li postoji ili ne globalna promena klime, već kako se evidentne klimatske promene odražavaju kao i kakve izazove prouzrokuju na život na Zemlji, ekonomiju i društvo u celini. Cilj rada jeste analiza uticaja trendova klimatskih promena i njihovih izazova sa makroekonomskog aspekta. Kako bismo ostvarili postavljeni cilj u radu prvo analiziramo trendove klimatskih promena i njihovu povezanost s ekonomskim razvojem, analiziramo uticaj klimatskih promena na katastrofalne štete, na nacionalne ekonomije, te pristupe u smanjenju klimatskih promena.

Ključne reči: makroekonomski izazovi, klimatske promene, rizik, ekonomija.

1. Uvod

Pod klimom se podrazumeva prosečno stanje atmosfere nad nekim mestom ili područjem u određenom vremenskom razdoblju. U antičkim vremenima se smatralo da klima zavisi samo od nagiba Sunčevih zraka, da bi se u XIX veku klima definisala kao prosečno stanje atmosfere nad nekim mestom ili područjem, a u novije vreme kao statistički koncept koji opisuje prosečne meterološke uslove nad nekim mestom

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ili područjem Zemljine površine u određenom razdoblju, najčešće periodu od minimum 30 godina, uzimajući u obzir prosečne i ekstremne varijacije kojima su izložena stanja atmosfere.

Vremenske uslove nije moguće determinisati u vidu jednostavnih relacija uzroka i posledica jer su one produkt kompeksnih sistema u kojima različiti faktori utiču međusobno jedni na druge, na način da se male promene u domenu uzroka mogu odraziti na ogromne posledice. Činjenica je da su vremenski uslovi pod uticajem manjih ili većih promena u kraćim ili dužim vremenskim intervalima u atmosferi, biosferi, litosferi i hidrosferi. Ova činjenica ukazuje na nemogućnost davanja objašnjenja promene vremenskih prilika usled promena uticaja samo jednog uzroka. Takođe, imajući u vidu da se klima menja pod uticajem promena vremena, pogrešno bi bilo zaključiti da su vremenske prilike pod uticajem klime, već upravo suprtno. Međutim, imajući u vidu evidentnost promene klime koja je utvrđena dugoročnim pomeranjem izračunatih statističkih proseka vremenskih promena, moguće je pretpostaviti trendove tih promena.

U svetu današnjice ne postavlja se više pitanje da li postoji ili ne globalna promena klime, već kako se evidentne klimatske promene odražavaju i kako će se odraziti, kao i kakve izazove prouzrokuju na život na Zemlji, ekonomiju i čitavo društvo. Globalna promena klime značajno će uticati na ekonomije pojedinih zemalja, posebno na zemlje u razvoju ali i ekonomije mogu dati značajan podsticaj za redukciju uzroka klimatskih promena. Podizanje nivoa mora koje pogađa ostrva i obalske gradove, klimatski poremećaji, ekstremne padavine i suše, neizvesne žetve i druge posledice promene klime dovešće do značajnog uticaja na ekonomiju, ali i geopolitiku, što će usloviti podsticanje migracija i veliko nezadovoljstvo populacija. Preti opasnost da klimatske promene trajno ugroze blagostanje postojećih ali i budućih generacija.

Razumevanje globalnih promena klime neophodno je kako bi se mogli sagledati potencijalni efekti promena u kontekstu različitih ishoda posledica kao što su uragani, cunamiji, zimske oluje ili druge katastrofe i njihov uticaj na ekonomiju i pad bruto domaćeg proizvoda i blagostanja, kako bi mogle donositi pravovremene, na informacijama zasnovane, odluke o redukciji uzroka koji dovode do povećanja global-

nog zagrevanja, odnosno klimatskih promena. Upravo zbog tih razloga, a imajući u vidu činjenicu da od donesenih odluka u sadašnjosti zavise ne samo budući troškovi već i opstanak, čime rizik klimatskih promena predstavlja jasan primer rizika kod koga je dugoročno planiranje od ključnog značaja kako bi se izbegli potencijalno katastrofalni efekti, namera nam je da u ovom radu analizom trendova klimatskih promena koji su evidentni, kao i njihovih uticaja na ukupnu ekonomiju, preporučimo buduće pravce upravljanja sa ekonomskog aspekta.

Cilj rada jeste analiza uticaja trendova klimatskih promena i njihovih izazova sa makroekonomskog aspekta. Kako bismo ostvarili postavljeni cilj, u radu prvo analiziramo trendove klimatskih promena i njihovu povezanost sa ekonomskim razvojem, analiziramo uticaj klimatskih promena na katastrofalne štete, na nacionalne ekonomije, te ekonomske pristupe u smanjenju uzroka klimatskih promena.

2. Trendovi klimatskih promena i veza sa ekonomskim razvojem

Efekat staklene bašte je prvi uočio francuski naučnik Jean-Baptiste Joseph Fourier 1824. godine, a prvi ga je istraživao švedski naučnik Svante Arrhenius, koji je otkrio da apsorpcijom Sunčeve radijacije Zemljina atmosfera omogućava zagrevanje planete. Postojanje efekta staklene bašte od izuzetnog je značaja budući da bi bez postojanja efekta staklene bašte Zemlja bila znatno hladnija, što bi onemogućilo postojanje života. Međutim, s ekonomskim razvojem i povećanjima emisija gasova koji izazivaju dodatni efekat staklene bašte, dolazi do problema globalnog zagrevanja, odnosno klimatskih promena.

Brojne studije ukazuju na činjenicu da je promena klime oličena u globalnom zagrevanju posledica uticaja porasta koncentracije pre svega ugljen-dioksida u atmosferi (CO_2). Imajući u vidu činjenicu da je ugljen-dioksid jedan od osnovnih elemenata zahvaljujući kome je omogućeno da atmosfera vraća jedan deo energije na Zemlju, jasno je zašto se upravo zahvaljujući povećanju koncentracije ovog elementa u atmosferi javlja uvećani efekat staklene bašte. Povećanje koncentracije ugljen-dioksida u atmosferi u periodu od 1957. do 2022. godine pokazuje Grafikon 1.

Grafikon 1: Kretanje prosečnih mesečnih koncentracija ugljen-dioksida u atmosferi u periodu od 1957. do 2022. godine meren u opservatorijumu Muna Loa, Havaji, SAD
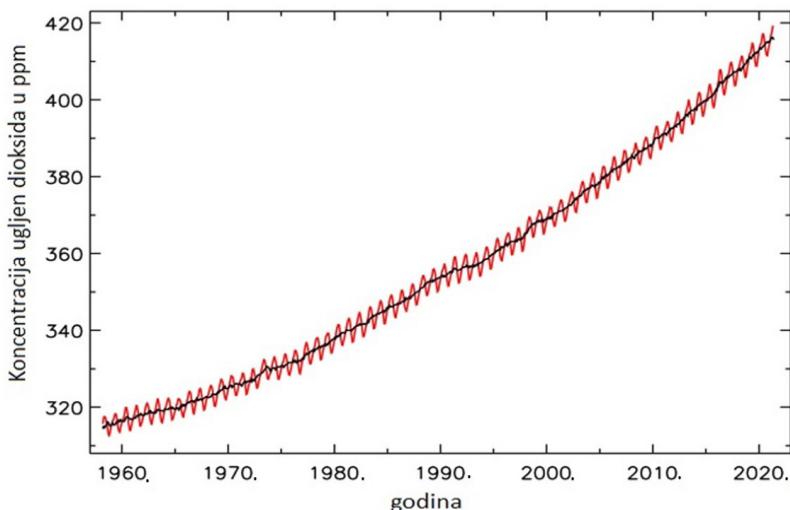
Izvor: GML (2022). Napomena: ppm – delova na milion

Prema podacima Ujedinjenih nacija, godišnje emisije ugljen-dioksida porasle su za prosečnih 6,4 gigatona karbona godišnje tokom devedesetih i na 7,2 gigatona godišnje u periodu od 2000. do 2005. godine. To je doprinelo povećanju zadržavanja toplote i ponovnog zračenja na zemlju za 20% u periodu između 1995. i 2005. godine, što predstavlja najveće povećanje u poslednjih 200 godina. Prema četvrtom izveštaju Međuvladinog panela za klimatske promene (IPCC, 2007), u periodu od 1970. do 2004. godine zabeleženo je 80% povećanje emisije ugljen-dioksida što predstavlja 77% ukupne emisije gasova koji izazivaju efekat staklene bašte.

Prema petom izveštaju Međuvladinog panela o klimatskim promenama (IPCC, 2014), ukoliko se emisije štetnih gasova koji kreiraju efekat staklene bašte nastavi po sadašnjoj stopi, do kraja veka prosečne temperature porašće između 3,7°C i 4,8°C. Posledice će biti katastrofalne, na šta ukazuje činjenica da bi preko 1,4 milijarde ljudi moglo ostati bez vode u Africi, na Bliskom istoku i jugoistočnoj Aziji.

Dugoročno posmatrano, industrijska revolucija iznedrila je problem klimatskih promena. Naime, podaci iz četvrtog izveštaja Međuvladinog panela o klimatskim promenama ukazuju da je koncentracija ugljen-dioksida u atmosferi pre industrijske revolucije iznosila 280 delova po milionu (ppm), a da je 2005. godine iznosila 379 ppm. Takođe, smatra se da je ostvareno povećanje efekta staklene bašte u industrijskoj eri bez presedana u periodu od više od 10.000 godina. Ukoliko bi se zagađenje atmosfere ugljen-dioksidom nastavilo po sadašnjem trendu do 2050. godine, koncentracija ugljen-dioksida bi se udvostručila u odnosu na predindustrijski period, odnosno dostigla bi kritičnih 550 ppm što bi dovelo, sa najmanje 77% verovatnoće, a možda i 99% verovatnoće, porast temperature za 2–5ºC (Stern, 2006). Takva kretanja dovela bi do povećanja rizika gladi za 25–60%, u velikoj meri bi ugrozila raspoloživost vode, podstakla propadanje dela ili celine tropskih šuma u dolini Amazona, uzrokovala dupliranje šteta uzrokovanih uraganima, kao i nepovratno topljenje ledenog pokrivača na Grenlandu.

Pre izveštaja grupe eksperata Međuvladinog panela za klimatske promene, postojala su različita tumačenja u pogledu intenziviranja efekata staklene bašte. Međutim, zaključkom četvrtog izveštaja ove ekspertske grupe definitivno, sa 90% verovatnoćom, razrešeno je da je čovek, odnosno industrijska era, ključni uzročnik globalnog zagrevanja. Bez postojanja uvećane emisije ugljen-dioksida u atmosferu koja je uzrokovana čovekovim delovanjem, pod uticajem samo solarne i vulkanske energije, verovatno bi došlo do efekta globalnog hlađenja, a ne zagrevanja.

Povezanost ekonomskog razvoja merenog bruto domaćim proizvodom pokazuje Grafikon 2 za period od 1960. do 2010. godine.

Grafikon 2: Rast globalnog bruto domaćeg proizvoda (BDP) i emisija
ugljen-dioksida (CO2) u periodu između 1960. i 2010. godine
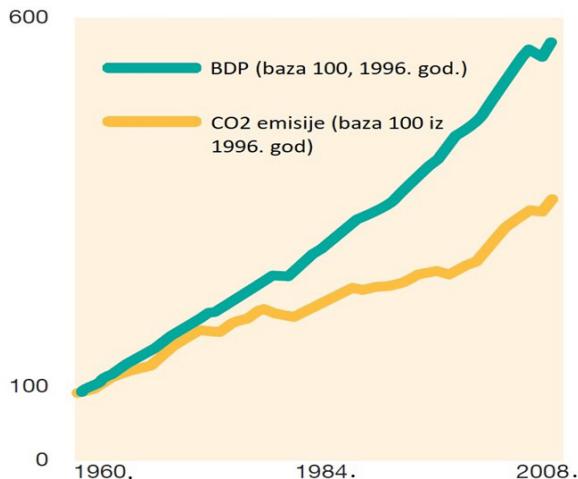
Izvor: Canfin, P., Grandjean, A., Cochran, I., & Martini, M. (2015).

Ostvarenje cilja da globalne prosečne temperature ne porastu za više od 2°C iznad pre industrijskog nivoa, uz istovremeno ostvarenje ekonomskog razvoja, zahteva da bruto domaći proizvod (BDP) bude odvojen od rasta emisije gasova koji izazivaju efekat staklene bašte. To suštinski zahteva da se fosilna goriva znatno manje koriste. Po jedinici bruto domaćeg proizvoda iz 1960. godine, korigovanog paritetom kupovne snage, produkovalo se 1000g CO2, 500g CO2 početkom 21 veka a 2010. godine 400g CO2. Ukoliko se želi ostvariti postavljeni cilj, učešće emisija ne sme prekoračiti 60g CO2 po jedinici BDP-a do 2050. godine, što pokazuje Grafikon 3.

Grafikon 3: Projektovani rast do 2050. god. globalnog bruto domaćeg proizvoda (BDP) i emisija ugljen-dioksida (CO2) u scenariju rasta globalnih temeratura do 2°C
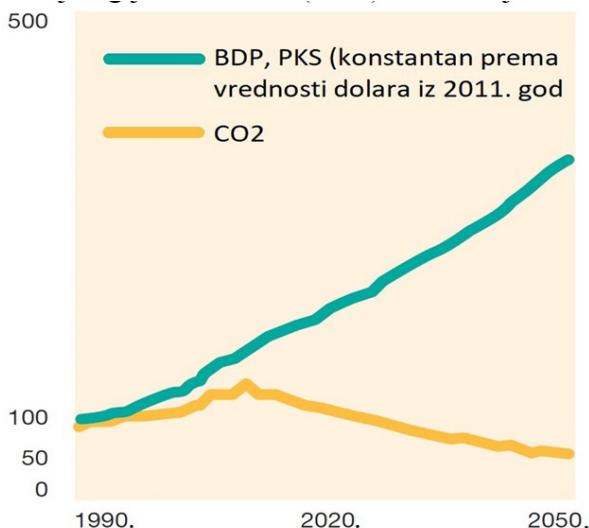
Izvor: Canfin, P. i dr. (2015). Napomena: PKS – paritet kupovne snage.

Kao što se vidi na Grafikonu 1, unapređenje tehnika vodilo je ka manjem produkovanju CO2 po jedinici BDP-a u periodu od 1960. do 2010. godine, a ukoliko se radikalno promeni način na koji se troši energija, način na koji se grejemo, projektujemo stanove, prevozimo, proizvodimo… (Tirol, 2019), mogu se očekivati znatno smanjenje emisije CO2 prema jedinici BDP-a i ostvarenje postavljenog cilja, kao što je pokazano na Grafikonu 2.

3. Katastrofalne štete uzrokovane klimatskim promenama

Klimatske promene dovode do porasta temperatura, nivoa mora i topljenja ledenog omotača, što uzrokuje veću verovatnoću ostvarenja i veći intenzitet štetnih posledica katastrofalnih događaja koji su uslovljeni vremenskim prilikama.

Postepeni porast temperature tokom poslednjih 170 godina prikazuje Grafikon 4.

Grafikon 4: Postepeni porast temperature na globalnom niovu od 1850.
do 2020. godine
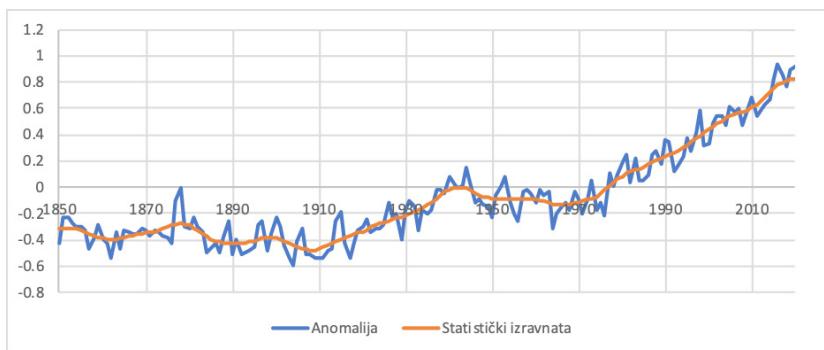
Izvor: CRS (2022)

Od početka dvadesetog veka do 2014. godine, prosečna globalna temperatura vazduha porasla je za +0,7°C, pri čemu ovaj rast nije bio kontinuitetan, već je ubrzano povećanje prosečne temperature na globalnom nivou, u visini od +0,18°C za deceniju, zabeleženo u periodu od 1976. Period između 2001. i 2010. godine bio je za 0,27°C veći u odnosu na prosek tridesetogodišnjeg perioda od 1961. do 1990. godine. Takođe, navedeni period bio je topliji za 0,22°C u odnosu na prethodnu deceniju, tj. period od 1991. do 2000. godine. Topljenje ledenog pokrivača na Arktiku i Grenlandu dokaz je prisutnog globalnog zagrevanja. Prema podacima NASA, površina leda na Arktiku smanjuje se prosečno za 9% po deceniji. Pored porasta temperature, evidentne posledice prenaglašenog efekta staklene bašte, tj. globalnog zagrevanja, jesu i topljenje ledenog pokrivača i porast nivoa mora (vidi Grafikon 5).

Grafikon 5: Porast nivoa mora zahvaljujući globalnom zagrevanju
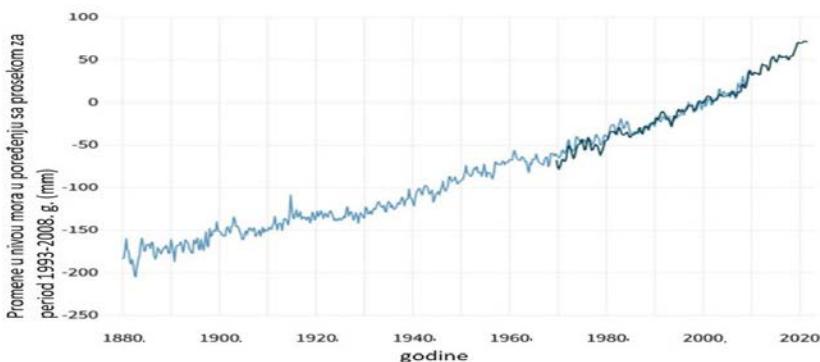
Sa Grafikona 5 jasno se vidi prosečan porast nivoa mora zabeležen u periodu od 1880. do 1980. godine. Prema analizama Programa Ujedinjenih nacija za životnu sredinu (United Nations Environment Programme), prosečan nivo mora na globalnom nivou tokom prikazanih 100 godina porastao je za 10 do 25 centimetara.

Ovi trendovi uzrokovali su povećanje verovatnoće ostvarenja i povećani intenzitet štetnih posledica katastrofalnih šteta. Katastrofalne štete odlikuje istovremeno ostvarenje jedne ili više katastrofalnih opasnosti kod veoma velikog broja objekata, odnosno rizika sa visokim ljudskim i novčanim gubicima (Marović & Žarković, 2007).

Prema određenju *Insurance Information Institute*, katastrofalne štete predstavljaju štete izazvane prirodnim ili ljudskim faktorom koje uzrokuju štete od preko 25 miliona dolara ili koje utiču na smrt najmanje 10 osoba ili 50 povređenih ili preko 2000 podnetih zahteva za naknadu štete za oštećene domove i objekate (Insurance Information Institute, 2022, January 25).

Događaji kao što su uragani (posebno sezona uragana iz 2005. godine), poplave (na primer, u Velikoj Britaniji poplave iz 2007. godine izazvale su štete nezapamćene u poslednjih 60 godina), zemljotresi (zemljotres u okolini Los Anđelesa iz 1994. godine, zemljotres u gradu Kobe, Japan iz 1995. godine i zemljotres u provinciji Sečuan, Kina iz

2008. godine), cunamiji (na primer, cunamiji koji su pogodili Tajland 2004. godine i Mjanmarsku Uniju 2008. godine), teroristički napadi (na primer, napad na Svetski trgovinski centar 11. septembra 2001. godine u SAD), sve češće se dešavaju i produkuju sve intenzivnije negativne posledice, kako za tržište osiguranja, tako i za čitave nacionalne ekonomije, pa i globalnu ekonomiju. Grafikonom 6 prikazano je povećanje broja katastrofalnih događaja u svetu u periodu od 1970. do 2020. godine.

Grafikon 6: Broj prirodnih katastrofa i katastrofa izazvanih ljudskim faktorom u periodu od 1970. do 2020. godine
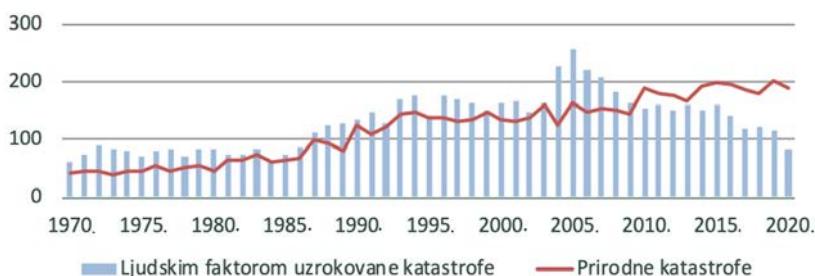
Izvor: Swiss Re (2021)

Koncentracija ljudi, zgrada, fabrika i infrastrukture po jedinici zemljišta kombinovana sa povećanjem populacije, vrednosti materijalnih dobara, tehnološkim razvojem i procesom globalizacije, do kojih je došao svet današnjice, dovodi do toga da ekonomski štetni događaji istog intenziteta mogu da ugroze sve veći broj ljudi i izazovu veću imovinsku štetu nego ikada do sada. Prema procenama OECD-a , ponavljanje zemljotresa u Tokiju iz 1923. godine izazvalo bi štete veličine i do 75% japanskog bruto domaćeg proizvoda, tj. štete u visini do 3000 milijardi dolara (OECD, 2003). Grafikonom 7 predstavljen je rastući uticaj, u pogledu veličine materijalnih šteta, katastrofalnih događaja uzrokovanih dejstvom prirodnih sila na tržište osiguranja u periodu od 1970. do 2020. godine.

Grafikon 7: Osiguranjem pokrivene katastrofalne štete u periodu od 1970. do 2020. godine (u milijardama dolara)
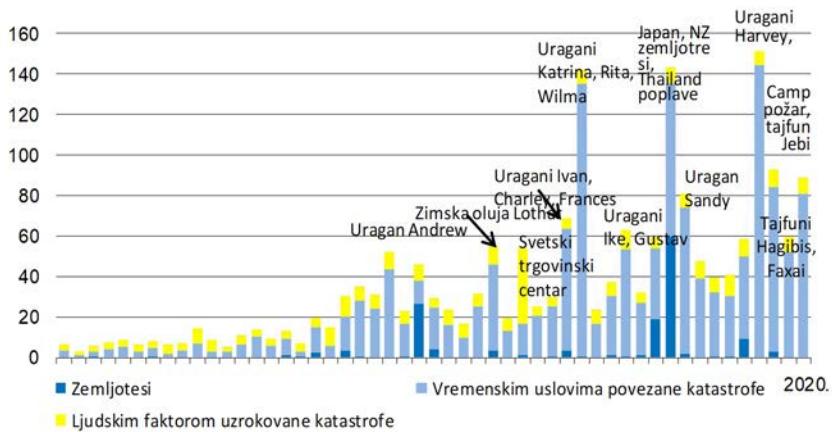
Izvor: Swiss Re (2021)

Podaci sa Grafikona 7 svedoče o kontinuiranom povećanju, posebno u poslednjoj deceniji, štetnih posledica ostvarenja katastrofalnih događaja. Posebno je evidentno povećanje uticaja prirodnih katastrofa koje su izazvane vremenskim prilikama, tj. koje uzrokuju klimatske promene.

4. Uticaj klimatskih promena na ekonomiju

Uticaj ostvarenja štetnih događaja, pre svega katastrofalnog karaktera, na ekonomiju prikazani su Grafikonom 8.

Grafikon 8: Kretanje društvenog blagostanja pre i nakon katastrofalnog
događaja
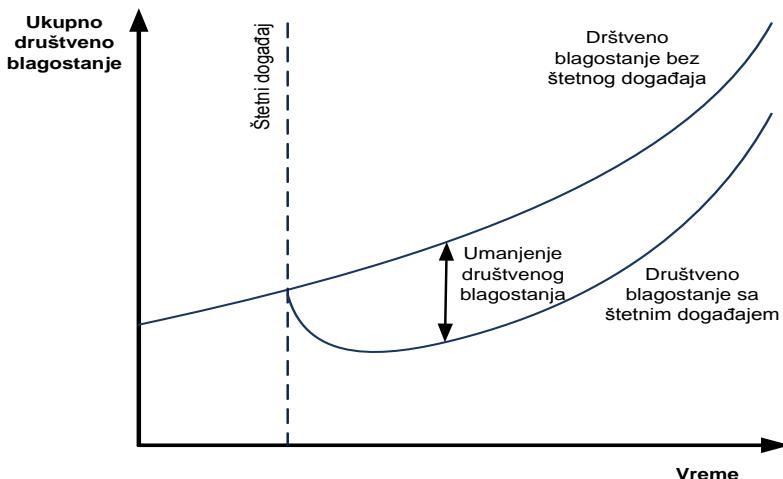
Štetni događaji uzrokuju redukciju ukupnog društvenog blagostanja kako zbog neposrednog štetnog uticaja, tako i zbog činjenice da se društveno blagostanje ne vraća u prvobitno stanje neposredno nakon ostvarenja događaja. Na Grafikonu 8 vidi se putanja ukupnog društvenog blagostanja pre ostvarenja štetnog događaja i nakon ostvarenja štetnog događaja. Neposredno nakon ostvarenja štetnog događaja putanja društvenog blagostanja naglo pada, budući da u štetnim događajima, kao što je ukazano, strada velik broj ljudi i pričine se značajne materijalne štete. Nakon što se razaranje zaustavi i započne oporavak, putanja društvenog blagostanja ponovo počinje da raste, ali na nižem nivou u odnosu na nivo koji bi bio da nije bilo štetnog događaja. Međutim, ukoliko je upravljanje rizikom na društvenom nivou adekvatno, moguće bi bilo da se putanja društvenog blagostanja ne samo vrati u prvobitni položaj rasta već i da rast nakon ostvarenja štetnog događaja bude na višem nivou (na primer, u slučaju da stara tehnologija strada i omogući uvođenje nove, efikasnije tehnologije). Upravljanje rizikom na nivou

društva adekvatno je ako obezbeđuje smanjenje troškova rizika, a to je moguće uticanjem na prirodu samih štetnih događaja, prevencijom i redukovanjem verovatnoće ostvarenja ili intenziteta štetnih posledica, kao i pravovremenom pripremom za aktivnosti obnove nakon ostvarenja štetnih događaja.

Osim snažnog uticaja klimatskih promena na ostvarenje katastrofalnih događaja koji ugrožavaju ljudske živote i imaju snažan uticaj na ukupno drušveno blagostanje, ovi događaji uzrokuju i ogromne troškove preko kojih se meri njihov uticaj na ekonomiju. Klimatske promene, kao promene prosečnih vremenskih uslova, predstavljaju ključni rizik za globalnu ekonomiju jer utiču na društveno bogatstvo, raspoloživost resursa, cenu energije i vrednost kompanija. Preko uticaja na raspoloživost sirovina, kontinuitet proizvodnje i oštećenja i uništenja proizvodnih postrojenja, promene klime utiču i na tržišta kapitala preko uticaja na kretanje cena akcija.

Najugroženije industrije, naselja i zajednice od posledica globalnog zagrevanja jesu one koje se nalaze u primorskim zonama i plavnim rečnim dolinama, zatim na područjima čija ekonomija zavisi od resursa osetljivih na klimatske promene, kao i na područjima izloženim ekstremnim vremenskim i klimatskim pojavama i gde je ubrzan proces urbanizacije. Različiti ekonomski sektori su pod različitim uticajem klime, a time i klimatskih promena. U tom smislu identifikovani su sledeći socioekonomski uticaji klimatskih promena (McLean & McLean, 2001): povećani gubici imovine i priobalnih staništa, povećani rizik poplava i gubitka ljudskih života, oštećenja na radovima priobalne zaštite i drugoj infrastrukturi, gubitak obnovljivih i resursa ključnih za opstanak, gubitak turističkih, rekreativnih i transportnih funkcija, gubitak kulturnih resursa i vrednosti, povećanje rizika u poljoprivrednoj proizvodnji, a posebno u kultivaciji vodenih organizama zahvaljujući opadanju kvaliteta zemljišta i vode usled poplava, suša i drugih nepogoda.

Na osnovu dosadašnjeg istorijskog iskustva, od katastrofalnih događaja čiji se nastanak povezuje sa globalnim zagrevanjem, najveći uticaj na svetsku ekonomiju imali su uragani koji ugrožavaju priobalna područja SAD. Ekonomski troškovi nastali samo nakon katastrofalne sezone uragana iz 2005. godine procenjeni su na više od 200 milijardi

dolara (CIER, 2007). U Evropi, najveće ekonomske posledice od prirodnih katastrofa koje su uslovljene vremenskim promenama javljaju se usled poplava i zimskih oluja. Prema preliminarnim podacima Swiss Re (2021), ekstremni vremenski događaji 2021. godine, uključujući ekstremne zimske uslove, poplave, jake grmljavine, toplotne talase i veliki uragan, doveli su do procenjenih godišnjih osiguranih gubitaka od prirodnih katastrofa od 105 milijardi dolara, što je četvrti najveći iznos još od 1970. godine. Dok je uragan Ida bio najskuplja prirodna katastrofa u 2021. godini, zimska oluja Uri i drugi sekundarni štetni događaji izazvali su više od polovine ukupnih šteta.

U pogledu uticaja klimatskih promena na ekonomiju osim direktnih uticaja prouzrokovanih ostvarenjem katastrofalnih događaja, neophodno je pomenuti i troškove koje zahteva preduzimanje preventnivnih mera. Tako na primer, imajući u vidu da u SAD postoji oko 20.000 kilometara obale i više od 32.000 kilometara obalnih područja izloženih čestom plavljenju, procene su da bi prilagođavanje porastu nivoa mora u visini od jednog metra zahtevalo ulaganja u cilju adaptacije novim uslovima u visini od oko 156 milijardi dolara, što nije značajno ako se uzme u obzir da je tokom 2021. godine samo u SAD nastalo ukupnih šteta uzrokovanih prirodnim katastrofama u visini od 169 milijardi dolara (Insurance Information Institute, 2022, January 25). Imajući u vidu da troškovi prilagođavanja promenama klime vrše ogroman pritisak na ekonomiju i visoko razvijenih zemalja, potpuno je jasno zašto će siromašno stanovništvo biti naročito ranjivo u pogledu klimatskih promena, a posebno ono skoncentrisano u visoko rizičnim područjima.

Uzroci većih ekonomskih troškova katastrofalnih događaja u novije vreme nisu samo klimatske promene, koje uslovljavaju veću verovatnoću nastanka ovih štetnih događaja. Osim klimatskih promena, značajni faktori koji utiču na intenzitet ekonomskih posledica prirodnih katastrofa jesu rast populacije i poslovnih aktivnosti, bolji životni standard, a samim tim i veće ekonomske vrednosti koje su izložene dejstvu katastrofalnih događaja, koncentracija stanovništva i ekonomskih aktivnosti u oblastima koje su izložene dejstvu ekstremnih vremenskih uslova, osetljivost modernih društava i tehnologija na prirodne katastrofe i drugi faktori. Pretpostavke su da bi, čak i bez efekata klimatskih promena, uragan snage onoga koji je pogodio Majami 1926. godine za petnaest

godina mogao da izazove štete u visini od 500 milijardi dolara (Pielke, Gratz, Christopher, & Collins, 2008).

Prema Šternovom izveštaju (Stern, 2006) o uticajima klimatskih promena na ekonomiju, prognoze su da bi ekstremni vremenski uslovi mogli usloviti pad ukupnog bruto domaćeg proizovda za oko 1%, da bi daljnje povećanje temperature za dva do tri stepena moglo usloviti redukciju ukupnog globalnog ekonomskog autputa (engl. *output*) za 3%, odnosno ukoliko bi se temperatura povećala za pet Celzijusovih stepeni, ovo smanjenje bi moglo iznositi oko 10%, a prema scenariju najgoreg mogućeg slučaja ukupna globalna potrošnja po stanovniku mogla bi opasti za 20%, što bi imalo dalekosežne negativne ekonomske posledice. Takođe, sumarni zaključak Radne grupe 2, iznesen u četvrtom izveštaju (IPCC, 2006) Međuvladinog panela za klimatske promene, ukazuje da će troškovi i koristi od klimatskih promena varirati u širokom obimu, u zavisnosti od lokacije do lokacije, za pojedine industrije, naselja i stanovništvo, ali da će neto efekti biti uglavnom negativniji sa rastom intenziteta klimatskih promena, te da će ekonomski troškovi nepogoda uzrokovanih klimatskim promenama rasti.

Najpoznatije dve analize uticaja klimatskih promena na ekonomiju jesu Šternova (Stern, 2006) i Nordhausova (Nordhaus, 2007) analiza koje se međusobno razlikuju u pogledu procene budućih ekonomskih troškova klimatskih promena zbog uzimanja u obzir različitih diskontnih stopa pri utvrđivanju sadašnje vrednosti budućih dobara. Šternov izveštaj ukazuje na veći ekonomski uticaj klimatskih promena na ekonomiju jer koristi nižu stopu diskontovanja (1,4%) zbog uzimanja u obzir etičke dimenzije, za razliku od Nordhausa koji koristi diskontnu stopu od 6%. U proceni ekonomskih implikacija klimatskih promena neophodno je imati u vidu i etičku dimenziju. Uzimanje u obzir etičke dimenzije utiče na rezultate modeliranja ekonomskih implikacija klimatskih promena. Što je niža diskontna stopa, to je veća sadašnja vrednost budućih dobara, a to opravdava veće izdatke za sprečavanje produkovanja negativnih efekata klimatskih promena u sadašnjosti, što pokazuje i razlika u diskontnim stopama navedenih izveštaja (vidi Grafikon 9).

Grafikon 9: Procene ekonomskih implikacija prirodnih katastrofa prema vrednosti dobara u budućnosti (Štern vs. Nordhaus)
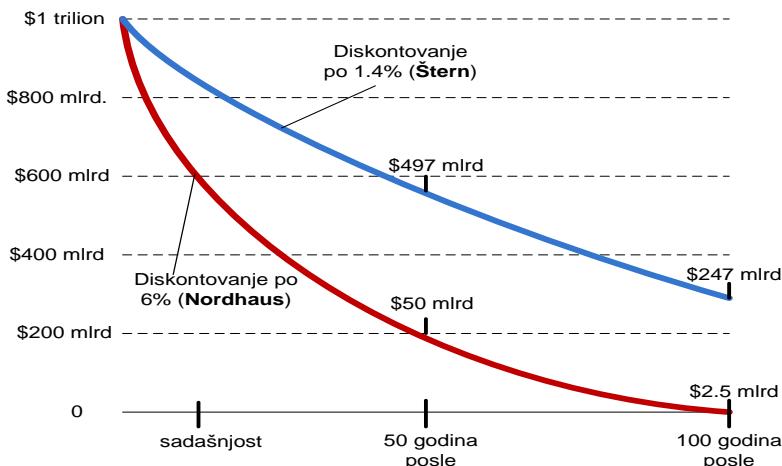
Izvor: Broome, J. (2008)

Na Grafikonu 9 vidi se da pri korišćenju diskontne stope od 1,4% sadašnja vrednost dobara, koja će za 100 godina iznositi 1 bilion dolara, jeste 247 milijardi dolara, dok pri korišćenju diskontne stope od 6%, sadašnja vrednost te iste buduće vrednosti dobara iznosi 2,5 milijarde dolara.

5. Pristupi smanjenja uzroka klimatskih promena

Postojalo je do sada nekoliko pokušaja da se dođe do rešavanja problema klimatskih promena njihovim usporavanjem i smanjivanjem rasta temperatura na pred industrijske nivoe, kako bi se obezbedio održivi ekonomski rast. Prvi i najpoznatiji međunarodni pokušaj bio je sporazum u Kjotu iz 1997. godine. U organizaciji Konvencije Ujedinjenih nacija za klimatske promene 11. decembra 1997. godine usvojen je protokol u japanskom gradu Kjoto po kome je sporazum i dobio ime. Za njegovo stupanje na snagu bilo je potrebno da ga ratifikuje najmanje 55

država i da one koje su ga ratifikovale čine najmanje 55% zagađivača. Ovaj protokol formalno je stupio na snagu kada ga je Rusija ratifikovala 16. februara 2005. godine i kada je ispunjen uslov postojanja 55 zemalja potpisnica koje su na osnovu podataka za baznu 1990. godinu uzrokovale 55% od ukupnog svetskog zagađenja. Srbija je ovaj sporazum ratifikovala 2007. godine. Kjoto protokol, kao dodatak prethodnom sporazumu o redukciji emisije štetnih gasova koji izazivaju globalno zagrevanje, nalaže razvijenim zemljama smanjenje emisije gasova koji izazivaju efekat staklene bašte. U ove štetne gasove spadaju: ugljen-dioksid, metan, azot-dioksid, fluorougljovodonik, perfluorougljovodonik i sumpor-heksafluorid. Zbog činjenice da utiče na gotovo sve sektore ekonomije smatra se da je Kjoto protokol sporazum sa dalekosežnim efektima na okruženje i održivi razvoj. Prema odredbama Kjoto protokola zemlje koje su navedene u samom protokolu u Aneksu B treba da redukuju emisiju štetnih gasova ispod nivoa koji je za njih specificiran. Međutim, 2012. godine Kjoto protokol je pokrivao manje od 15% svetskih emisija, budući da ga SAD nisu ratifikovale, a da su se iz protokola povukle Kanada, Rusija i Japan.

Nakon Kjoto protokola, potpisana je 2000. godine Milenijumska deklaracija gde je jedan od postavljenih ciljeva bio obezbeđenje ekološke održivosti. Na Samitu o Zemlji održanom u Rio de Ženeiru 1992. godine zaključeno je da „današnji razvoj ne sme da ugrozi potrebe sadašnjih i budućih generacija". Na ovom samitu o životnoj sredini i razvoju usvojena su dva važna multilateralna ekološka sporazuma: Okvirna konvencija Ujedinjenih nacija (UN) o klimatskim promenama i Konvencija o biološkom diverzitetu, a postavljen je i temelj za dve godine kasnije usvojenu Konvenciju UN o borbi protiv dezertifikacije, tj. protiv procesa pretvaranja obradivog zemljišta u pustinjsko. Svetski lideri su se složili da sa Milenijumskih ciljeva razvoja pređu na Ciljeve održivog razvoja. Za razliku od Milenijumskih ciljeva razvoja, koji se u najvećoj meri odnose na siromašne zemlje, dok bogate pominju samo kao donatore, ciljevi održivog razvoja trebalo bi da budu primenjivani u svim zemljama.

Polazeći od osmog cilja održivog razvoja definisanog na Samitu Rio + 20 koji se odnosi na ograničavanje antropogenih faktora kao uzroka klimatskih promena, u decembru 2015. godine usvojen je Sporazum

o klimatskim promenama (Paris agreement, 2015) na Međunarodnoj konferenciji o klimi u Parizu. Sporazum je usvojen posle više od četiri godine međunarodnih pregovora i dve nedelje intenzivnih razgovora u Parizu, i smatra se istorijskim. On je obezbeđujući i podrazumeva smanjenje CO_2 do 2030. godine. Sporazumom u Parizu vlade zemalja u svetu su se dogovorile oko niza mera koje uključuju zajedničko delovanje u redukciji emisija, unapređenju transparentnosti, adaptaciji, pitanjima gubitaka i oštećenja i podrške. Ključni aspekt dogovora jeste da dugoročni cilj bude smanjenje globalnog zagrevanja i da se ograniči porast globalnih prosečnih temperatura na nivo znatno ispod 20^0C više u odnosu na pred industrijske nivoe i da se nastoji da porast bude limitiran na $1,50^0C$, s obzirom da bi ovako ograničen porast značajno redukovao rizike i uticaj klimatskih promena. Mnoge zemlje imaju svoje planove za redukciju emisije štetnih gasova. Srbija planira da do 2030. godine smanji emisiju ugljen-monoksida za 9,8% u odnosu na 1990. godinu.

Poslednji sporazum o smanjenju klimatskih promena jeste sporazum iz Glazgova iz 2021. godine. To je ujedno i prvi klimatski sporazum kojim se eksplicitno planira smanjenje korišćenja uglja, najgoreg fosilnog goriva koje doprinosi globalnom zagrevanju. Ovim sporazumom se od država traži da revidiraju klimatske planove i postave ambicioznije ciljeve za smanjenje emisija štetnih gasova za 2030. godinu, da bogate zemlje povećaju novčane izdatke, pored 100 milijardi dolara godišnje koje imaju od ranije, a koje daju onima koji već trpe štetu od uticaja klimatskih promena, i traži se postepeno smanjenje korišćenja uglja.

I pored brojnih sporazuma i ekonomskih podsticaja uključenih u njih, podaci navedeni u ovom radu ukazuju da postoji porast uzroka klimatskih promena i njihovih posledica. Potrebno je da države u kojima bi svi ekonomski učesnici, uključujući domaćinstva, preduzeća, organe državne uprave, menjali svoje potrošačke navike. Iako su sporazumi o klimatskim promenama zastupljeni u medijima i svi znaju za njih, malo ko je spreman da se odrekne navika potrošnje koje su doveli do povećanja klimatskih promena. Problem je u činjenici da države ne internalizuju koristi od svojih politika čiji je cilj umanjenje emisija: ove politike ostaju nedovoljne, stope emisija ostaju na visokom nivou, dok klimatske promene ubrzavaju tempo (Tirol, 2019).

Da bi se ostvario efekat sporazuma neophodno je da ekonomski akteri budu odgovorni u pogledu globalnog zagrevanja (Tirol, 2019), što je i u skladu sa Direktivom o zaštiti okruženja u EU (Directive, 2004), koja podrazumeva princip da „zagađivač plaća". Ekonomski pristup podrazumeva primenu subvencija za korišćenje „zelene energije", oporezivanje na ugljenik podjednako na svetskom nivou, kako ne bi došlo do seljenja preduzeća u druge zemlje ili pada konkurentnosti troškovno opterećenih preduzeća za redukciju ugljenika.

Trgovanje emisijom ugljen-dioksida, tzv. carbon trading, tržišni je mehanizam koji se počeo koristiti nakon limitiranja emisije ugljen-dioksida Kjoto protokolom. Ovaj tržišni mehanizam obezbeđuje kontrolu zagađenja atmosfere ugljen-dioksidom putem obezbeđenih ekonomskih podsticaja za dostignutu redukciju u emisijama zagađivača. U cilju smanjenja emisije štetnih gasova, kao i u cilju nadoknade društvenih troškova prouzrokovanih klimatskim promenama, vlade država mogu uvesti poreze na emisiju ugljen-dioksida ili kreirati tržišne mehanizme. Ovi tržišni mehanizmi funkcionišu tako što država odredi maksimalne limite emisije ugljen-dioksida za svaku kompaniju, pri čemu ti limiti predstavljaju dopuštenja, tj. kredite koje kompanija kada iskoristi više ne može emitovati ugljen-dioksid. One kompanije koje emituju manje ugljen-dioksida u mogućnosti su da svoje neiskorišćene kredite dozvoljene emisije ugljen-dioksida prodaju na tržištu, tj. kompanijama kojima je u poslovanju neophodna veća emisija ugljen-dioksida nego što im je dozvoljeno. Na taj način se suštinski finansijski nagrađuju kompanije koje emituju manje gasova koji izazivaju efekat staklene bašte u odnosu na ono što im je dozvoljeno. Kao najčešći kupci ovih kredita javljaju se energetske kompanije i različite vrste industrijskih kompanija, uglavnom iz industrijski razvijenih zemalja, dok se kao najčešći prodavci javljaju subjekti koji upravljaju šumskim gazdinstvima ili poljoprivrednim zemljištem, pretežno subjekti iz nerazvijenih zemalja. Ovim kreditima trguje se na tržištima kao što je Chicago Climate Exchange u SAD, dok je u Evropskoj uniji, u prvoj fazi primena programa Evropske unije o trgovanju emisijama štetnih gasova (European Union Emissions Trading Scheme), dozvoljeno direktno trgovanje između privrednih subjekata po principu aukcije. Prioritet bi trebalo da bude načelni sporazum o utvrđivanju univerzalne cene ugljenika koja bi bila kompatibilna sa pro-

klamovanim ciljem smanjenja emisije štetnih gasova, uz uspostavljenu nezavisnu kontrolnu infrastrukturu i ekonomske podsticaje za zemlje u razvoju. U daljoj primeni ovaj sistem bi trebalo učiniti pravičnijim, u smislu da se od razvijenih zemalja dobiju obećanja o „zelenim" fondovima koji bi omogućili „velikodušnu" raspodelu dozvola u korist zemalja u razvoju.

6. Zaključak

Klimatske promene nastale kao posledica industrijalizacije predstavljaju realnost uslova u kojima se ostvaruju ekonomske aktivnosti današnjice i na makro i na mikro ekonomskom nivou. Klimatske promene danas imaju snažan uticaj na ukupne ekonomske aktivnosti i čitavo društvo, pre svega preko generisanja katastrofalnih događaja koji dovode do pada ekonomske aktivnosti i blagostanje „pomeraju" na niži nivo, a sve su indicije da će se i u budućem periodu nastaviti ispoljeni trend.

Čovečanstvo u budućih nekoliko decenija neće biti u stanju da zaustavi uticaj antropogenih efekata staklene bašte, jer čak i u uslovima kada bi bile obustavljene sve emisije gasova u atmosferu, gasovi koji danas izazivaju globalno zagrevanje još dugo vremena će ostati u atmosferi sa neizmenjenim negativnim uticajem. Međutim, ukoliko se drastično redukuje emisija gasova koji uzrokuju prenaglašeni efekat staklene bašte, globalna klima će moći da dostigne novu, potencijalno prihvatljivu ravnotežu. Da bi se to moglo ostvariti, neophodno je obezbediti korišćenje održive kombinacije izvora energije, a ne isključivo fosilnih goriva čije je korišćenje glavni uzročnik povećanja koncentracije gasova u atmosferi koji uzrokuju efekat staklene bašte, koja će uzimati u obzir zdravstvena i pitanja okruženja, kao i dugoročnu ekonomsku održivost. U pogledu energetskih izvora, svedoci smo tri paralelna faktora koji utiču na neophodnost potrebe pronalaženja optimalne kombinacije, a to su, osim globalnog zagrevanja, cene energenata, te politički i ratni konflikti. U pogledu drugih opcija koje stoje na raspolaganju, pored veće upotrebe alternativnih izvora energije, značajne su mogućnosti redukovanja tražnje za proizvodima koji zagađuju atmosferu, veće pošumljavanje odnosno obustavljanje daljeg propadanja šuma, kreiranje svetskog tržišta za trgovanje emisijom ugljen-dioksida (engl. *carbon trading*).

U budućem periodu, i nauka i čitavo društvo biće suočeni sa novim izazovima u pogledu pronalaženja mogućnosti prilagođavanja tehničkih i ekonomskih sistema globalnim promenama klime, kao i izazovima pronalaženja rešenja za unapređenje mogućnosti ovih sistema u pogledu anticipiranja ovih promena, ali i izazovima pronalaženja mogućnosti izbegavanja daljeg povećavanja antropogenih efekata staklene bašte, kako bi se sprečilo ubrzavanje porasta ovih efekata u stepenu koji bi u ekstremnom slučaju mogao u potpunosti onemogućiti čovekovo postepeno prilagođavanje novim klimatskim uslovima.

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GLOBAL CLIMATE CHANGE:
MACRO-ECONOMIC CHALLENGES

Abstract: The 20th century saw an unprecedented increase in global warming. Today there is little point in pondering whether global climate change is underway: the burning question is what its consequences for life on Earth, economy and human society are. The aim of the paper is to examine the impact of climate change trends and their challenges from a macroeconomic perspective. First, we examine the climate change trends in relation to economic development. In the sections that follow, we examine the impact of climate change on catastrophic damages and on national economies. Finally, we discuss economic approaches to mitigating climate change.

Key words: macroeconomic challenges, climate change, risk, economy

1. Introduction

Climate is defined as the average state of the atmosphere over a place or area in a certain period. In ancient times, it was believed that climate depends only on the inclination of the Sun's rays. In the 19th century, climate was defined as the average state of the atmosphere over a certain place or area. In modern times, climate is a statistical description of relevant meteorological conditions over a certain place or area of the Earth's surface, usually averaged at 30 years, considering the mean and variability of atmospheric conditions.

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Weather conditions cannot be described simply in terms of cause and effect. They are the outcome of complex systems in which many different factors influence each other, so that even the slightest variation in any factor can result in enormous consequences. Weather conditions are influenced by minor or major changes in shorter or longer periods in the atmosphere, biosphere, lithosphere, and hydrosphere. Consequently, it would be impossible to explain the change in weather conditions due to the variation of only one cause. Weather patterns also affect the changes in climate conditions. Therefore, it would be wrong to conclude that weather is under the influence of climate: rather it is the other way round. However, bearing in mind the evidence of climate change, which is defined as the long-term shift in the variability or average state of the atmosphere, it is possible to predict the trends of these changes in weather conditions.

Today there is little point in pondering whether global climate change is underway: the burning question is what its consequences for life on Earth, economy and human society are. On the one hand, global climate change will significantly affect the economies of certain countries, especially developing countries; on the other hand, economies can also provide a significant incentive to minimize the causes of climate change. Rising sea levels that affect islands and coastal cities, climate disturbances, extreme rainfall and droughts, uncertain harvests and other consequences of climate change will have a significant impact on the economy, but also on geopolitics, which will lead to rising migrations and public discontent. It is highly likely that climate change will permanently threaten the well-being of both present and future generations.

Understanding global climate change is necessary to gain insight into their potential effects, such as hurricanes, tsunamis, winter storms, or other natural disasters and their impact on the economy and decline in GDP and global well-being. Based on these insights, countries can make informed and timely decisions to minimize the factors that contribute to global warming, i.e., climate change. For any country, both future costs and its very survival may depend on the decisions that are made today. Therefore, climate change can serve as an example of a risk where long-term planning is of essential importance in order to avoid potentially catastrophic consequences. The purpose of this paper is to

examine the evident trends of climate change and their impact on the global economy, and to recommend change management options that would benefit economy in the future.

The aim of the paper is to examine the impact of climate change trends and their challenges from a macroeconomic perspective. First, we examine the climate change trends in relation to economic development. In the sections that follow, we examine the impact of climate change on catastrophic damages and on national economies. Finally, we discuss economic approaches to reducing the causes of climate change.

2. Climate change trends and economic development

The greenhouse effect was first proposed by the French scientist Jean-Baptiste Joseph Fourier in 1824. It was further investigated by the Swedish scientist Svante Arrhenius, who discovered that by absorbing solar radiation, the Earth's atmosphere allows the planet to warm up. The greenhouse effect is extremely important since the Earth would be much colder without it and could not sustain life. However, global economic activities and increases in gas emissions have caused an enhanced greenhouse effect, or global warming, which affects climate change.

Many studies have shown that climate change, or global warming, is a consequence of the increase in the carbon dioxide concentration in the atmosphere (CO2). Carbon dioxide is one of the basic elements capable of trapping solar radiation energy within a planet's atmosphere. It is clear why an increased concentration of this gas in the atmosphere results in an increased greenhouse effect. The increase in the concentration of carbon dioxide in the atmosphere in the period from 1957 to 2022 is shown in Graph 1.

*Graph 1: Monthly mean atmospheric CO2 trends from 1957 to 2022,
measured at Mauna Loa Observatory, Hawaii, USA*
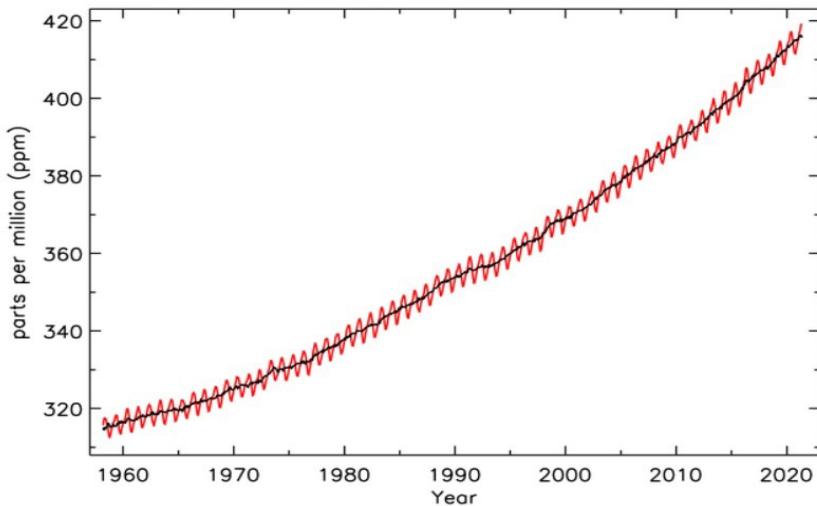
Source: GML (2022).

According to United Nations data, annual carbon dioxide emissions have increased by an average of 6.4 gigatons of carbon per year during the 1990s and to 7.2 gigatons per year from 2000 to 2005. This contributed to a 20percent increase in heat retention and re-radiation to the Earth between 1995 and 2005, the largest increase in the last 200 years. According to the fourth report of the Intergovernmental Panel on Climate Change (IPCC, 2007), an 80percent increase in carbon dioxide emissions was recorded from 1970 to 2004, which makes 77percent of the total emissions of greenhouse gases.

According to the fifth report of the IPCC (2014), if the emissions of greenhouse gases continue at the current rate, global mean temperature will rise between 3.7°C and 4.8°C by the end of the 21st century. The consequences may be disastrous: over 1.4 billion people could be exposed to water stress in Africa, the Middle East, and Southeast Asia.

In hindsight, it has become clear that it was the Industrial Revolution that kick-started climate change. Namely, data from the fourth report of the Intergovernmental Panel on Climate Change have shown that the concentration of atmospheric carbon dioxide before the Industrial Revolution was 280 parts per million (ppm), and that in 2005 it was 379 ppm. Also, the increase in the greenhouse effect in the industrial era is believed to be unprecedented in more than 10,000 years. If atmospheric CO_2 pollution were to continue by the current rate until 2050, the concentration of carbon dioxide would double in comparison to the pre-industrial period. Atmospheric C02 level would reach a critical 550 ppm, which would cause a temperature increase of 2 – 5 ºC with a probability range of at least 77percent to as high as 99percent (Stern, 2006). The temperature increase would raise the risk of famine by 25 to 60percent, greatly threaten the availability of water, hasten a partial or complete decay of the Amazon rainforests, double the damage caused by hurricanes, and lead to the irreversible melting of the Greenland ice sheet.

Before the Fourth Report of the Intergovernmental Panel on Climate Change was published, there were different interpretations as to the causes of global warming and intensified greenhouse effect. However, the robust findings of the report have shown that the warming of the climate system is unequivocal, and that most of the global average warming over the past 50 years is very likely (greater than 90percent probability, based on expert judgement) due to human activities, i.e., industrialization. Without the increased CO2 emissions caused by human activity, and under the influence of only solar and volcanic energy, global cooling, not warming, would most likely occur.

Graph 2 shows the correlation between economic growth (global GDP) and CO2 emissions from 1960 to 2010.

Graph 2: Global GDP and CO2 emissions between 1960 and 2010
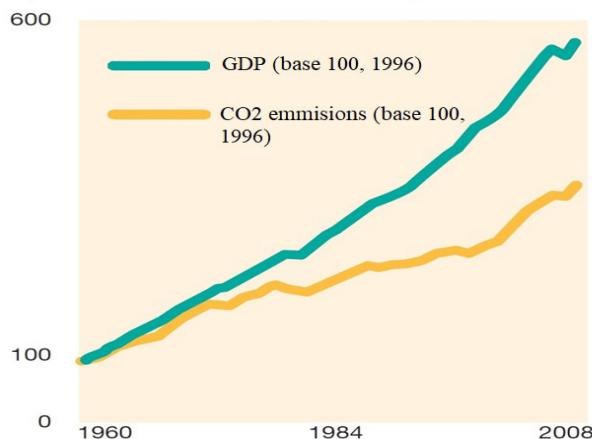
Source: Canfin, P., Grandjean, A., Cochran, I., & Martini, M. (2015).

To keep the global average temperatures from rising by more than 2°C above pre-industrial levels, while at the same time achieving economic growth, means that GDP must no longer go together with the increase in greenhouse gas emissions. In essence, this means abandoning the use of fossil fuels to a significant extent. In 1960, the amount of CO_2 per GDP unit produced was 1000g, adjusted for purchasing power parity. At the turn of the 21st century, it was 500g, and 400g of CO_2 in 2010. To prevent the global temperature increase, the emissions must not exceed 60g of CO_2 per GDP unit by 2050, as shown in Graph 3.

Graph 3: GDP and CO2 emissions projected growth by 2050, in case of global average temperature increase below 2°C
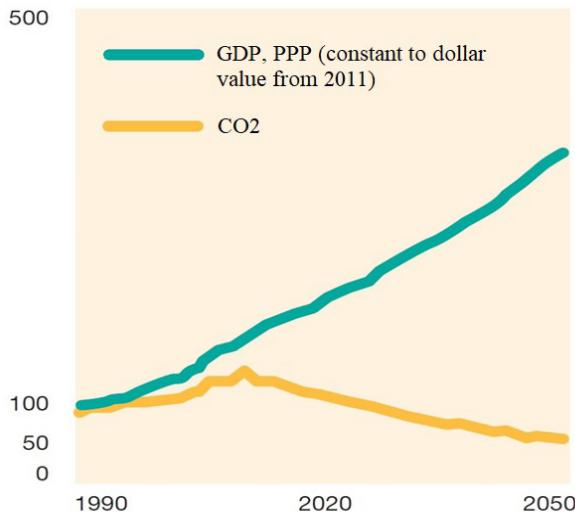
Source: Canfin, P. et al. (2015). *Note: PPP = purchasing power parity*

Graph 2 demonstrates how technological advancements brought about a decrease in CO_2 per GDP unit emissions from 1960 to 2010. If we introduce a fundamental change to energy consumption, i.e., how we use energy for heating, construction, transport, manufacture, etc. (Tirol, 2019), CO_2 per GDP unit emissions will drop further, and the global temperature increase will remain below 2°C (Graph 3).

3. Catastrophic damages caused by climate change

Climate change leads to an increase in global temperatures, sea levels and melting of the ice sheet, which causes a higher incidence and greater intensity of harmful consequences of catastrophic weather events.

The gradual increase in global average temperature over the last 170 years is shown in Graph 4.

Graph 4: Gradual rise in global average temperature from 1850 to 2020
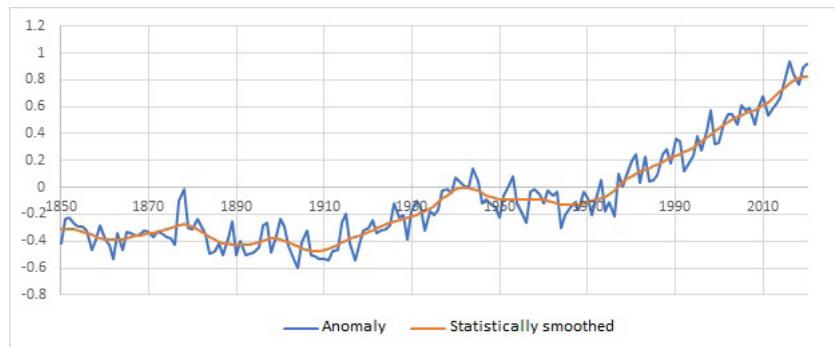
Source: CRS (2022)

From 1900 to 2014, the average global air temperature increased by +0.7°C. However, the rise was not continuous, but proceeded at an accelerated rate of +0.18°C per decade from 1976 onward. Between 2001 and 2010, the global temperature was higher by 0.27°C than the thirty-year mean temperature from 1961 to 1990, and by 0.22°C higher than from 1991 to 2000. The melting of the ice sheet in the Arctic and Greenland is evidence of the ongoing global warming. According to NASA, the ice surface in the Arctic is shrinking by an average of 9percent per decade. Besides the rise in temperature, evidence of the enhanced greenhouse effect are the melting of ice sheets and the rise of sea level (see Graph 5).

Graph 5: Sea level rise due to global warming
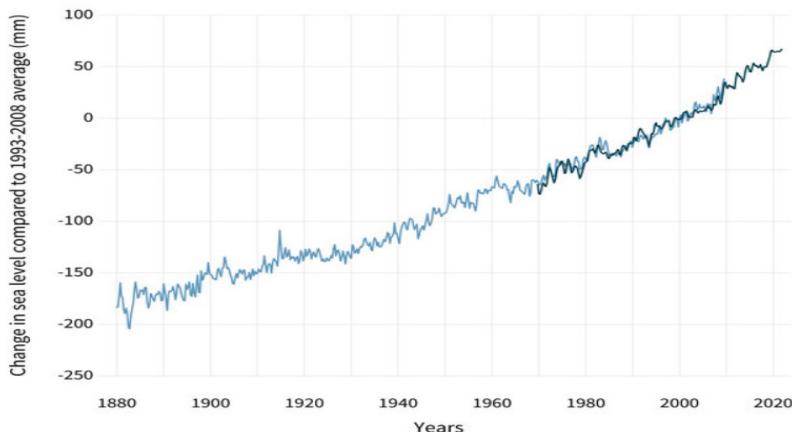
Source: NOAA (2022, February 22).

Graph 5 shows the average sea level rise recorded from 1880 to 1980. According to the United Nations Environment Programme analysis, the global average sea level during the 100 years shown has risen by 10 to 25 centimetres.

These trends have led to a higher incidence and greater extent of catastrophic damage. Catastrophic damage is defined as a simultaneous occurrence of one or more catastrophic events affecting a large number of structures or products and involving risk to lives and property (Marović & Žarković, 2007).

Insurance Information Institute defines a catastrophe as a natural or man-made event that causes USD 25 million or more in insured property losses, or 10 deaths; or 50 people injured; or 2,000 filed claims or homes and structures damaged (Insurance Information Institute, 2022, January 25).

Events such as hurricanes (especially the hurricane season of 2005), floods (e.g., the 2007 floods in the UK caused the greatest damage in the past 60 years), earthquakes (the 1994 Los Angeles earthquake, the 1995 Kobe earthquake and the 2008 earthquake in Sichuan Province, China), tsunamis (the 2004 Thailand tsunami and the 2008 Myanmar tsunami),

terrorist attacks (2001 World Trade Center) are happening with increasing incidence and with more harmful effects than ever before, both for the insurance market and for national economies, including the global economy. Graph 6 shows the increase in the number of catastrophic events worldwide from 1970 to 2020.

Graph 6: Natural and man-made catastrophes from 1970 do 2020
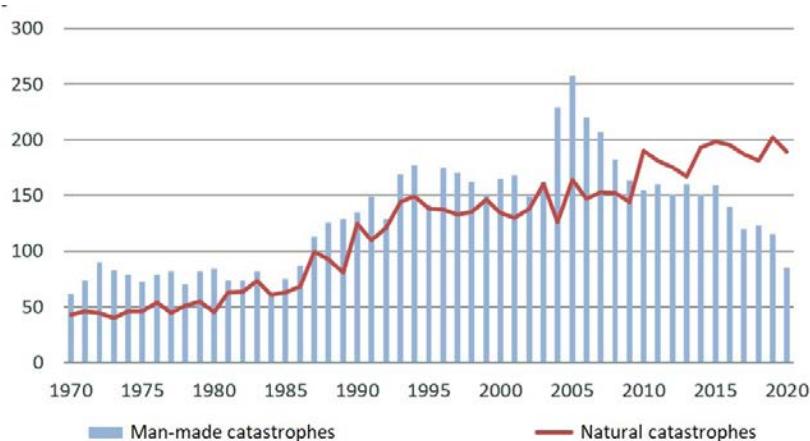
Source: Swiss Re (2021)

The density of people, facilities, and infrastructure per unit of land, combined with the population increase, property values, technological development and globalization effects, means that natural or man-made events can affect an increasing number of people and cause greater property damage than ever before. According to the OECD, a repeat of the 1923 Tokyo earthquake would result in USD 3000 billion or more in property losses, i.e., more than 75percent of Japan's GDP (OECD, 2003). Graph 7 shows the growing impact, in terms of the size of property losses, of natural catastrophes on the insurance market from 1970 to 2020.

Graph 7: Insured losses from natural catastrophes, 1970 – 2020 (USD billion)
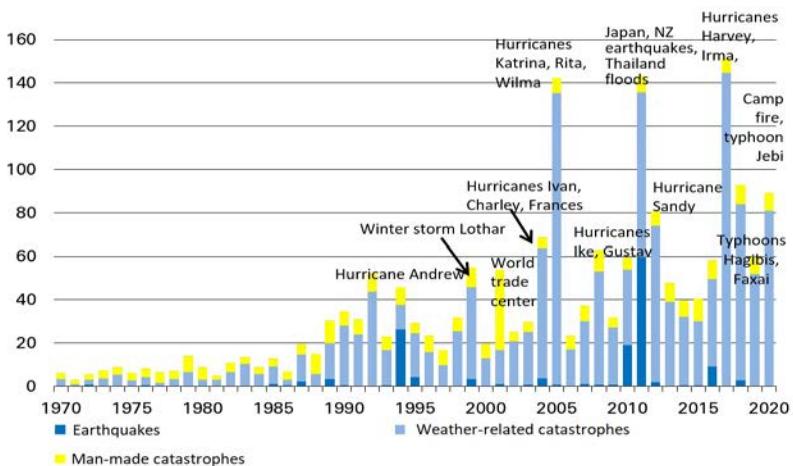
Source: Swiss Re (2021)

Graph 7 shows the continuous growth rate of losses due to higher incidence of natural and man-made catastrophes, especially from 2010 to 2020. It is evident that weather-related, or climate change-induced disasters are on the rise.

4.   Impact of climate change on the economy

Graph 8 shows the impact of loss events, primarily catastrophes, on the economy.

Graph 8: Social welfare before and after catastrophic event
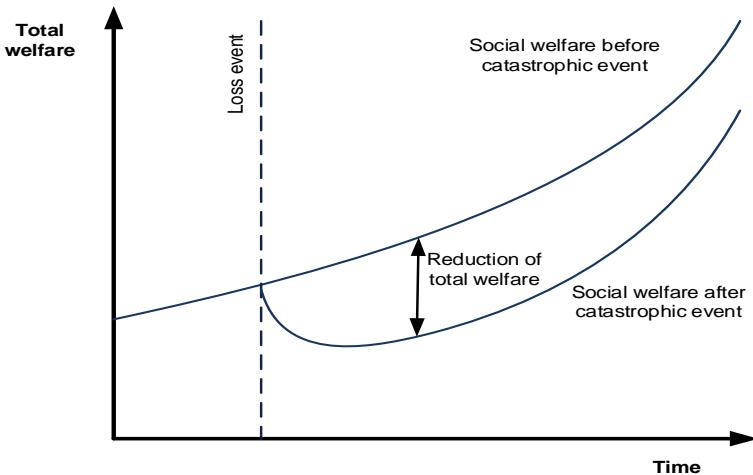
Loss events cause a reduction in total welfare both due to the immediate harmful impact and the fact that social welfare cannot return to the pre-event level immediately afterwards. Graph 8 shows the trajectory of social welfare before and after a loss event. Immediately after a loss event, the trajectory of social welfare drops sharply since disasters cause loss of lives and property. After the destruction stops and recovery begins, the trajectory of social welfare begins to rise again, but at a lower level than before the loss event. However, if the overall risk management were satisfactory, social welfare should be able to not only reach the pre-event level, but to exceed it (e.g., old technology being destroyed and replaced by new, more efficient technology). Risk management is adequate if it ensures the reduction of risk costs: by influencing the nature of loss events, preventing, and reducing the incidence or intensity of adverse consequences, and by timely preparation for recovery and reconstruction after the loss event.

Climate change is a major cause of catastrophic events that threaten human lives and reduce the overall social welfare. Such events also cause

huge costs that affect the economy. Climate change presents a major risk to the global economy as it affects social wealth, resource availability, energy prices and company value. This phenomenon affects the availability of raw materials, the continuity of production and the damage and destruction of production facilities, which in turn cause stock prices fluctuations, affecting the capital markets.

Global warming is a major threat to industries, settlements and communities located in coastal areas and flooded river valleys, to areas dependent on resources sensitive to climate change, as well as to areas experiencing extreme weather and climate events and rapid urbanization. Climate change has a different impact on different sectors. In this context, the following social and economic impacts of climate change have been identified (McLean & McLean, 2001): enhanced loss of property and coastal habitats, increased risk of flooding and loss of human life, damage to coastal protection works and other infrastructure, loss of renewable and vital resources, loss of tourist, recreational and transport functions, loss of cultural resources and valuables, increase of risks in agricultural production, especially cultivation of aquatic organisms due to the decline of soil and water quality due to floods, droughts and other disasters.

Hurricanes that threaten the US coastal areas have had the greatest impact on global economy of all the catastrophic events caused by global warming. The economic costs incurred after the catastrophic 2005 hurricane season alone were estimated at more than USD 200 billion (CIER, 2007). In Europe, the most severe economic consequences of natural disasters caused by weather occur due to floods and winter storms. According to preliminary data from Swiss Re (2021), extreme weather events in 2021, including extreme winter conditions, floods, severe thunderstorms, heat waves and a major hurricane, led to estimated annual insured losses from natural disasters of USD 105 billion, the fourth largest amount since 1970. While Hurricane Ida was the costliest natural disaster in 2021, Winter Storm Uri and other secondary loss events caused more than half of the total damages.

Examining the impact of climate change on the economy, the costs incurred by preventative measures must be included. For instance, con-

sidering that there are about 20,000 kilometres of coastline and more than 32,000 kilometres of coastal areas exposed to frequent flooding in the USA, it is estimated that adapting to a sea level rise of one meter would require investments of about USD 156 billion. This amount pales in comparison to the total loss caused by natural disasters in 2021 which in the USA alone amounts to USD 169 billion (Insurance Information Institute, 2022, January 25). The costs of adapting to climate changes will put an enormous pressure on the economy of highly developed countries; therefore, the poor will be particularly vulnerable to climate change, especially those living in high-risk areas.

The causes of the higher economic costs of catastrophic events in recent times are not only climate changes, which bring about a higher incidence of loss events. In addition to climate change, significant factors that compound the economic consequences of natural disasters are the population and business growth, higher living standard and higher value of property exposed to catastrophic events, population density and economy in the areas affected by extreme weather conditions, sensitivity of modern societies and technologies to natural disasters, and other factors. It is estimated that in 15 years, even without the effects of climate change, a hurricane of the magnitude of the 1926 Miami hurricane could cause losses of USD 500 billion (Pielke, Gratz, Christopher, & Collins, 2008).

According to Stern's report (Stern, 2006) on the effects of climate change on the economy, extreme weather conditions could cause a drop in the total GDP by about 1percent, and a further temperature increase by two to three degrees could cause a reduction in the total global economic output by 3percent. Furthermore, if the temperature were to increase by five degrees Celsius, the global economic output could drop by about 10percent. According to the worst-case scenario, the total global consumption per capita could drop by 20percent, which would have far-reaching negative consequences. Also, the summary conclusion of Working Group 2, presented in the Fourth report (IPCC, 2006) of the Intergovernmental Panel on Climate Change, states that the costs and benefits of climate change will vary widely, depending on location, for individual industries, settlements, and population, but that the net effects will be mostly negative with the increase in the intensity of cli-

mate change, and that the economic costs of disasters caused by climate change will increase.

The two best-known reports of the climate change impact on the economy are those of Stern (2006) and Nordhaus (2007). These reports reached divergent conclusions about the future economic costs of climate change, due to applying different discount rates when determining the present value of future goods. The Stern review shows a greater economic impact of climate change on the economy because it uses a lower discount rate (1.4 percent) and has the ethical dimension, while the Nordhaus report uses a discount rate of 6 percent. In examining the climate change impact on the economy, it is necessary to consider the ethical dimension. This affects the results of modelling the economic implications of climate change. The lower the discount rate, the higher the present value of future goods, which justifies higher spending for mitigating the adverse effects of climate change today. Graph 9 shows the difference in the discount rates of the two reports.

Graph 9: Climate change impact on the economy based on the value of future goods (Stern vs. Nordhaus)
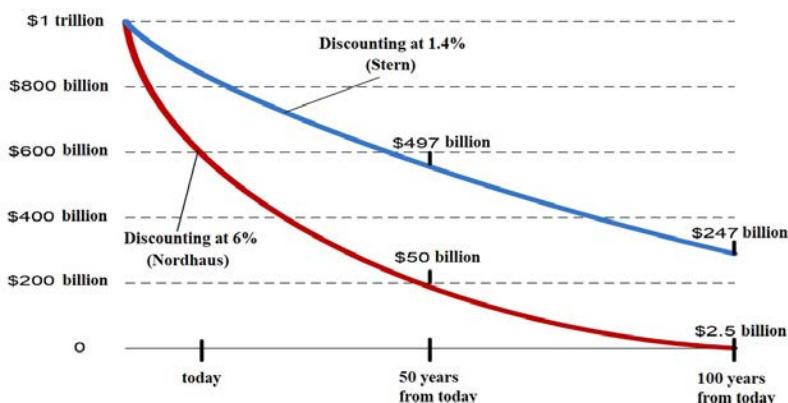
Source: Broome, J. (2008)

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Graph 9 shows that Stern's 1.4 percent discount rate places a places a relatively high value on the well-being of future generations. A trillion dollars' worth of goods received in 100 years is valued at USD 247 billion today. Nordhaus's 6 percent discount rate places far less value than Stern's rate does on the well-being of future generations. A trillion dollars' worth of goods in 100 years is valued at only USD 2.5 billion today.

5. Mitigation of climate change

On a global level, there have been several attempts to mitigate the effects of climate change by slowing it down and reducing the rise in temperatures to pre-industrial levels, in order to ensure sustainable economic growth. The first and most famous international attempt was the 1997 Kyoto Protocol. The Kyoto Protocol was adopted on 11 December 1997. Owing to a complex ratification process, it entered into force on 16 February 2005, when it was ratified by Russia. It had to be ratified by at least 55 countries and 55 percent of major polluters. Serbia ratified the protocol in 2007. The Kyoto Protocol operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. The GHGs include: carbon dioxide, methane, nitrogen dioxide, hydrofluorocarbon, perfluorocarbon and sulphur hexafluoride. Involving almost all sectors of the economy, the Kyoto Protocol is a treaty with far-reaching effects on the environment and sustainable development. In its Annex B, the Kyoto Protocol sets binding emission reduction targets for 37 industrialized countries and economies in transition and the European Union. In 2012, however, the Kyoto Protocol covered less than 15percent of world emissions, since the US did not ratify it, and Canada, Russia and Japan withdrew from the treaty.

In 2000, the Millennium Declaration was adopted, with the goal to ensure environmental sustainability. At the 1992 Rio de Janeiro Earth Summit it was concluded that "today's development must not jeopardize the needs of present and future generations." Two important multilateral environmental agreements were adopted at this summit: the United

Nations (UN) Framework Convention on Climate Change and the Convention on Biological Diversity. It also laid the foundation for adopting the UN Convention to Combat Desertification (i.e., turning arable land into desert). World leaders agreed to move from the Millennium Development Goals to the Sustainable Development Goals. Unlike the Millennium Development Goals which mostly apply to poor countries while the rich countries act as donors, the Sustainable Development Goals are meant to be implemented worldwide.

The eighth goal of sustainable development defined at the Rio + 20 Summit is to limit anthropogenic factors as the cause of climate change. Based on this goal, the Paris Agreement was adopted at the International Climate Conference in Paris in December 2015.

The treaty was adopted after more than four years of international negotiations and two weeks of intensive talks in Paris and is considered a landmark in the multilateral climate change process. For the first time, a binding agreement brought all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects. Countries agreed on a series of measures that include joint action in the GHG emission reduction, improved transparency, adaptation, loss and damage recovery and support. The Paris Agreement aims to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. Many countries have their own plans to reduce the GHG emissions. By 2030, Serbia plans to reduce carbon monoxide emissions by 9.8 percent compared to 1990 by 2030.

The last agreement on reducing climate change is the 2021 Glasgow Climate Pact. For the first time, nations are called upon to phase down unabated coal power, as coal is the fossil fuel that contributes most to global warming. The treaty calls for countries to revise their climate plans and set more ambitious targets for reducing GHG emissions by 2030, and for rich countries to fulfil the pledge of providing 100 billion dollars annually from developed to developing countries, already suffering the effects of climate change.

Despite numerous treaties and their economic incentives, the data in this paper show that climate change and its effects are still on the rise. Although climate change agreements are widely covered in the media, few people are ready to give up the consumption habits that have led

to climate change and global warming. The problem is that countries do not internalize the benefits of their policies aimed at reducing emissions: these policies remain insufficient, emission rates remain high, while climate change becomes rampant (Tirol, 2019).

To mitigate the adverse climate change effects, all economic actors must accept their liability (Tirol, 2019), according to the EU Environmental Protection Directive (2004) and the principle that "the polluter pays". This approach involves giving subsidies for the use of "green energy" and equal carbon taxation worldwide to prevent industry relocation to other countries or decreased competitiveness of cost-burdened companies for carbon reduction.

Emission trading for carbon dioxide, or carbon trading, is a market mechanism that began to be used after the limitation of carbon dioxide emissions was stipulated by the Kyoto Protocol. This market mechanism regulates the atmospheric carbon dioxide pollution by providing economic incentives for fewer pollutant emissions. To reduce GHG emissions and to offset the social costs of climate change, countries can introduce taxes on carbon dioxide emissions or create market mechanisms. Emissions trading works by setting a quantitative total limit on the emissions produced by all participating emitters. Under emission trading, a polluter having more emissions than their quota has to purchase the right to emit more. The entity having fewer emissions sells the right to emit carbon to other entities. In this way, these entities are financially rewarded. The credits are usually bought by energy companies and various industries from developed countries and sold by the entities that manage forest farms or agricultural land, mostly from developing countries. These credits are traded on markets such as the Chicago Climate Exchange in the USA. In Phase I of the European Union Emission Trading Scheme (or EU-ETS) direct trading between economic entities is allowed, based on auctioning. The priority should be to establish a universal carbon price compatible with the proclaimed goal of reducing GHG emissions, with independent control system and economic incentives for developing countries. In the future, nations should strive to make this system more just, with developed countries pledging to provide "green" funds that would enable a more generous distribution of permits in favour of developing countries.

6. Conclusion

Climate change caused by industrialization is a reality for both macro- and microeconomic activities today. It severely affects global economy and society, most prominently by being the cause of natural disasters that lead to economic slumps and social welfare reduction. It is highly likely that this trend will continue in the future.

In the next few decades, the adverse anthropogenic effects of the GHG emissions will continue to rise. Even if atmospheric emissions stopped today, the GHGs would remain in the atmosphere for a long time, with continued adverse effects. However, if the GHG emissions were drastically reduced, the global climate might achieve an acceptable balance. This can be done by reductions in human emissions of GHGs as well as activities that reduce their concentration in the atmosphere. The most important challenge is to use a sustainable combination of energy sources and to stop burning coal, oil, and gas. Fossil fuels emit most carbon dioxide and greenhouse gas as a whole. Another challenge is to reconcile health and environmental issues with economic viability. There are three important factors that drive the search for a sustainable combination of energy sources: global warming, energy prices and political/military conflicts. Mitigation of climate change may also be achieved by reductions in dairy products and meat consumption (to reduce GHG emissions), transport, forest-management (reforestation and preservation), carbon trading, etc.

In the future, human society will have to face many new challenges. We will have to find ways to adapt our economies and technologies to global climate change and improve them so as to be able to anticipate climate changes. We will have to put a stop to further anthropogenic effects of enhanced GHG emissions which could slow down or ultimately prevent our gradual adaptation to new climate conditions.

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Jelena Antić[1]

ODGOVORNOST DIREKTORA U PRAVU REPUBLIKE SRBIJE

Rezime: Predmet rada su položaj direktora privrednog društva, njegova odgovornost, kao i posledice različitih vidova odgovornosti. Kroz teorijska razmatranja prikazani su osnovni principi funkcionisanja moderne uprave privrednog društva. Pravila ponašanja se ispituju, analiziraju i povezuju korišćenjem normativnog metoda, uz neizostavnu primenu dogmatičkog i sociološkog metoda, s obzirom na to da je pozitivno pravo odraz vrednosnog sistema u društvu. Autor se bavi analizom zakonske regulative u ovoj oblasti, dotičući sve aspekte pravne odgovornosti, s ciljem sveobuhvatnog prikaza prava, obaveza i odgovornosti direktora u domaćem pravu, s osvrtom na savremene tendencije u svetu u ovoj oblasti. Uporednopravna analiza pokazuje prednosti i nedostatke različitih rešenja, ali i primenljivost određenih instituta u okviru našeg pravnog sistema.

Ključne reči: odgovornost, direktor, kontrola, korporativno upravljanje

1. Uvodna razmatranja

Direktori ili članovi upravnog odbora pripadaju organima uprave privrednog društva, što znači da vode poslove unutar društva i zastupaju društvo u odnosima s trećim licima. Njihova prava i obaveze određeni su zakonom i internim aktima društva (pre svega statutom). Prilikom preduzimanja pravnih radnji i kreiranja pravnih akata oslanjaju se na svoju stručnost, iskustvo i savest. Zakonska regulativa sadrži pravila ponašanja koja ih obavezuju na taj način što mogu biti pozvani

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na odgovornost u slučaju njihovog nepoštovanja. U tom smislu, autor predočava posledice lošeg upravljanja, ali i ističe potencijalne mehanizme zaštite direktora i samih privrednih društava, s napomenom da je odgovarajuća pravna regulativa najbolja prevencija nastanka štete za sve zainteresovane strane. Primarno zainteresovane strane u poslovnom okruženju jesu vlasnici, uprava, klijenti, zaposleni i regulatorna tela. Sekundarnu interesnu grupu čine kreditori, razne interesne grupe, životna sredina itd. (Peart & Knowles, 2018, str. 89). U modernoj teoriji i praksi sve su zastupljenija shvatanja o višedimenzionalnim ciljevima privrednog društva. Pored interesa članova, postoje i drugi društveni interesi koji se ne smeju zanemarivati (Radović, 2021, str. 2). Od početka 21. veka primećuje se porast problematičnog ponašanja korporacija u vezi s društvenim i ekološkim pitanjima.[2] Otuda sve veća potreba za usklađivanjem korporativnog upravljanja i društveno odgovornog poslovanja. Nasuprot tome, prisutan je i stav da bavljenje etičkim pitanjima pri upravljanju kompanijama može imati ozbiljne posledice po finansijke rezultate (Zaman, Jain, Samara, & Jamali, 2020, str. 3 i 10). Prof. Fridman (*Friedman doctrine*) koristi termin *socijalne odgovornosti*, postavljajući pitanje da li direktori u tom svojstvu imaju socijalnu odgovornost.[3] Ako imaju, to znači da ne moraju nužno da postupaju u interesu akcionara (Radović, 2021, str. 39). Određenje pravne prirode privrednog društva kao ugovora u nekim pravnim sistemima negira koncept njegove društvene odgovornosti. Naime, ako je kompanija samo ugovor vlasnika, onda ona ima samo ugovorne obaveze da maksimalizuje interese vlasnika (Vasiljević, 2021, str. 54).

Adekvatna pravna regulativa treba da podstakne direktora da radi u najboljem interesu privrednog društva uz poštovanje principa druš-

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[2] Na primer, slučaj izlivanja nafte u Meksičkom zalivu iz 2010. godine ili emisija štetnih gasova kod automobila marke *folksvagen*, povodom koje je reagovala američka Agencija za zaštitu životne sredine (EPA) i dr. Više o tome: Rashid Zaman, Tanusree Jain, Georges Samara, Dima Jamali, Corporate governance meets corpor ernance meets corporate social rate social responsibility: esponsibility: Mapping the interface, Business & Society, 61(3), 690–752, 2020.

[3] Prema Fridmanovoj doktrini, uprava društva je dužna da postupa isključivo u interesu članova. Više o tome na: https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html

tveno odgovornog poslovanja. Da bi se to postiglo, potrebno je pružiti podsticaje članovima uprave i uspostaviti efikasan mehanizam kontrole. Jedan od najboljih mehanizama jeste tržište koje podstiče upravu na efikasno poslovanje s obzirom na postojanje mogućnosti njihove zamene (Jovanović Zattila, 2016, str. 190).

2. Status i funkcija direktora u privrednom društvu

Prema Zakonu o privrednim društvima[4] (dalje: ZPD), privredno društvo ima jednog ili veći broj direktora koje imenuje skupština društva. Dužina trajanja mandata direktora određuje se statutom društva uz poštovanje zakonom predviđenog maksimuma od četiri godine. Funkcija direktora u privrednom društvu može prestati na tri načina: prestankom mandata, razrešenjem i ostavkom direktora.

U zavisnosti od položaja i nadležnosti, direktore možemo podeliti na izvršne i neizvršne. Uloga izvršnih direktora je poslovođenje i zastupanje. Prvi pojam se odnosi na vođenje poslova unutar društva, dok se zastupanje odnosi na poslove izvan društva, tj. zaključivanje poslova s trećim licima. Društvo može imati, osim direktora, i zastupnike koji nisu direktori. S druge strane, funkcija direktora nije isključivo zastupanje društva, već i poslovođenje (Stefanović, 2013, str. 379 i 380). Društvo može izdvojiti sredstva za korišćenje profesionalnih saveta stručnjaka u odgovarajućoj oblasti, kako bi direktor ostvario pravo na tačno, potpuno i blagovremeno informisanje (Kodeks korporativnog upravljanja, princip 8). Informisanost i transparentnost su neophodan preduslov za obavljenje poslova prema principima korporativnog upravljanja OECD-a. Zakon predviđa da neizvršni direktori nadziru rad izvršnih direktora i predlažu poslovnu strategiju društva (čl. 390 ZPD-a). Za neizvršne direktore važi i specifično ograničenje, a to je da ne mogu biti zaposleni u privrednom društvu, niti članovi nadzornog odbora.

Značaj funkcionisanja ovog organa u privrednom društvu naročito je istaknut pojavom korporativnog upravljanja kao relativno nove pravne oblasti. Savremeno korporativno upravljanje karakterišu transparen-

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[4] „Sl. glasnik RS", br. 36/2011, 99/2011, 83/2014 – dr. zakon, 5/2015, 44/2018, 95/2018, 91/2019. i 109/2021.

tnost, dužnost lojalnosti i odgovornost uprave (Đurić, 2021, str. 193). Naime, direktori zbog svoje uloge u društvu često imaju mogućnost da preduzimaju radnje u svom interesu, zanemarujući interes privrednog društva. Suprotstavljeni interesi uprave i vlasnika vode tzv. agencijskom problemu.[5] Jedno od rešenja ovog problema predstavlja tržište menadžera (engl. *market for manageres*) na kome menadžeri u zavisnosti od uspeha mogu biti nagrađeni ili kažnjeni (Đorđević, 2004, str. 191 i 212). Pored toga, približavanje interesa vlasnika i uprave daje dobre rezultate jer su članovi uprave motivisaniji da doprinesu ostvarenju zajedničkih vrednosti, što se odražava na ekonomske parametre (Jones, Harrison, & Felps, 2018, str. 376).

3. Zakonska regulativa odgovornosti direktora u pravu Republike Srbije

Odgovornost direktora se u savremenoj pravnoj nauci posmatra s dva aspekta: kao pravna i društvena odgovornost (društveno odgovorno poslovanje).[6] Cilj ovog rada jeste analiza pravne odgovornosti direktora privrednog društva u pravu Republike Srbije s osvrtom na tendencije u uporednom pravu, pa ćemo u nastavku rada prikazati različite vrste pravne odgovornosti i njihove posledice.

3.1. Statusna odgovornost

Za članove upravnog odbora može se reći da se na izvestan način nalaze u podređenom položaju u odnosu na skupštinu društva. U jednodomnom sistemu uprave, direktor je odgovoran za svoj rad skupštini,

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[5] Agencijski problem se u teoriji definiše upravo kao sukob interesa agenta (članova upravnog odbora) i principala (akcionara ili članova) u tom smislu što principal angažuje agenta da radi u njegovom interesu, međutim, u samom procesu rada može doći do situacije da agent preduzima radnje i poslove u svom najboljem interesu, a na štetu principala.

[6] Kodeks korporativnog upravljanja u rečniku pojmova definiše društveno odgovorno poslovanje kao koncept po kome društva integrišu ekonomske, pravne, filantropske, društvene i ekološke teme i pitanja u svoje poslovne aktivnosti, kao i u interakciju s nosiocima interesa na dobrovoljnoj osnovi.

što se manifestuje pre svega u obavezi izveštavanja skupštine (čl. 399 ZPD-a). U dvodomnom sistemu upravljanja, članovi nadzornog odbora imaju dužnost izveštavanja skupštine. Statusna odgovornost može imati za posledicu razrešenje direktora i bez navođenja razloga (čl. 395 ZPD). Ukoliko se u sudskom postupku utvrdi postojanje povrede pravila o odobravanju poslova u kojima postoji lični interes lica iz člana 6. stav 1 tačka 4) ZPD-a, nadležni sud će izreći i meru privremenog ograničenja prava vršenja funkcije direktora u trajanju od 12 meseci. Iako se u ovom slučaju radi o tužbenom zahtevu za naknadu štete, izricanje privremene mere ima i statusnopravne elemente.

3.2. Imovinska odgovornost

S obzirom na to da odgovornost proizlazi iz dužnosti, pre svega treba identifikovati dužnosti direktora prema privrednom društvu. Iz odredaba navedenih u zakonu mogu se uočiti tri opšte dužnosti koje direktor ima prema društvu:

a) dužnost pažnje (*Duty of care*);

b) pravilo poslovne procene (*Business judgment rule*) i

c) dužnost lojalnosti (*Fiduciary Duties*).

d)

Zakon izričito propisuje dužnost pažnje zahtevajući pažnju dobrog privrednika uz obavezu primene stručnog znanja i iskustva ukoliko ih poseduje, a pravilo poslovne procene sadržano je u odredbama o zasnivanju poslovne procene na informacijama i mišljenjima lica koja su stručna za odgovarajuću oblast, za koja veruju da su u tom pogledu savesna i kompetentna. Direktor neće odgovarati za štetu ukoliko dokaže da je prilikom odlučivanja postupao savesno, pouzdavajući se u mišljenje stručnjaka, pri čemu nije imao razloga za sumnju (Stefanović, 2013, str. 398). Dužnost lojalnosti zahteva da članovi upravnog odbora vrše svoja ovlašćenja u interesu društva kao celine (Mihajlović, 2018, str. 2). Ne sme se dozvoliti da lični interesi preovladaju nad interesima društva (Međunarodna finansijska korporacija, 2011, str. 110). Po ovom osnovu, direktori su dužni da prijave postojanje ličnog interesa u određenom

pravnom poslu[7], da izbegavaju sukob interesa, čuvaju poslovnu tajnu i poštuju pravilo zabrane konkurencije. Po sadržini dispozicije slično ovim odredbama jeste i krivično delo zloupotreba poverenja u obavljanju privredne delatnosti (čl. 224a KZ-a). U slučaju prouzrokovanja štete, direktor odgovara privrednom društvu. Rok zastarelosti za podnošenje zahteva za naknadu štete iznosi tri godine od dana nastupanja štete.

3.2.1. Tužbe sa zahtevom za naknadu štete

Tužba zbog povrede dužnosti prema društvu može se podneti u roku od šest meseci od dana saznanja za učinjenu povredu (subjektivni rok), a najkasnije u roku od pet godina od dana učinjene povrede (objektivni rok). Podnosilac tužbe može biti:

- privredno društvo;
- član društva kome je prouzokovana šteta (individualna tužba) i
- član ili grupa članova društva koji u svoje ime a za račun društva podnose tužbu zbog prouzrokovanja štete (derivativna tužba).

Postupak pred sudom za naknadu štete mogu inicirati i drugi subjekti: zaposleni zbog nezakonitog otkaza ili drugih povreda ugovora o radu; lica van privrednog društva u slučaju povrede pravila iz oblasti poreskog prava, prava potrošača, prava konkurencije itd. Pored navedenog, direktori mogu biti pozvani na odgovornost povodom stečajnog postupka ili postupka preuzimanja privrednog društva, na kojima se nećemo zadržavati u ovom radu.

3.3. Krivičnopravna odgovornost

Propisivanje krivičnih dela u ovoj oblasti služi zaštiti osnovnih društvenih vrednosti kroz odgovornost koju direktor privrednog društva ima prema državi i društvu. Krivični zakonik u čl. 223–245 propisuje krivična dela usmerena protiv privrednog društva ili drugog lica. Dužnost lojalnosti koja u ZPD-u štiti privredno društvo, u Krivičnom

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[7] Čl. 66 pod nazivom „Odobrenje pravnog posla ili radnje u slučaju postojanja ličnog interesa" izmenjen je novim Zakonom o izmenama i dopunama ZPD-a.

zakoniku se javlja kroz propisana krivična dela kao što su zloupotreba poverenja, narušavanje poslovnog ugleda i kreditne sposobnosti, odavanje poslovne tajne i dr. Kada je reč o privrednom kriminalitetu, kao značajan problem ističu se poreska krivična dela za čije suzbijanje je potrebna dosledna primena odgovarajućih propisa, kao i institucionalna reforma koja bi trebalo da obuhvati unapređenje efikasnosti Poreske uprave i sudskog sistema (Dimić & Božić, 2020, str. 6). Uvidom u odredbe privrednog i krivičnog zakonodavstva, konstatujemo postojanje doslednosti u propisivanju dužnosti i zabrana koje su postavljene direktoru privrednog društva, iako su ovim propisima zaštićeni interesi različite prirode.

4. Savremene tendencije u oblasti odgovornosti direktora

Poslednjih decenija akcenat je stavljen na uspostavljanje dobre prakse korporativnog upravljanja čije središte zauzima upravo direktor kao organ upravljanja. Korporativno upravljanje omogućava društvu efikasno vođenje poslova i zaštitu vlasnika i drugih strana koje imaju legitimne interese u društvu (engl. *Stakeholders model*). Posledice pogrešnih odluka mogu dovesti do raznovrsnih troškova za privredno društvo (Carberry, Engelen, & Essen, 2018, str. 123). Pokriće u slučaju nastanka štete povodom aktivnosti direktora koji postupa savesno, može se obezbediti putem osiguranja od odgovornosti (engl. *D&O Insurance*), ali samo u slučaju obične nepažnje. Ciljna funkcija osiguranja od odgovornosti nadovezuje se na ciljnu funkciju režima odgovornosti (Vasiljević & Tomić, 2020, str. 31). Privredna društva mogu nadoknaditi troškove sudskog postupka ako je direktor postupao u dobroj veri, u skladu sa zakonom i u najboljem interesu društva (Međunarodna finansijska korporacija, 2011, str. 115). Iako osiguranje od odgovornosti omogućava kontrolu rizika poslovanja, neophodno je pronaći odgovarajuću meru zaštite direktora da bi se predupredio problem poznat kao moralni hazard (Parchomovsky & Siegelman, 2021, str.5).

Savremene tendencije u uređivanju ove oblasti kreću se ka proširenju obima dužnosti direktora. Evropski parlament u Rezoluciji o održivom razvoju iz 2020. godine naglašava važnost jačanja uloge direktora u ostvarivanju dugoročnih interesa i ističe potrebu za uspostavljanjem

ravnoteže između kratkoročnih i dugoročnih ciljeva, uzimajući u obzir principe održivog korporativnog upravljanja. Evropska komisija je 2020. godine objavila nameru o donošenju propisa koji uređuju dužnosti kompanija i direktora u pogledu ljudskih prava i zaštite životne sredine. Direktiva ima za cilj da obaveže kompanije i direktore da sprečavaju štetne uticaje poslovanja na ljudska prava i životnu sredinu (Allen & Overy LLP, 2022). Evropska komisija navodi da nepostojanje jedinstvenih nacionalnih pravila o dužnosti pažnje direktora usporava prihvatanje dobre prakse. Plan je da nakon usvajanja Predloga direktive od 23. februara 2022. godine (*Proposal for a Directive on corporate sustainability due diligence and annex)* države članice u roku od dve godine uvedu nova pravila i dostave izveštaj o tome Komisiji. (European Commission, Publication Office, 2020). Porast broja sudskih sporova protiv kompanija zbog njihovih aktivnosti koje krše ljudska prava od značaja je za dužnosti direktora. U Francuskoj, Nemačkoj, Holandiji i Velikoj Britaniji, vođeni su postupci protiv kompanija zbog negativnih uticaja na ljudska prava ili životnu sredinu (McCorquodale & Neely, 2021, str. 22). Kršenje dužnosti pažnje od strane direktora može dovesti do derivativnih tužbi, s obrazloženjem da je kompanija pretrpela štetu zbog njihovih propusta. U SAD je pokrenut sudski postupak povodom zanemarivanja dužnosti direktora da stvore okruženje u kojem nema kršenja ljudskih prava, što je dovelo do reforme u oblasti korporativnog upravljanja. (McCorquodale & Neely, 2021, str. 22). Važno je istaći da je u pogledu kršenja ljudskih prava u uporednom pravu moguće voditi i krivične postupke. Na primer, u Francuskoj su direktori jedne kompanije optuženi za saučesništvo u ratnim zločinima i zločinima protiv čovečnosti zbog postojanja komercijalnih sporazuma s islamskom oružanom grupom ISIS (Trial International, Geneva, 2022). Zatim, u Italiji je počelo suđenje protiv generalnog direktora jedne kompanije zbog krivičnog dela korupcije koje je navodno počinjeno u Nigeriji. Trenutni stav je da ne postoje propisi EU koji predviđaju odgovornost za direktore koji ne preduzmu mere u vezi s ljudskim pravima, iako postoji niz indicija u sudskoj praksi koje ostavljaju mogućnost odgovornosti direktora u određenim slučajevima (McCorquodale & Neely, 2021, str. 22).

Kretanja u ovoj oblasti su u nekoj meri rezultat globalizacije koja se ogleda u pokušajima harmonizacije i unifikacije pravila. Ovde je spor-

no pitanje celishodnosti, imajući u vidu da pravna regulativa odražava sistem vrednosti jednog društva. Društvene norme i stepen razvoja korporativne kulture moraju biti reflektovani kroz pravne norme. Sledstveno tome, selektivna implementacija odredaba stranih prava može voditi nedoslednosti u uređenju oblasti odgovornosti direktora. To znači da odredbe o odgovornosti direktora u privrednom statusnom pravu moraju biti u skladu s pravnim sistemom u celini kako ne bi bila narušena pravna sigurnost. Primer uvedenog pravnog transplanta koji nije korišćen u dovoljnoj meri da bi ispunio ciljeve implementacije jeste derivativna tužba. Procena uspeha ovog instituta obuhvata dva kriterijuma. Prvo, da li se pravni transplant primenjuje u praksi i drugo, da li funkcioniše u skladu s postavljenim ciljevima. Rezultati istraživanja daju negativan odgovor na oba ova pitanja (Mihailović, 2020, str. 298–299).[8] Ipak, postoje i situacije u kojima je kombinovanje modela upravljanja neminovnost, kao u slučaju povezanih društava i transnacionalnih kompanija kod kojih je pitanje kontrole i odgovornosti još složenije. Pravila koja se odnose na poslovanje i pravnu kontrolu, posmatraju se u širem međunarodnom i društvenom kontekstu, u kome isključiva rešenja jedne države nisu poželjna. Usklađivanje propisa između država u ovom slučaju doprinosi razvoju međunarodne trgovine i sprečava sukob jurisdikcija (Ljutić, 2013, str. 21).

5. **Zaključak**

Pod uticajem promena u pristupu poslovanju na svetskom nivou, menja se i položaj direktora, odnosno upravnog odbora u privrednom društvu. Nova rešenja, naročito ako su preuzeta iz uporednog prava, moraju biti precizirana, jasna i primenljiva. Od (ne)adekvatnih zakonskih rešenja umnogome zavisi ponašanje direktora, ali i uspeh u upravljanju kompanijom.

Na osnovu dostupnih informacija može se opaziti trend proširenja obima odgovornosti direktora. Njihove obaveze prema društvu i drugim subjektima određene su na nekoliko nivoa kroz poštovanje odredaba

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[8] Kao razlozi navode se nedovoljan obim sudske prakse u kojoj se derivativna tužba svodi na sporadične primere, neadekvatna informisanost i neprofesionalnost tužilaca u ovim postupcima. Videti: Mihailović, 2020, str. 298–299.

predviđenih zakonom, internim aktima privrednog društva i kodeksom korporativnog upravljanja (iako ima snagu preporuka). Proces pridruživanja Evropskoj uniji nameće potrebu za harmonizacijom s pravom EU, pa je neophodno osvrnuti se na tendencije koje su prisutne u ovom pravnom sistemu.

Novi Zakon o izmenama i dopunama Zakona o privrednim društvima iz 2021. godine, u kontekstu odgovornosti direktora, uvodi izmene u vezi s dužnošću prijavljivanja poslova i radnji u kojima postoji lični interes. Ova obaveza, osim preciziranja pojedinih odredaba (npr. propisivanje sadržine obaveštenja), suštinski ostaje nepromenjena. Naposletku, možemo zaključiti da u pravu Republike Srbije ima prostora za usvajanje novih rešenja u ovoj oblasti i ispravljanje nedoslednosti.

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DIRECTORS' LIABILITIES IN SERBIAN LEGISLATION

Abstract: This paper examines corporate directors liabilities and the consequences of different types of liability. In the theoretical framework we will discuss the basic principles of modern corporate governance. The rules of conduct are examined and correlated using normative, dogmatic and sociological methods, since positive laws reflect social values. The legislation in this area will be discussed, touching upon all aspects of legal liability. The aim is to give a comprehensive overview of the rights, duties and liabilities of corporate executives in Serbian law, referencing global contemporary trends. Comparative legal analysis will show the advantages and disadvantages of different solutions and the applicability of certain institutes in Serbian legislation

1. Introductory remarks

Directors, i.e., the board of directors participates in corporate management bodies, which means that they are in charge of managing corporate operations and represent enterprises in relations with third parties. Their rights and obligations are determined by law and corporate acts (primarily the bylaws). When taking legal actions and drafting legislation, they rely on their expertise, experience, and conscience. The legislation contains rules of conduct which are binding so that managers can be called to account in case of non-compliance. The paper

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will discuss consequences of bad management and highlight the potential protection mechanisms for both executives and corporations, with the emphasis on proper legislation as the safeguard against any loss for all interested parties. Primary stakeholders in the business are owners, management, clients, employees, and regulatory bodies. The secondary interest group consists of creditors, various interest groups, the environment, etc. (Peart & Knowles, 2018, p. 89). In modern theory and practice, the notion that there is a multidimensional purpose to a business has become increasingly common. Beyond the members' interests, there are societal interests that must not be neglected (Radović, 2021, p. 2). Since the turn of the 21st century, we have witnessed more and more instances of corporations behaving unethically in relation to social and environmental issues.[2] This gave rise to the need to harmonize corporate governance and socially responsible business. On the other hand, some scholars believe that taking ethical issues into consideration can have adverse effects on business operations (Zaman, Jain, Samara & Jamali, 2020, pp. 3, 10). Milton Friedman, the author of the Friedman doctrine, used the term social responsibility, questioning the notion that executives have social responsibility. If they do, it means that their actions need not always be in the interests of shareholders (Radović, 2021, p. 39). In some legal systems, a corporation has the nature of a contract, which defies the concept of its social responsibility: if a corporation is merely a contract between an agent (the manager) and a principal (the owner), then the only contractual obligation the manager has is to maximize the owner's wealth (Vasiljević, 2021, p. 54).

Adequate legislation should stimulate executives to work in the corporation's best interest, while adhering to the principles of socially responsible business. In order to achieve this, it is necessary to provide incentives to the management and establish effective control mechanisms. One of the best control mechanisms is the open market, which

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[2] For instance, the 2010 Gulf of Mexico oil spill or the Volkswagen emissions scandal, when the United States Environmental Protection Agency (EPA) issued a notice of violation of the Clean Air Act to German automaker Volkswagen Group. See Rashid Zaman, Tanusree Jain, Georges Samara, Dima Jamali, Corporate governance meets social responsibility: Mapping the interface, Business & Society, 61(3), 690–752, 2020.

will drive executives to be as productive as possible in order to avoid being replaced (Jovanović Zattila, 2016, p. 190).

2. Status and Office of the Director in a Company

According to the Companies Act[3] ("the Act"), a company or corporation has one or more directors or executives appointed by the company's assembly. The director's term of office is stipulated in the company's bylaws, the term limit being four years. The director's term can end by termination, dismissal or resignation.

Depending on their position and authority, a manager's office can be of an executive or non-executive variety. The CEO is charged with corporate management and representation. The former refers to internal operations, while representation refers to business outside the company, i.e., concluding deals with third parties. The company may also have representatives who are not directors. On the other hand, directors are not concerned exclusively with the representation of the company, but also with its management (Stefanović, 2013, pp. 379 and 380). The company can set aside funds for the use of professional advice from experts in the relevant field, so that the director may have access to accurate, complete and timely information (Corporate Governance Code, Principle 8). Disclosure and transparency are a prerequisite for conducting business according to the OECD Principles of Corporate Governance. The Act states that non-executive directors supervise the work of executive directors and propose the company's business strategy (Article 390). Non-executive directors must not be company employees or members of the supervisory board.

The role of the supervisory board has become especially prominent with the emergence of corporate governance as a new area of law. Modern corporate governance is defined by transparency, duty of loyalty and management accountability (Đurić, 2021, p. 193). Owing to their office, managers often have the opportunity to act in their own interest, while ignoring the company's interests. The conflicting interests of

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[3] Official Gazette of the Republic of Serbia, no. 36/2011, 99/2011, 83/2014 – other law, 5/2015, 44/2018, 95/2018, 91/2019. and 109/2021.

the management and the owners or stockholders lead to the so-called agency problem.[4] One of the solutions to this problem is the market for managers, where managers can be rewarded or punished depending on their success (Đorđević, 2004, pp. 191 and 212). Through proper incentives, both the shareholders' and the CEO's interests can be aligned, and managers can thus be motivated to act in the shareholders' best interests (Jones, Harrison & Phelps, 2018, p. 376).

3. Directors' Liabilities in Serbian Legislation

The director's accountability has two aspects: legal liability and social responsibility (socially responsible business).[5] The aim of this paper is to examine the legal liability of company executives in the Serbian law and view this phenomenon in the context of comparative law. The following sections will discuss different types of legal liability and their consequences.

3.1. Status liability

The board of directors is in a somewhat subordinate position in relation to the company's assembly. Under the governance of a one-tiered board, directors are accountable for strategy, service and control, and are expected to report to the assembly (Article 399). In a two-tiered system, strategy and service are executed by the management board while the control is handled by the supervisory board. Status responsibility can mean that directors can be dismissed by the assembly without

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[4] An agency problem is a conflict of interest inherent in any relationship where one party is expected to act in the best interest of another. The manager, acting as the agent for the shareholders, or principals, is supposed to make decisions that will maximize shareholder wealth even though it is in the manager's best interest to maximize their own wealth. Agency problems arise when incentives or motivations present themselves to an agent to not act in the full best interest of a principal.

[5] Corporate Governance Code defines corporate social responsibility as a business model which integrates economic, philantropic, social and environmental topics. Companies make a concerted effort to operate in ways that enhance rather than degrade society and the environment.

giving reasons (Article 395). In case of a lawsuit, if the court decides that there is a violation of the rules on approving business transactions which involve a personal interest of a person or persons (Article 6, paragraph 1, point 4 of the Act), the competent court will impose a temporary one-year ban for the person or persons to hold a director's office. Even though it is a case of damages claim, the imposition of a temporary measure also has status and legal elements.

3.2. Property liability

Given that liabilities arise from duties, we will first discuss the director's duties towards the company. Legal provisions stipulate three universal duties of a director:

a) Duty of care

b) Business judgment

c) Duty of loyalty (Fiduciary duties).

The law explicitly prescribes the duty of care, stating that a good manager is required to use their expertise and experience for the company's benefit. The rule of business judgement assumes that, unless proved otherwise, management is acting in the interests of the corporation and its stakeholders and makes business decisions based on the information and opinions of experts in the relevant field, which they believe are conscientious and competent. The rule assumes that it is unreasonable to expect managers to make optimal decisions all the time. Managers will not be held accountable for losses if they prove that they acted rationally when making decisions and relied on the opinion of experts (Stefanović, 2013, p. 398). The duty of loyalty requires directors to put the interests of the corporation and over their own self-interest or the interests of others (Mihajlović, 2018, p. 2). Personal interests must not be allowed to prevail over the company's interests (International Finance Corporation, 2011, p. 110). Therefore, managers are required to report any real or perceived personal interest in a legal transaction or action[6], to avoid

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[6] Article 66 entitled "Approval of a Legal Transaction or Action in Case of Existence of Personal Interest" was ammended in the latest ammendments on the

conflict of interest, to keep business secrets and to respect the rule of non-competition. Content-wise, these provisions are similar to abuse of trust in business transactions (Art. 224a of the Criminal Code). In case of damage, the director is accountable to the company. The statute of limitations for submitting a damages claim is three years from the day the damage occurred.

3.2.1. Claims for damages

A claim for breach of duty to the company can be filed within six months from the day of knowledge of the breach (subjective deadline), and no later than five years from the date of the breach (objective deadline). The plaintiff can be:

• a corporation

• a stakeholder who suffered damage (individual lawsuit)

• a stakeholder or group of stakeholders who file a lawsuit for causing damage on behalf of the corporation (derivative lawsuit).

Lawsuit for damages may be initiated by other entities: employees due to illegal dismissal or other violations of the employment contract; persons outside the company in case of violation of rules in the field of tax law, consumer rights, competition law, etc. In addition to the above, directors may be held accountable in connection with bankruptcy proceedings or takeover proceedings, which fall outside the scope of this paper.

3.3. Criminal liability

The purpose of stipulating criminal offenses in this area is to uphold the fundamental social values by stressing managers' duties towards the corporation and the state. The Criminal Code in Art. 223-245 specifies criminal offences committed against a corporation or other entities. In the Companies Act, the duty of loyalty has a purpose to protect the corporation. In the Criminal Code, it is implicitly present in various

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Companies Act.

criminal offences such as abuse of trust, damage to business reputation and creditworthiness, disclosure of business secrets, etc. In the field of business crime, tax evasion and tax frauds present a serious problem. Combatting tax fraud requires consistent use of laws and regulations, as well as institutional reform, including the Tax Administration and the judicial system of Serbia (Dimić & Božić, 2020, p. 6). Examining the commercial and criminal legislation of Serbia, we can conclude that the duties and prohibitions of directors are laid down consistently, even though these regulations protect the interests of various entities.

4. Directors' Liabilities and Corporate Governance: Recent Developments

In recent decades, establishing good corporate governance practices has become a priority. Good corporate governance largely depends on the board of directors who manage the corporation. Corporate governance enables the company to conduct business efficiently and protect owners and other parties that have legitimate interests in the company (the Stakeholders Model). Making wrong decisions can result in all sorts of costs for the company (Carberry, Engelen, & Essen, 2018, p. 123). Directors and officers (D&O) liability insurance is insurance coverage intended to cover damages incurred by the actions of a director acting in good faith, but only in the case of negligence. The purpose of liability insurance is linked to the purpose of the liability regime (Vasiljević & Tomić, 2020, p. 31). Liability insurance can also cover the legal fees and other costs the organization may incur as a result of a lawsuit if the director acted in good faith, in accordance with the law and in the best interest of the company (International Finance Corporation, 2011, p. 115). Liability insurance protects directors and officers acting in good faith; however, this protection must be applied rationally, so that the problem of moral hazard does not arise (Parchomovsky & Siegelman, 2021, p.5).

Contemporary legislation related to corporate governance tends to expand the scope of duties of directors and officers. In the 2020 Resolution on Sustainable Development, the European Parliament stresses the importance of strengthening the role of directors in achieving long-

term interests and the need to establish a balance between short-term and long-term goals, taking into account the principles of sustainable corporate governance. In 2020, the European Commission announced the intention to impose a general duty on the business community to address adverse human rights and environmental impacts, rather than providing general governance rules (Allen & Overy LLP, 2022). The European Commission states that the absence of uniform national rules on directors' duty of care slows down the adoption of good practice. Upon ratifying the Proposed Directive (Proposed Directive on Corporate Sustainability Due Diligence and Annex) issued on February 23, 2022, the member states will introduce new rules within two years and report to the Commission. (European Commission, Publication Office, 2020). The increase in litigation against companies for their activities that violate human rights is of relevance to directors' duties. There have been cases brought in France, Germany, the Netherlands and the UK against companies, often for actions where there have been human rights or environmental impacts (McCorquodale & Neely, 2021, p. 22). Breach of due diligence by directors can lead to derivative claims, on the grounds that the company has suffered damage due to their negligence. In the US, an action was brought against a company's directors for breach of director's duty to create an environment which respects human rights. This lawsuit ultimately led to reforms in the field of corporate governance (McCorquodale & Neely, 2021, p. 22). Lawsuits against directors for human rights abuses can include criminal charges. For example, in France, the directors of a corporation have been charged with complicity in war crimes and crimes against humanity due to their actions in signing commercial agreements with the Islamic armed group (ISIS) in Syria (Trial International, Geneva, 2022). A trial has commenced in Italy against a CEO for international corruption allegedly committed in Nigeria. We can conclude that these situations of liability are not recognised by the EU regulations at the moment, although judicial practice indicaters that directors should be aware of the potential adverse consequences of ignoring human rights risks when considering the best interests of the company (McCorquodale & Neely, 2021, p. 22).

Recent changes in corporate governance regulations are to some extent the result of the globalization process, which includes harmo-

nisation and unification across jurisdictions. However, the purpose of these changes remains questionable. Any legislation by necessity reflects social values and the degree of development of corporate culture. Consequently, the selective implementation of international legislation may lead to inconsistencies in the regulation of the director's duties and liabilities. The provisions on the liability of directors in company law must be in accordance with the legal system as a whole so that legal certainty is preserved. For example, a derivative claim is a legal transplant which has not been adequately implemented yet. The effectiveness of a derivative action is evaluated based on two criteria: (1) practical application and (2) results or outcomes of such actions. Research has shown that the derivative action is ineffective on both accounts (Mihailović, 2020, pp. 298–299). However, sometimes combining management models is inevitable, as in the case of affiliated and transnational companies where the issues of control and liability become even more complex. Company law and legislation must be seen in a broader international and social context, not from the viewpoint of only one jurisdiction or national legislation. The general harmonization of regulations between states boosts international trade and prevents conflict of jurisdictions (Ljutić, 2013, p. 21).

5. Conclusion

Due to the changes in corporate governance on the global level, the position of the company's director or board of directors is also changing. Newly introduced provisions, especially if they are taken from comparative law, must be precise and applicable. Both directors' behaviour and company's success are largely the outcomes of (in)adequate legislation.

In recent years, there has been a tendency of expanding the scope of directors' duties. Their duties towards the company and other entities must be compliant with the law, the company bylaws, and the corporate governance code (although it has the force of recommendations). The EU accession process includes the harmonization with the EU law, so the developments in the EU jurisdiction and legislation must be taken into consideration.

The 2021 Amendments to the Companies Act revised the concept of directors' liability, specifically the director's duty to report affairs and actions in which there is a personal interest. This duty, apart from specifying certain provisions (e.g., prescribing the content of the notification), essentially remains unchanged. In the end, we can conclude that there is room in Serbian legislation would benefit from adopting new acts and correcting inconsistencies in this area.

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KURSEVI ANGLO-AMERIČKE KNJIŽEVNOSTI NA TERCIJARNOM OBRAZOVNOM NIVOU U SRBIJI PO IZBIJANJU PANDEMIJE KOVID-19

Sažetak: Cilj ovog rada je da utvrdi kvalitet i prirodu onlajn kurseva anglo-američke književnosti na tercijarnom obrazovnom nivou u Srbiji. Posebna pažnja biće posvećena ad hok rešenjima u vezi sa sprovođenjem i osmišljavanjem ovih kurseva, imajući u vidu da nije zabeleženo izvođenje onlajn književnih kurseva pre izbijanja pandemije Kovid-19. Ovo pilot-istraživanje oslanja se, pre svega, na kvantitativni metod analize korpusa, koji obuhvata upitnik s deset pitanja zatvorenog tipa prosleđen ciljnoj grupi od 35 profesora anglo-američke književnosti na nekoliko državnih i privatnih fakulteta širom Srbije. Njihovi odgovori su analizirani i svrstani u četiri kategorije, na osnovu zajedničkog imenitelja, a to su: način organizacije književnog kursa u onlajn obrazovnom okruženju (1), interakcija između nastavnika i studenta (2), izazovi u podučavanju književnosti onlajn (3) i upotreba onlajn obrazovnih alata u nastavi (4).

Ključne reči: nastava na daljinu, podučavanje književnosti, onlajn književni kursevi, izazovi podučavanja književnosti onlajn, onlajn alati.

1. Uvod

U 21. veku digitalna pismenost je podjednako važna i za nastavnike i za studente, a sposobnost pravilnog korišćenja informaciono-komunikacionih tehnologija (IKT) u procesu prenošenja i sticanja teorijskih i

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praktičnih znanja krajnji je cilj svih nastavnih predmeta iz oblasti humanističkih nauka. Savremena nastava stranih jezika veoma je otvorena ka integraciji najnovijih tehnologija budući da je po svojoj prirodi interdisciplinarna i otvorena za novine koje potiču iz različitih naučnih oblasti. Po izbijanju pandemije Kovid-19, od nastavnika engleskog jezika očekivalo se da stvore tehnološki orijentisano okruženje koje će unaprediti učenje engleskog jezika kroz aktivaciju produktivnih i receptivnih veština, da ovladaju radom na onlajn platformama u kratkom vremenskom periodu, da svoje kurseve, koji su se dotad odvijali u učionici (engl. *face-to-face*) digitalizuju i da budu u toku sa najnovijim trendovima u domenu IKT-a.

Podučavanje književnosti onlajn još je zahtevnije ako se posmatra u svetlu prilagođavanja najnovijim događajima u svetu IKT-a, budući da je prilično zahtevno premostiti jaz između tehnologije, koja se vezuje za dehumanizaciju čovečanstva, i ljubavi prema pisanoj/izgovorenoj reči kao delu umetničkog izraza. Stoga, proces identifikacije, istraživanja i tumačenja ljudskih vrednosti u virtuelnom okruženju za učenje (engl. *Virtual Learning Environmet* – VLE) postaje izazov sam po sebi koji se postavlja pred nastavnike engleskog jezika koji se bave podučavanjem književnosti u digitalno doba (Škobo & Đerić-Dragičević, 2019, str. 84). Po izbijanju pandemije, ovaj izazov postaje još izraženiji za nastavnike anglo-američke književnosti u Srbiji, gde su preovladavali tradicionalani pristupi podučavanja književnosti i gde onlajn kursevi književnosti ranije nisu postojali. Tako je ovaj nagli prelazak na virtuelno okruženje za učenje ukazao na značaj digitalne pismenosti nastavnika i potrebu za redefinisanjem metodike nastave književnosti.

2. Učenje na daljinu i onlajn književni kursevi u Srbiji

Na osnovu sprovedenog istraživanja u oblasti učenja na daljinu u visokom obrazovanju u Srbiji, postojalo je samo nekoliko odseka koji su u svoje studijske programe uvrstili učenje na daljinu. Ukupno sedamnaest akreditovanih studijskih programa na daljinu na fakultetima i šest akreditovanih studijskih programa na daljinu na visokim školama strukovnih studija u Srbiji bilo je 2013. godine (Matijašević-Obradović i Jokić, 2014, str. 155). Prema poslednjim podacima Nacionalnog tela za akreditaciju i obezbeđenje kvaliteta u visokom obrazovanju (2021), u Srbiji

ne postoje akreditovani studijski programi za učenje na daljinu iz oblasti humanističkih nauka. Uočen je i nedostatak obuke u pogledu metodologije nastave na kursevima učenja na daljinu (Škobo & Sentov, 2020, str. 394). Demotivacija nastavnika i veliki obim posla identifikovani su kao glavne prepreke u učenju na daljinu (Đukić-Mirzayantz, 2017, str. 45).

Odlučujuću ulogu u razvoju sistema učenja na daljinu u Srbiji imala je Akademska mreža Republike Srbije (AMRES), koja je 2007. godine pokrenula projekat sa ciljem uvođenja koncepta elektronskog obrazovanja na mnogim fakultetima širom zemlje. Među fakultetima koji su se pridružili ovom projektu koji je podrazumevao korišćenje platforme *Moodle*, besplatnog sistema otvorenog koda za upravljanja učenjem, bili su i Filozofski fakultet i Filološki fakultet u Beogradu (Milićević, Milićević i Milić, 2014, str. 80). Međutim, postoji relativno mali broj istraživača iz društvenih i humanističkih nauka koji su se bavili izazovima kreiranja i implementacije onlajn kurseva stranih jezika pre pandemije (Trajanović, Domazet i Mišić-Ilić, 2007; Vukotić & Tanasijević, 2012; Đorđević & Radić-Bojanić, 2014; Tanasijević &Vukotić, 2014; Đukić-Mirzayantz, 2017). Broj istraživanja je drastično manji kada se radi o izazovima sprovođenja i organizovanja onlajn književnih kurseva na departmanima za engleski jezik na tercijarnom obrazovnom nivou u Srbiji (Škobo & Sentov, 2020; Škobo, 2021). Kako u Srbiji pre pandemije nije ponuđen model onlajn književnog kursa koji bi služio kao smernica nastavnicima u planiranju i realizaciji kurseva, od velike je važnosti ispitati kako su nastavnici književnosti uspeli da se izbore s vanrednom situacijom i postave osnov za dalje istraživanje u vezi sa sprovođenjem i organizacijom onlajn književnih kurseva.

2.1. **Podučavanje anglo-američke književnosti u digitalno doba**

Podučavanje anglo-američke književnosti u 21. veku podrazumeva korišćenje interdisciplinarnog pristupa koji kombinuje tradicionalno podučavanje jezika s inovativnim metodologijama podučavanja, kao što je upotreba onlajn obrazovnih alata (Nikolić & Dabić, 2016, str. 318; Škobo 2020; Škobo & Sentov, 2020), audio-vizuelnih uređaja (Nikolić, 2017) i društvenih mreža (Jonson, 2016; Parott, 2016; Rodrigo, 2016; Škobo, 2020). Korišćenje novih oblika medijskih sadržaja u poduča-

vanju književnosti utiče na način na koji čitamo i razumemo književna dela napisana pre digitalnog doba (Scholes, 2010; Cushman, 2011; Škobo & Dragičević-Đerić, 2019) i podstiče studente na samoizražavanje, kreativnost i kritičko mišljenje.

Mnogi istraživači su primetili da književnost razvija veštine kritičkog mišljenja i aktivira kreativnost (Yaqoob, 2011; Alvarez, Calvete, & Sarasa, 2021; Bobkina i Stefanova, 2016; Stefanova, Bobkina i Perez, 2017). Kako su veštine kritičkog mišljenja krucijalne za tumačenje književnih dela, a čitanje književnih dela podstiče razvoj veština kritičkog mišljenja, od nastavnika književnosti se iziskuje da nađu odgovarajući način da se te veštine primene i savladaju u onlajn okruženju. Kroz obe vrste kurseva, kako tradicionalne (u učionici/na fakultetu) tako i kroz onlajn književne kurseve, kritičko razmišljanje može se unaprediti korišćenjem multimedijalnih sadržaja u obliku digitalnog pripovedanja (Ohler, 2008; Hartley & McWilliam, 2009; Robin & McNeil, 2012; Brenner, 2014; Robin, 2016; Ibarra-Rius & Ballester-Roca, 2019), blogova (Reimer, 2016; Giralt & Murray, 2019) i trejlera za knjigu (Tabanero & Calvo, 2016). Jezičke platforme i forumske diskusije takođe predstavljaju efikasna sredstva za razvijanje kritičkih veština i predstavljanje i tumačenje sadržaja književnih dela, te se mogu uspešno koristiti u onlajn književem kursevima (Škobo, 2020, str. 6; Škobo & Sentov, 2020). Prema tome, nastavnikov nivo upotrebe onlajn alata ne utiče samo na kvalitet kreiranog/prezentovanog sadržaja, već i poboljšava interakciju između nastavnika i studenata u virtuelnom okruženju za učenje.

3. Opis metodologije

Cilj ovog istraživanja je bio da se utvrde priroda i kvalitet onlajn kurseva anglo-američke književnosti na tercijarnom obrazovnom nivou u Srbiji u toku letnjeg semestra akademske 2019/2020. godine po izbijanju pandemije koronavirusa. Nastavnicima književnosti je putem elektronske pošte prosleđen upitnik (www.surveymonkey.com) sastavljen od deset pitanja zatvorenog tipa. Među njima je bilo osam pitanja sa opcijom „Drugo, molimo navedite" i tri pitanja sa mogućnošću višestrukog izbora. Grupu ispitanika sačinjavalo je ukupno 35 nastavnika anglo-američke književnosti sa katedri za engleski jezik na tri državna

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3.1. Prikaz rezultata

3.1.1. Organizacija onlajn književnih kurseva

Prvih pet pitanja tiču se sprovođenja i organizovanja onlajn književnih kurseva anglo-američke književnosti. Pitanje broj 1 se odnosi na najčešće upotrebljavanu vrstu platforme za održavanje onlajn nastave; radi se o pitanju zatvorenog tipa sa mogućnošću izbora više od jednog odgovora i opcijom „Drugo, molimo navedite". Rezultati su predstavljeni grafički (*Grafikon 1*).

Grafikon 1. Najčešće upotrebljavane platforme u onlajn nastavi iz kurseva anglo-američke književnosti.
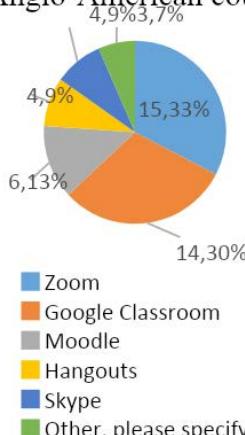
Kao što se može videti u *Grafikonu 1*, analiza rezultata pokazala je da je tokom letnjeg semestra akademske 2019/2020. godine 32,61% (15) ispitanika za održavanje onlajn kurseva iz književnosti koristilo softver za veb-konferencije – *Zoom*. U vreme kada je korišćen, *Zoom* je predstavljao odgovarajuću ad hok alternativu tehnološki složenijem sistemu za upravljanje učenjem (engl. *Learning Management System* – *LMS*) prikladnom za učenje na daljinu. Budući da su nastavnici mogli da predaju, dele beleške i prezentacije, a studenti da se jave za reč virtuelnim podizanjem ruke, predavanja preko *Zoom* aplikacije donekle su podsećala na tradicionalnu nastavu na fakultetu. Platformu *Google Classroom* – najčešće upotrebljavani sistem za upravljanje učenjem koji podseća na virtuelnu učionicu, koristilo je 30,43% (14) ispitanika. Međutim, platforma *Google Classroom* funkcionisala, je u to vreme, kao asinhroni sistem. Nastavnici i studenti su mogli jedni druge da čuju i vide u stvarnom vremenu tek nakon integracije ove platforme s aplikacijom *Google Meet* i drugim aplikacijama za onlajn sastanke (studenti su informacije o predavanjima dobijali preko saopštenja na platformi *Google Classroom*).

Platforma *Moodle* ima integrisan softver *Big Blue Button* koji omogućava prenos slike i zvuka u stvarnom vremenu i dozvoljava studentima pristup virtuelnoj učionici s uključenim kamerama. Ovu platformu je u anketi odabralo 13,04% (6) ispitanika, što *Moodle* čini drugim najčešće korišćenim sistemom za upravljanje učenjem na univerzitetima obuhvaćenim ovim istraživanjem. Rezultati takođe pokazuju da se podjednak broj nastavnika – 8,70% (4), odlučio za *Skype* i *Google Hangouts* kao finansijski pristupačna softverska rešenja za održavanje veb-konferencija. Slično platformi *Zoom*, platforme *Skype* i *Google Hangouts* omogućuju održavanje video i audio konferencija, deljenje ekrana, razmenu poruka u stvarnom vremenu, deljenje i pohranjivanje dokumenata i obe platforme imaju obezbeđenu tehničku podršku. Sve pomenute platforme mogu se koristiti i za rad „jedan na jedan" kada su i nastavnikova i studentova kamera uključene. Na ovaj način se pojačava intenzivnost nastave i studentu pruža podrška, što učenje čini manje personalizovanim a više individualizovanim. Za druge platforme i aplikacije (*iTeacher, Leftor*), opredelilo se 6,52% (3) ispitanika. Iako društvene mreže i aplikacije (*Facebook, Viber*) mogu poslužiti kao održiv dodatak nastavi

u virtuelnom okruženju za učenje (eng. *Virtual learning environment –
VLE*), one se ipak nisu koristile za izvođenje nastave iz književnosti u
ovakvoj sredini (v. Škobo 2020).

Pitanje broj 2 odnosi se na zadovoljstvo nastavnika tehničkim re-
šenjima za izvođenje onlajn nastave iz književnosti ,a rezultati su pred-
stavljeni u Grafikonu 2. Pitanje broj 3 odnosi se na moć nastavnika da
kvalitet nastave u virtuelnom okruženju za učenje održe na nivou koji je
prisutan kod tradicionalnih predavanja u učionici (*Grafikon 3*).

*Grafikon 2. Zadovoljstvo nastavnika tehničkim rešenjima za izvođenje
onlajn nastave iz književnosti.*
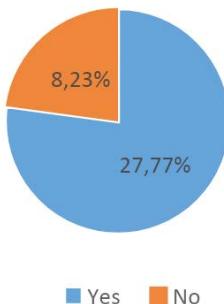
Grafikon 3. Održavanje kvaliteta sadržaja predavanja u virtuelnom okruženju za učenje na istom nivou kao kod nastave uživo.
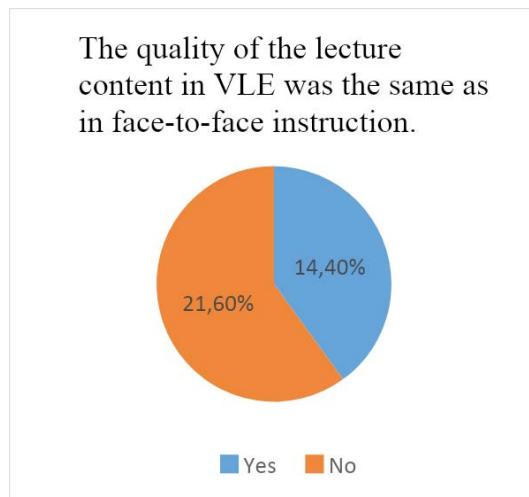
Analizom rezultata u vezi sa zadovoljstvom nastavnika tehničkim rešenjem za izvođenje onlajn nastave iz književnosti, ustanovljeno je da je 77,14% (27) ispitanika dalo pozitivan odgovor, dok je 22,86% (8) odgovorilo negativno (*Grafikon 2*). Kada je reč o kvalitetu sadržaja onlajn nastave, iz rezultata se može videti da je više od polovine ispitanika (60%) označilo da nije bilo u stanju da održi kvalitet onlajn nastave na istom nivou kao kod nastave uživo, dok je ostatak ispitanika (40%) iskazao suprotno (*Grafikon 3*). Dalja analiza negativnih odgovora ukazala je na sledeće razloge za ovakav ishod: odsustvo neverbalnog kontakta, slaba interakcija kako između nastavnika i studenata, tako i među samim studentima, odsustvo motivacionih faktora i nemogućnost adekvatnog praćenja usvajanja znanja kod studenata.

Pitanje broj 4 odnosi se na to da li je izvođenje onlajn nastave negativno uticalo na broj studenata na predavanjima (*Grafikon 4*), dok je u pitanju 5 fokus bio na tome da li su nastavnici književnosti mogli uspešno da ocene angažovanje studenata (*Grafikon 5*).

*Grafikon 4. Negativno dejstvo prenosa književnog kursa u onlajn sredinu
na prisustvo na predavanjima.*

Conducting an online literature
course has negatively affected
the number of students attending
the lessons.

15,43%   20,57%

■ Yes ■ No
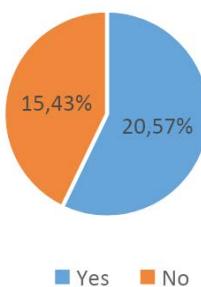
Grafikon 5. Sposobnost nastavnika da adekvatno ocene uspeh studenata.

Teachers were able to properly
evaluate students' performance.

8,23%

27,77%

■ Yes ■ No
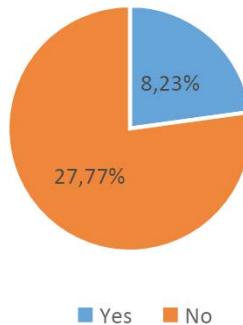
Kada je reč o prisustvu na predavanjima, rezultati pokazuju da je
57,14% (20) ispitanika naznačilo da je došlo do pada u broju studenata
na predavanjima, dok je 42,86% (15) odabralo suprotnu opciju. Imajući u
vidu da prilagođavanje tradicionalnih materijala onlajn sredini i stvaranje
interaktivnih onlajn sadržaja čine predavanja zanimljivijim, može se reći
da je pad u prisustvu na predavanjima povezan sa kvalitetom obrazov-

nog sadržaja i interakcijom između nastavnika i studenata. Kada je reč o sposobnosti nastavnika da adekvatno oceni uspeh studenanta, rezultati su pokazali da je 77,14% (27) ispitanika izabralo negativan odgovor, dok je ostalih 22,86% (8) odgovorilo pozitivno (*Grafikon 5*). Ovi rezultati ukazuju na činjenicu da adekvatna procena znanja studenata zavisi od njihovog prisustva i učestvovanja u nastavi. Međutim, ovu procenu je mnogo teže izvršiti kada studenti ne prate predavanja u živom prenosu, dok u isto vreme redovno šalju domaće zadatke, jer je teško ustanoviti da li su te zadatke uradili sami ili su se uzdali u druga pomoćna sredstva.

3.1.2. Interakcija između nastavnika i studenata u virtuelnom okruženju za učenje

Pitanja 6 i 7 u vezi su sa prirodom interakcije između nastavnika i studenata u virtuelnom okruženju za učenje. Pitanje 6, koje se odnosi na zadovoljstvo nastavnika nivoom onlajn interakcije sa studentima, zatvorenog je tipa, s opcijom da se pojasne razlozi za negativan odgovor (*Grafikon 6*). Pitanje 7 se odnosi na metode uspostavljanja interakcije između nastavnika i studenata u virtuelnom obrazovnom okruženju (*Grafikon 7*).

Grafikon 6. Zadovoljstvo nastavnika nivoom onlajn interakcije sa studentima u virtuelnom obrazovnom okruženju.
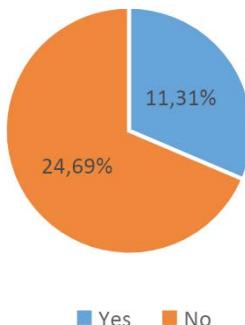
*Grafikon 7. Metode uspostavljanja interakcije između nastavnika i stu-
denata u virtuelnom obrazovnom okruženju.*
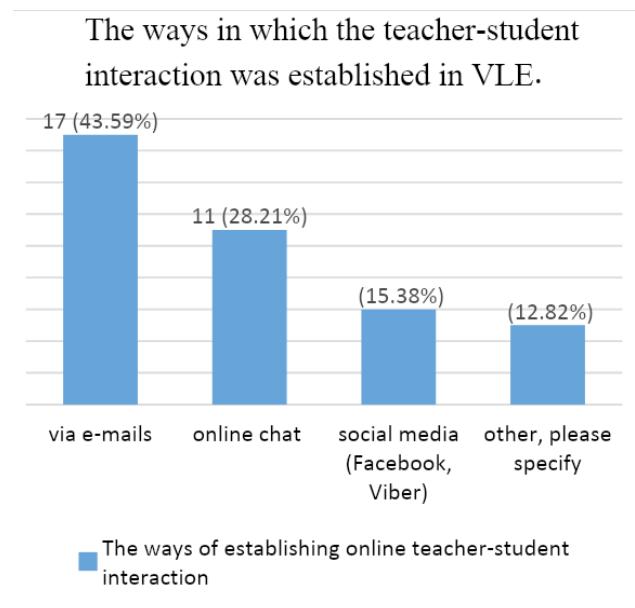
Pokazalo se da interakcija između nastavnika i studenata pred-
stavlja značajan problem. Dobijeni rezultati su pokazali da je više od
polovine nastavnika (68,57%) izrazilo nezadovoljstvo interakcijom sa
studentima u virtuelnom okruženju za učenje, dok je 31,43% (11) njih
bilo zadovoljno. Rezultati su prikazani na *Grafikonu 6*. Daljom analzom
odgovora došlo se do sledećih razloga za nezadovoljstvo stepenom in-
terakcije: nemogućnost adekvatnog praćenja prisustva i učestvovanja u
nastavi (studenti su često samo simulirali da su prisutni ili su izbegavali
časove), ograničenja vezana za onlajn platforme (tj. nemogućnost rada
u parovima i grupama) i problemi sa motivacijom koji su proizlazili iz
slabe interakcije između nastavnika i studenata.

Kada su u pitanju metode uspostavljanja interakcije između na-
stavnika i studenata tokom navedenog perioda, rezultati pokazuju da
je interakcija bila većinski asinhrona, budući da je 43,59% (17) ispita-
nika koristilo elektronsku poštu. Druge metode su uključivale onlajn

„pričaonice“, koje je koristilo 28,21% (11) ispitanika, i društvene mreže i aplikacije, koje je koristilo 15,38% (6) ispitanika; 12.82% (5) anketiranih opredelilo se za opciju „Drugo“ (*Grafikon 7*). Dalja analiza rezultata ukazala je da su ispitanici koji su u anketi odabrali opciju „Drugo“ koristili sinhronu komponentu takozvanog sastanka u stvarnom vremenu koja je integrisana u neke onlajn platforme (tj. *The Big Blue Button* komponenta koja je integrisana u platformu *Moodle* ili *Google Meet* i *Zoom* komponente integrisane u platformu *Google Classroom*).

3.1.3. Izazovi pri izvođenju onlajn nastave iz književnih kurseva

Pitanje broj 8 odnosi se na opšte prepreke na koje su nastavnici nailazili tokom izvođenja nastave iz književnih kurseva (*Grafikon 8*).

Grafikon 8. Opšte prepreke na koje su nastavnici književnosti nailazili tokom onlajn nastave.
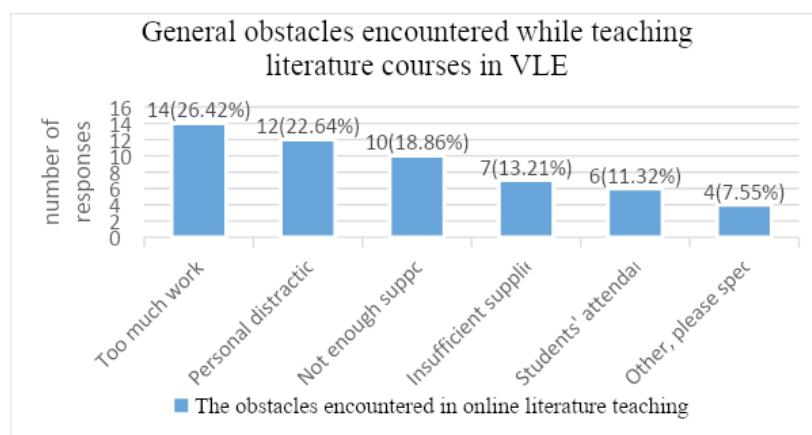
Analiza rezultata koji se odnose na izazove u nastavi pokazala je da je 26,42% (14) ispitanika istaklo prevelik obim posla kao najčešću prepreku; 22,64% (12) anketiranih odabralo je manjak koncentracije i rasejanost; 18,86% (10) naznačilo je nedovoljnu podršku u korišćenju dostupnih onlajn alata; 13,21% (7) odabralo je nedostatak nastavnih materijala/opreme; 11,32% (6) navelo je prisustvo na predavanjima; dok

se 7,55% (4) opredelilo za opciju „Drugo, molimo navedite" (*Grafikon 8*). Ispitanici koji su odabrali ovu poslednju opciju naveli su sopstveno neiskustvo u radu s onlajn platformama kao najveću prepreku prilikom izvođenja onlajn nastave iz kurseva književnosti.

3.1.4. Upotreba onlajn obrazovnih alatki u nastavi i pri proveri znanja studenata

Pitanja 9 i 10 bave se korišćenjem onlajn alatki u onlajn književnim kursevima i zatvorenog su tipa. Ukoliko su ispitanici odgovorili potvrdno, ponuđeno im je da navedu koje alatke su koristili. Rezultati su predstavljeni grafički (*Grafikon 9, 10*).

Grafikon 9. Upotreba onlajn obrazovnih alatki pri sprovođenju onlajn književnih kurseva.

Grafikon 10. Upotreba onlajn alatki u svrhu provere znanja.

Koristio/la sam onlajn alatke u svrhu provere znanja

Analiza rezultata pokazala je da 55,88% nastavnika nije koristilo onlajn obrazovne alatke pri predstavljanju gradiva (19), dok ih je 44,12% nastavnika (15) koristilo (*Grafikon 9*). Takođe, čak 74,29% (26) ispitanika nije koristilo nijednu onlajn alatku u svrhu provere znanja, te je samo 25,71% (9) nastavnika odgovorilo pozitivno (*Grafikon 10*). Dalja analiza pokazala je da se ispitanici koji su potvrdno odgovorili na pitanja 9 i 10 oslanjaju na alatke koje su ponuđene u okviru onlajn platformi *Moodle* i *Google Classroom*, a neke od najkorišćenijih jesu onlajn kvizovi (kvizovi na platformi *Moodle* omogućavaju jednostavnu proveru znanja kroz različite zadatke, kao što su zadaci sa višestrukim izborom, složeni zadaci za samoocenjivanje sa detaljnim povratnim informacijama ili višestrukim izborom, zadaci sa dvočlanim izborom (tačno/netačno) ili pak zadaci koji podrazumevaju povezivanje, kratak odgovor ili esej) i *Google Forms*. *MTutor* je još jedna od onlajn alatki korišćenih za proveru znanja, ali pošto je ograničena na pitanja sa višestrukim izborom, potrebno je kombinovati je sa drugim onlajn obrazovnim alatkama koje omogućavaju duže odgovore, odnosno alatkama koje omogućavaju učenicima da predstave puno razumevanje književnih tekstova.

4. *Diskusija*

Ključno je da obrazovne institucije pažljivo odaberu sistem za upravljanje učenjem (engl. *Learning Managment System* – LMS), budući da onlajn platforme s integrisanim softverom za video-konferencije predstavljaju najbolju alternativu nastavi licem u lice jer funkcionišu kao virtuelne učionice koje omogućavaju efikasno dostavljanje nastavnih materijala i postavljanje materijala u različitim formatima, nude različite oblike komunikacije i provere znanja, kao i transparentne povratne informacije. Ova pilot-studija ukazala je na činjenicu da su institucije tercijarnog obrazovanja koje su učestvovale u istraživanju dobro reagovale na vanrednu situaciju, jer su odabirom onlajn platformi koje su jednostavne za korišćenje i koje su se pokazale kao dobra ad hok alternativa za model tradicionalne nastave obezbedile kontinuitet u učenju, te ova tehnička rešenja zadovoljavaju potrebe nastavnika za sprovođenje onlajn književnih kurseva.

Međutim, činjenica da više od polovine nastavnika nije koristilo onlajn alatke pri predstavljanju nastavnih materijala i proveri znanja studenata u virtuelnom obrazovanju ukazuje na njihovu sklonost ka tradicionalnim pristupima nastavi u onlajn nastavnom okruženju. Nastava u virtuelnom okruženju zahteva inovativne pristupe kombinovanja i upotrebe interaktivnih onlajn alatki koje zadovoljavaju potrebe digitalnog okruženja, te je ovo razlog zašto nastavnici nisu mogli da održe isti kvalitet obrazovnog sadržaja u virtuelnom okruženju kao u tradicionalnoj učionici, što je dodatno uticalo na broj studenata koji pohađaju predavanja i otežalo sposobnost nastavnika da pravilno prate i procenjuju rad studenata. Pošto ova studija ne otkriva koji bi tip onlajn alatki trebalo koristiti da bi se zadovoljile potrebe onlajn književnih kurseva, trebalo bi sprovesti dalja istraživanja kako bi se rešio ovaj problem.

Učešće studenata u diskusijama i debatama na času razvija kritičko mišljenje kroz verbalnu i neverbalnu komunikaciju, na šta se tradicionalni književni kursevi oslanjaju. S obzirom na to što socijalna interakcija aktivira učenje jezika (Bugarski, 1996, str. 12; Hellerman, 2008, str. 2), ne iznenađuje da su društveni faktori jedna od ključnih komponenti za održavanje uspešnog upravljanja razredom u virtuelnom okruženju za učenje (engl. *Virtual Learning Environment* – VLE). Rezultati su po-

kazali da je interakcija nastavnik – student predstavljala glavni problem, te da je ona bila uglavnom asinhrona i ograničena na pismenu komunikaciju.

Rezultati su takođe pokazali da je pad broja studenata koji pohađaju predavanja u virtuelnom okruženju za učenje rezultat nedostatka usmene (engl. *face-to-face)* i neverbalne komunikacije, jer su studenti za komunikaciju sa nastavnicima pretežno koristili imejl i boksove za ćaskanje na platformama/društvenim mrežama. Štaviše, neke institucije koje su učestvovale u istraživanju zamolile su svoje nastavnike da snimaju predavanja kako bi učenici mogli da ih odgledaju u bilo kom trenutku. Iako se takva opcija učenicima čini veoma privlačnom (ne prate predavanje u stvarnom vremenu, već ga pogledaju kada im odgovara), nastavnicima stvara dodatni posao i ne pruža im trenutne povratne informacije od studenata, te je za njih krajnje zamorna. Prevelik obim posla identifikovan je kao najčešća prepreka s kojom su se nastavnici suočavali i proizašao je iz desetine imejlova na koje moraju odgovoriti, a tiču se raznih nesporazuma i daljih pojašnjenja pojedinih delova predavanja. Ovi rezultati su u skladu sa rezultatima nedavnog istraživanja, koje je istaklo da je velik obim posla jedan od najznačajnijih stresora u vezi sa prinudnim prelaskom na onlajn nastavu za više od 600 nastavnika jezika širom sveta (MacIntire, Gregersen & Mercer, 2020, str. 7).

5. Zaključak

Zbog činjenice da su nastavnici u Srbiji bili suočeni s ograničenim izborom sistema za upravljanje učenjem, zaključuje se da su programi za učenje na daljinu koji se oslanjaju na korišćenje sistema za upravljanje učenjem bili retkost u Srbiji i da su potrebna dalja istraživanja u ovoj oblasti kako bi se nastavnici, bez obzira na okolnosti, podstakli na češću upotrebu sistema za upravljanje učenjem u nastavi. Nedostatak iskustva s onlajn platformama, manjak usavršavanja na seminarima i obukama igraju ključnu ulogu u pravilnom upravljanju onlajn učionicama, te je od velike važnosti obezbediti nastavnicima adekvatnu obuku koja će im pomoći da u potpunosti shvate sve prednosti korišćenja sistema za upravljanje učenjem.

Uzimajući u obzir činjenicu da su onlajn književni kursevi u Srbiji predstavljali novinu i da nije postojao model ovakvih kurseva, može se zaključiti da su tokom posmatranog perioda nastavnici književnosti na tercijarnom obrazovnom nivou u Srbiji bili u mogućnosti da prevaziđu razna ograničenja koja su im nametnuta, među kojima je kao veliki problem uočena loša interakcija nastavnik – student, koja je direktno uticala na sprovođenje onlajn nastave (prisustvo studenata, kvalitet sadržaja predmeta, pravilno praćenje rada i provera znanja studenata, veliki obim posla). Manjak iskustva s onlajn platformama i digitalnim alatkama i tendencija nastavnika da svoje onlajn kurseve učine što sličnijim kursevima koji se odvijaju u tradicionalnim učionicama, uticali su na kvalitet predavanja u virtuelnom okruženju za učenje i otežavali provere znanja i proces praćenja napretka studenata. Analiza dobijenih rezultata hitno poziva na dalja istraživanja učenja na daljinu u oblasti humanističkih nauka, a posebno u onlajn podučavanju književnosti. Da bi stvorili odgovarajuću alternativu tradicionalnom kursu književnosti – njegov onlajn pandan – istraživači u Srbiji treba da uzmu u obzir ograničenja i mogućnosti srpskog obrazovnog sistema i da ih prilagode modelima onlajn kurseva književnosti koji se nude u razvijenim zemljama. Samo uz kreiranje odgovarajućeg onlajn kursa književnosti biće moguće usmeriti istraživanje ka razvoju i primeni inovativnih modela kombinovanog učenja.

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Milena Škobo¹

ANGLO-AMERICAN LITERATURE COURSES IN TERTIARY EDUCATION IN SERBIA AT THE COVID-19 OUTBREAK

ABSTRACT: The aim of this paper is to determine the quality and nature of online Anglo-American literature courses at tertiary education level in Serbia, with the special focus on ad hoc solutions regarding the course management and design, as there was no history of conducting online literature courses prior to the COVID-19 outbreak. This pilot study predominanlty relies on the quantitative research based on the analysis of a corpus consisting of a survey questionnaire composed of 10 closed-ended questions distributed to 35 Anglo-American literature teachers at several state and private universities in Serbia. The teachers' answers were analyzed and classified into 4 categories according to the common denominator: online literature course management (1), teacher-student interaction (2), challenges of teaching literature online (3), and online tools used (4).

1. Introduction

In the 21st century being digitally literate is equally important for teachers and students and the ability to properly use ICT in the process of theoretical and practical knowledge transmission and acquisition has been an ultimate goal of all teaching courses in the field of humanities.

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Teaching foreign language courses is highly responsive to the integration of the latest technologies as it is interdisciplinary in its nature and open to the novelties originating from distinctive scientific fields. At the COVID-19 outbreak, it was expected from ESL teachers to create a technology-friendly environment that promoted English language learning through activation of productive and receptive skills, master working with online platforms within a short period of time, digitalize their face-to-face courses and keep up with the latest trends in the world of ICT.

Teaching literature courses online is even more demanding if seen in the light of its adjustment to the latest developments in the ICT world, as it is quite challenging to bridge the gap between technology – linked with the concept of dehumanization of humanity – and love of a written/ spoken word as a part of the artistic expression. Therefore, the process of identifying, exploring and interpreting human values in the VLE becomes a true challenge *per se* set before ESL teachers engaged in literature courses in the digital age (**Š**kobo and Đerić-Dragičević, 2019, p. 84). With the COVID-19 outbreak, this challenge became even more salient for the Anglo-American literature teachers in Serbia, where traditional approaches to teaching literature were prevalent and no history of designing online literature courses could be traced prior to the pandemic. Thus, a sudden shift to VLE highlighted the importance of digital literacy of teachers and the need for redefinition of teaching methodology in literary studies.

2. Distance learning and online literature courses in Serbia

Based on the research conducted in the field of distance learning at higher education in Serbia, there were only a few departments that included distance learning into their study programmes - there was a total of 17 accredited distance study programmes at faculties and 6 accredited distance study programmes at colleges of applied studies in Serbia in 2013 (Matijašević-Obradović and Joksić, 2014, p. 155). According to the latest data retrieved from the National Entity for Accreditation and Quality Assurance in Higher Education (2021), there are no accredited distance learning study programmes in Serbia in the humanities. A lack of training in regard with teaching methodology in distance learning courses was also detected (Škobo and Sentov, 2020, p. 394). As a result,

teachers' demotivation and a heavy workload were identified as the major setbacks in distance learning (Đukić-Mirzayantz, 2017, p. 45).

The crucial role in the development of distance learning system in Serbia was played by the Academic Network of Serbia (AMRES) that launched a project aimed at introducing the concept of e-education to many faculties across the country in 2007. Among the faculties that joined this project which assumed the use of Moodle - a free of cost, open-source platform - were also the Faculty of Philosophy and the Faculty of Philology in Belgrade (Milićević, Mili*ćević and* Milić, 2014, p. 80). However, there is a relatively small number of researchers from the social sciences and humanities that addressed the challenges of creating and implementing online foreign language courses prior to pandemic (Trajanović, Domazet and Mišić-Ilić, 2007; Vukotić and Tanasijević, 2012; Đorđević and Radić-Bojanić, 2014; Tanasijević and Vukotić, 2014; Đukić-Mirzayantz, 2017). The number of studies drops significantly when it comes to designing and organizing online literature courses at English Departments at tertiary education level in Serbia (Škobo and Sentov, 2020; Škobo, 2021). As no online literature course model was offered in Serbia prior to the pandemic to serve as a guidance to teachers in their course planning and implementation, it is of great importance to examine how literature teachers managed to tackle the emergency situation and lay the foundations for further research regarding the online literature course design and management.

2.1.　　Teaching Anglo-American literature in the digital age

Teaching Anglo-American literature in the 21st century means using interdisciplinary approaches that combine traditional language teaching with innovative teaching methodologies such as the use of online educational tools (Nikolić and Dabić, 2016, p. 318, Škobo 2020, Škobo and Sentov, 2020), audio-visual devices (Nikolić, 2017) and social networks (Johnson, 2016; Parrott, 2016; Rodrigo, 2016; Škobo, 2020). Using new forms of media content in teaching literature influences the way we read and understand the literature written prior to the digital age (Scholes, 2010; Cushman, 2011; ***Škobo and Dragičević-Đerić, 2019***) and encourages students' self-expression, creativity and critical thinking.

Many researchers have noticed that literature develops critical thinking skills and triggers creativity (Yaqoob, 2011; Alvarez, Calvete and Sarasa, 2012; Bobkina and Stefanova, 2016; Stefanova, Bobkina and Pérez, 2017). As critical thinking skills are crucial for interpreting the literary works and reading literary works encourages the development of critical thinking skills, literature teachers are required to find proper ways of their promotion and implementation in an online context. In both traditional (campus-based) and online literature courses critical thinking can be promoted through using multimedia contents in the form of digital storytelling (Ohler, 2008; Hartley and McWilliam, 2009; Robin and McNeil, 2012; Brenner, 2014; Robin, 2016; Ibarra-Rius and Ballester-Roca, 2019), blogs (Reimer, 2016; Giralt and Murray, 2019) and book-trailers (Tabernero and Calvo, 2016). Language platforms and forum discussions are another efficient means of developing critical skills and presenting and interpreting the contents of literary works, so they can be successfully used in online literature courses (Škobo, 2020, p. 6; Škobo and Sentov, 2020). Therefore, the level of teachers' use of online tools not only affects the quality of subject content created/presented but also enhances the teacher-student interaction in VLE.

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3. **Description of methodology**

The aim of this research was to determine the nature and quality of online Anglo-American literature courses at tertiary education level in Serbia in Spring 2020 term at the COVID19-outbreak. The survey questionnaire (www.surveymonkey.com) consisting of ten closed-ended questions, 8 of which included an 'Other, please specify' response option and 3 of which allowed multiple response answer, was distributed to literature teachers via e-mail. There were 35 Anglo-American literature teachers in total from the English Departments at three state (the Faculty of Philology in Belgrade, the Faculty of Philosophy in Niš, the Faculty of Philosophy in Kosovska Mitrovica) and three private universities in Serbia (Singidunum University, the Faculty of Law and Business Studies Dr. Lazar Vrkatić, the Faculty of Foreign Languages at Alfa BK University). The results are presented in four parts: online literature

course management (1), teacher-student interaction in VLE (2), challenges of teaching literature online (3), and online tools used in teaching and evaluating students' knowledge (4).

3.1. Presentation of the results

3.1.1. *Online literature course management*

Questions 1-5 focus on online literature course management. Question 1 concerning the type of online teaching platform the literature teachers mostly used for conducting their Anglo-American literature courses online is a closed-ended multiple response question with an 'Other, please specify' response option. The results are presented graphically (*Chart 1*).

Chart 1. Online platforms mostly used for teaching Anglo-American courses online.

The online platforms I mostly used for teaching Anglo-American courses online.
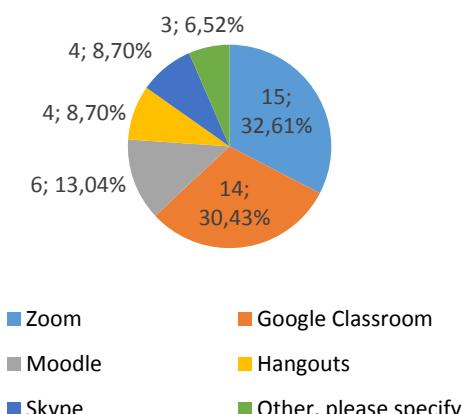
As shown in *Table 1*, the analysis of the results indicated that 32.61% (15) of all respondents used a web conferencing software Zoom for conducting their online literature courses during the Spring 2020 term. At the time it was used, Zoom was a solid ad hoc alternative to a more so-

phisticated LMS suitable for distance learning. Conducting lectures via Zoom resembled the traditional face-to-face instruction on campus, as teachers could lecture, share notes and presentations and students could virtually raise hands and ask questions. 30.43% (14) of the respondents used Google Classroom - the most frequently used LMS resembling a virtual classroom. However, at the time it was used, Google Classroom functioned as an asynchronous system. Only when the option for integrating Google Meet or other online meeting applications was offered, were the teachers and students able to see and hear each other in real-time, by providing an information about teaching sessions through announcements in Google Classroom.

Moodle, with its integrated the Big Blue Button that provides a real-time audio and video sharing option and also allows students to join with their webcams, turned out to be the second most used LMS within the universities observed in this survey (13.04% (6)). The results also show that the equal number of teachers 8.70% (4) opted for Skype and Hangouts as other types of cheap web conferencing software. Like Zoom, Skype and Google Hangouts allow video and audio conferencing, screen sharing, live chats, sharing and storing files and provide technical support. They all have an option for one-to-one tutoring with the use of two-way video, which provides an intensive one-to-one instruction and support and makes learning less impersonal and more "face-based". 6.52% (3) opted for other platforms and applications (iTeacher, Leftor). Social media networks and applications (Viber, Facebook) were not used as a means of conducting lectures in VLE by literature teachers, though they can serve as a viable supplement to teaching and presenting literary contents (see Škobo 2020).

Question 2 deals with teachers' satisfaction with the technical solution for conducting their online literature courses and the results are presented graphically (*Chart 2*), while Question 3 focuses on teachers' ability to maintain the same quality of their lecture content in VLE as in traditional, face-to-face instruction (*Chart 3*):

Chart 2. Teachers' satisfaction with the technical solution for conducting the online literature classes.

The technical solution for conducting the online literature classes was satisfactory.
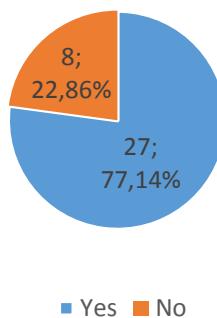
Chart 3. Maintaining the same quality of the lecture content in VLE as in face-to-face instruction.

The quality of the lecture content in VLE was the same as in face-to-face instruction.
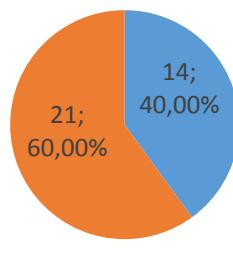
The analysis of the results concerning teachers' satisfaction with the technical solution for conducting the online literature courses indicated that 77.14% (27) of all respondents answered positively, while 22.86% (8) of them responded negatively (*Chart 2*). As of the quality of online teaching content, the results indicate that more than half of the respondents (60%) said they were unable to maintain the same quality of their lecture content in VLE when compared to in-class instruction, while 40% answered positively *(Chart 3)*. The further analysis of the negative answers pointed to the absence of non-verbal contact, poor teacher-student/student-student interaction, motivational factors and inability to properly track students' knowledge acquisition as the main reasons for not maintaining the same quality of the lecture content in VLE as in face-to-face instruction.

Question 4 focuses on whether conducting online literature courses negatively affected the number of students attending the lectures (*Chart 4*), while Question 5 asks whether the literature teachers managed to properly evaluate the students' performance (*Chart 5*).

Chart 4. The negative impact of transferring a literature course to an online context on student attendance.

Conducting an online literature course has negatively affected the number of students attending the lessons.
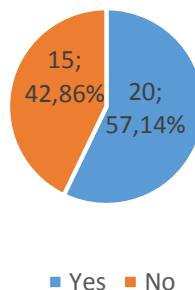
Chart 5. Teachers' ability to properly evaluate students' performance.

Teachers were able to properly evaluate students' performance.

8;
22,86%

27;
77,14%

■ Yes ■ No
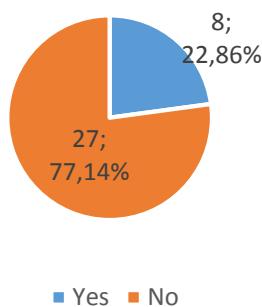
As of online lecture attendance, the obtained results indicated that 57.14% (20) of all respondents claimed there was a fall in number of students attending the lectures, while 42.86% (15) answered negatively. The fall in number of students attending the online lectures is linked to the quality of subject content and teacher-student interaction, as adapting traditional materials to online environment and creating interactive online content makes the classes more engaging. The results obtained regarding the teacher's ability to properly evaluate the students' performance indicate that 77.14% (27) of all respondents answered negatively, while 22.86% (8) gave positive answers (*Chart 5*). These results point to the fact that proper evaluation of students' knowledge depends on students' in-class participation and attendance. However, the evaluation is problematized when students do not attend the real-time sessions but send their homework on regular basis, as it is difficult to determine whether they did it independently or relied on other resources.

3.1.2. *Teacher-student interaction in VLE*

Questions 6-7 focus on the nature of teacher-student interaction in VLE. Question 6 dealing with the teachers' satisfaction with the level of online teacher-student interaction is a closed-ended with the option to specify the reasons for providing negative answers (*Chart 6*), while Question 7 focuses on the ways in which the teacher-student interaction was achieved in VLE (*Chart 7*).

Chart 6. Teachers' satisfaction with the level of interaction with students in VLE.

Teachers were satisfied with the level of interaction with students achieved in VLE.

■ Yes ■ No
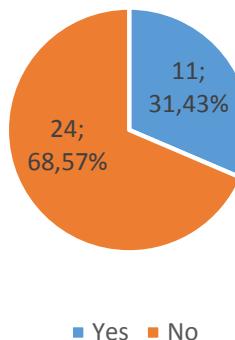
Chart 7. The ways of establishing teacher-student interaction in VLE.
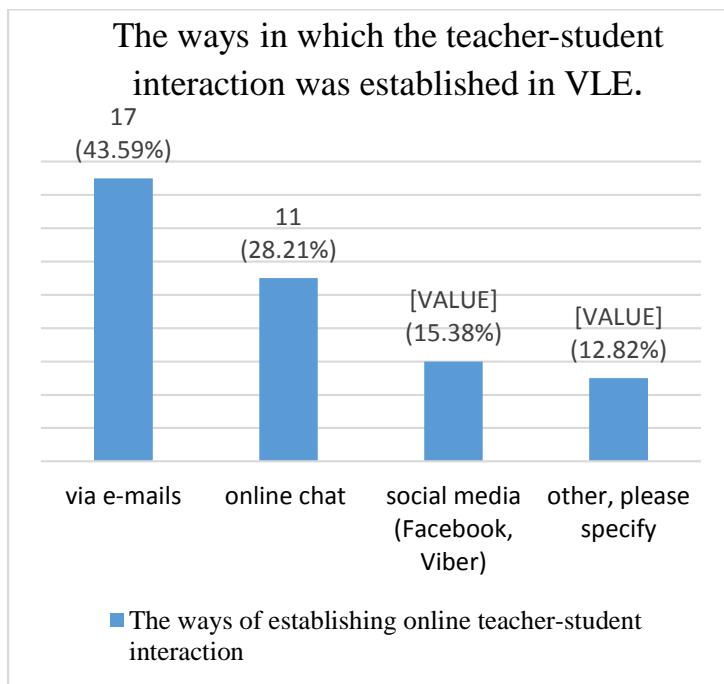
Teacher-student interaction was detected as a major problem. The obtained results indicate that more than half of the teachers (68.57%) were dissatisfied with the interaction with their students in VLE, while 31.43% (11) of them responded positively as shown in the chart (*Chart 6*). Further analysis of their responses regarding their dissatisfaction with the teacher-student interaction pointed to the following reasons: inability to properly track students' attendance and participation (students often feigned their presence and skipped the lessons); the limitations of the platform used (i.e. inability to do the tasks in pairs and groups), and motivational issues stemming from a poor teacher-student interaction.

As of the ways in which the teacher-student interaction was achieved during the stated period, the results indicated that the interaction was mostly asynchronous, as 43.59% (17) of all respondents used e-mails.

This is followed by online chat used by 28.21% (11) and social media networks and applications used by 15.38% (6); 12.82% (5) chose 'Other' response option *(Chart 7)*. The further analysis of the results indicated that the respondents who opted for 'other' response option relied on the synchronous 'real-time meeting' component integrated within the online platform (i.e. The Big Blue Button within Moodle or Google Meet and Zoom within Google Classroom).

3.1.3.   *Challenges of conducting online literature courses*

Question 8 focuses on the general obstacles the teachers encountered when conducting their online literature courses *(Chart 8)*.

Chart 8. General obstacles the literature teachers encountered in online literature teaching.
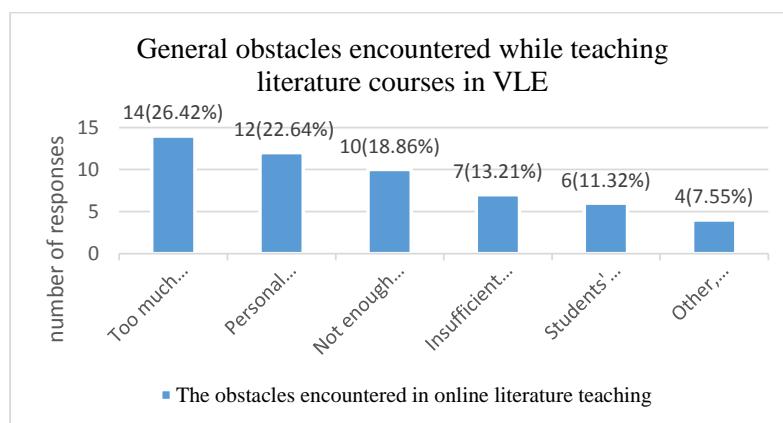
The analysis of the results regarding the challenges indicated that 26.42% (14) of all respondents listed too much work as the most frequent obstacle, 22.64% (12) of them opted for personal distractions, 18.86% (10) listed not enough support in terms of online tools available, 13.21% (7) chose insufficient supplies/equipment, 11.32% (6) opted for students' attendance, while 7.55% (4) chose an 'Other, please specify' re-

sponse option (*Chart 8*). The respondents choosing the 'Other' response option identified their inexperience with online platforms as the greatest obstacle when conducting their online literature courses.

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3.1.4. *Online tools in teaching and assessing students' knowledge*

Questions 9-10 dealing with the use of online tools in online literature courses were closed ended with an option to specify which tools were used if the answer was affirmative and the results are presented graphically (*Chart 9, 10*).

Chart 9. The use of online tools in conducting online literature course.
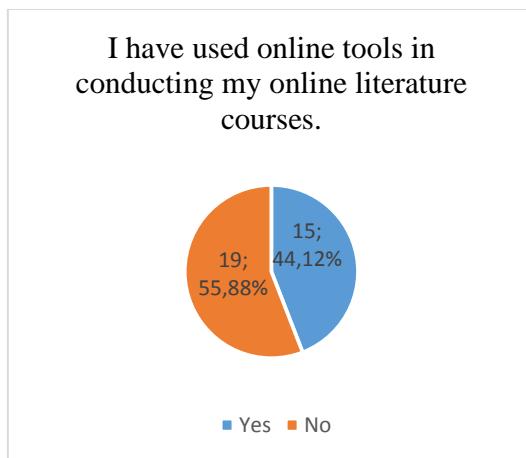
Chart 10. The use of online tools for testing.
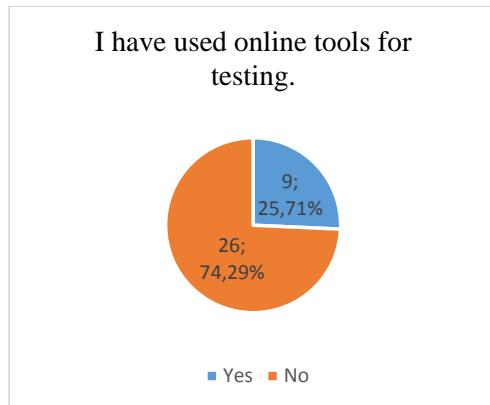
Chart 10. The use of online tools for testing.

The analysis of the results obtained concerning the teachers' use of online tools in presenting their subject content indicated that 55.88% (19) of them did not use any online tools whatsoever, while 44.12% (15) answered positively (*Chart 9*). Also, 74.29% (26) of all respondents did not use any online assessment tools, while only 25.71% (9) answered positively *(Chart 10)*. The further analysis showed that the respondents who answered affirmatively regarding the online tools in teaching and testing relied on the tools offered within the online platform (Moodle/ Google Classroom), such as the online quiz (i.e. Moodle quiz allowed simple, multiple-choice knowledge tests and complex, self-assessment tasks with detailed feedback /multiple choice, true/false, matching, short answer, essay/) or Google Forms. MTutor is identified as another online assessment tool used. However, as it is limited to multiple choice questions, it needs to be combined with other online assessment tools allowing longer responses that reveal students' deeper understanding of literary texts.

4. *Discussion*

As unified online platforms (LMS) with integrated video conferencing software are the most sophisticated alternative to the face-to-face instruction as they function as virtual classrooms that support efficient distribution of class materials and uploading resources in a variety of formats, enable diverse communication and assessment options and offer transparent feedbacks, it is of great importance for educational institutions to carefully choose the type of LMS for teaching practices. This pilot study pointed to the fact that the tertiary education institutions involved in the survey responded well to the emergency situation, as they ensured learning continuity by choosing easy-to-use online platforms that proved to be a solid ad hoc alternative to a traditional teaching model. This is the reason for teachers' satisfaction with the technical solutions for conducting their online literature courses.

However, the fact that more than half of the teachers did not use online tools in presenting their subject content and evaluating students' knowledge in VLE is indicative of the teachers' tendency to use traditional teaching approaches in an online teaching environment. Teaching in VLE requires taking innovative approaches that combine the use of interactive online tools that meet the needs of the digital environment. This is the reason why the teachers were unable to maintain the same quality of the subject content in VLE as in the traditional classroom, which further affected the number of students attending the lectures and problematized the teachers' ability to properly monitor and assess students' performance. As this study does not reveal what type of online tools should be used to meet the needs of online literature courses in particular, further research should be conducted to address this issue.

Traditional literature courses rely on students' engagement in live discussions and debates that develop critical thinking through verbal and non-verbal communication. Due to the fact that social interaction activates language learning (Bugarski, 1996, p. 12; Hellerman, 2008, p. 2), it is not surprising that social factors are identified as one of the key components in maintaining the effective class management in VLE. The results showed that the teacher-student interaction, detected as the major problem, was mostly asynchronous and limited to the written communication.

In similar vein, the results indicated that the fall in number of students attending the lectures in VLE was the result of a lack of oral (face-to-face) and non-verbal communication, as students predominantly used e-mails and chat boxes in the platforms/social networking sites for communicating with teachers. Moreover, some institutions involved in the survey asked their teachers to record their lectures so the students could listen to their video recordings anytime. Although such an option seems very attractive to students (they skip the lesson in real-time meetings and listen to the recording whenever they like), it is extremely tiresome for teachers, as it leaves them with a heavy workload and no immediate feedback from the students. A heavy workload – identified as the most frequent obstacle the teachers faced – resulted from the dozens of e-mails to reply to concerning the misunderstandings and further clarification of certain sections of the lecture. These results are in compliance with the results of the recent research, which pointed to a workload as one of the most significant stressors regarding the forced conversion to online teaching for more than 600 language teachers across the world (MacIntyre, Gregersen and Mercer, 2020, p. 7).

5. Conclusion

Due to the fact that teachers in Serbia were faced with limited number of LMS to choose from, it is concluded that distance learning programmes that rely on the use of LMS have been a rarity in Serbia and that further research is needed in this field in order to encourage teachers to frequently use LMS in teaching regardless of the circumstances. Moreover, it is of great importance to provide teachers with adequate training which will help them to fully grasp all the benefits of using LMS, as teachers' inexperience with online platforms and lack of seminars and teacher training play the crucial role in proper online classroom management.

Taking into consideration the fact that online literature courses in Serbia have been a novelty and that there was no online literature course model to start with, it can be concluded that for the period observed literature teachers at tertiary education in Serbia were able to go beyond the various limitations imposed on them, of which a poor teacher-stu-

dent interaction was detected as a major problem, as it directly affected the online class management (students' attendance, a quality of the subject content, a proper monitoring of students' performance and evaluation of their knowledge, a heavy workload). Teachers' inexperience with online platforms and digital tools and their tendency to make their online courses as similar as possible to those conducted in traditional classrooms affected the quality of the lectures in VLE and problematized the assessment and the process of monitoring students' progress. The analysis of the results has revealed an urgent need for further research into distance learning in the field of humanities, particularly in teaching literature courses online. In order to create a proper alternative to the traditional literature course – its online counterpart – the researchers in Serbia need to take into account the limitations and possibilities of the Serbian education system and adapt them to the online literature course models offered in developed countries. Only with the creation of a proper online literature course will it be possible to direct the research towards developing and implementing innovative blended learning models.

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POJAVA I ŠIRENJE TERMINOLOGIJE INSPIRISANE PANDEMIJOM KOVID-19 U ENGLESKOM JEZIKU

SAŽETAK: Za nešto manje od dve godine, pandemija kovida 19 ostavila je traga u brojnim oblastima kako svakodnevnog života, tako i naučnog rada. U tom smislu, lingvistika nije izuzetak. Prilikom suočavanja sa „novom normalnošću" u uslovima pandemije, morali smo da rešavamo i problem terminologije – kako ćemo govoriti o uticaju virusa na naš svakodnevni život. Stalne promene koje se dešavaju u medicini, politici, obrazovanju, zabavi, između ostalog, odražavaju potrebu za većom upotrebom već postojećih leksema, ali i novom terminologijom koja će nam pomoći da razumemo te društvene promene. Leksika engleskog jezika se neprestano proširuje, a procesi leksičke tvorbe postali su intenzivniji i učestaliji zbog povećanog prisustva na internetu tokom višemesečnih zatvaranja, karantina i ograničenja. Kreativnost u leksičkoj tvorbi tokom onlajn komunikacije rezultirala je mnogim novim terminima i frazama, od kojih su neki već zabeleženi u onlajn rečnicima, kao što su *Oxford University Press*, *Cambridge University Press*, *Macmillan* i *Merriam-Webster*. Lekseme koje se razmatraju u ovom radu preuzete su iz različitih, uglavnom onlajn, izvora, a ne samo iz pomenutih rečnika.

Ovaj rad detaljnije razmatra značenje i funkciju ovih leksema koje se sve češće koriste, kao i procese koji su se odvijali tokom njihove tvorbe, kao što su afiksacija (zoomwear), slaganje ili kompozicija (social bubble), abrevijacija (isolation), spajanje (covidiot), i skraćivanje (WFH – (working from home) rad od kuće).

KLJUČNE REČI: leksička tvorba (procesi), (derivacioni) neologizmi, produktivnost

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1. UVOD

Pandemija koronavirusa je u velikoj meri uticala na leksiku engleskog jezika, koja je vrlo otvorena za različite jezičke inovacije. Momentalno globalno povezivanje putem društvenih mreža i nedostatak živog kontakta bili su odlučujući faktori u širenju terminologije vezane za koronavirus, tako da su novi termini nastajali u svim društvenim poljima. Kad je u pitanju pandemija, jezička kreativnost je bila vrlo izražena, jer je kreiranje novog vokabulara sa kolektivnom kulturnom referencom ljudima pružalo osećaj zajedništva i olakšanja u stresnoj siruaciji.

Ishodi procesa leksičke tvorbe u svakom jeziku jesu bogatstvo rečnika i dodatna afirmacija jezika. Bauer primećuje da leksička tvorba „podrazumeva stvaranje novih leksema" (1983: 33), dok Jul kaže da je to „proučavanje procesa nastajanja novih reči u jednom jeziku" (1996: 64). Iako primarna tvorba leksema[2] omogućava spontanost, sekundarna tvorba leksema je najčešće vezana za pravila i spoljašnje uticaje. Novi termini koji se pojavljuju kreirani su tako da upućuju na već postojeće sa kojima se moraju uskladiti.

Ovaj rad se bavi terminologijom inspirisanom pandemijom koronavirusa, proizvoljno odabranom iz različitih, uglavnom onlajn, izvora; produktivnošću afiksacije, slaganja, slivanja i konverzije, i razmatra one procese leksičke tvorbe koje Bauer (1983) smatra nepredvidivim – abrevijaciju (*clipping*) i skraćivanje. Složenost nekih novonastalih leksema otkriva da su neki procesi međusobno povezani i da mogu zajedno da ispune ciljeve leksičke tvorbe u savremenom engleskom jeziku.

2. AFIKSACIJA

Procesom afiksacije stvaraju se nove lekseme od već postojećih dodavanjem jednog ili više derivacionih afiksa ispred ili iza korena ili

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[2] Primarna i sekundarna leksička tvorba razlikuju se po tome što prva predstavlja proizvoljno stvaranje korenskih morfema/leksema, tj. leksema koje nisu izvedene, složene ili nastale od drugih, postojećih leksema (neologizmi), dok se druga odnosi na promišljenu (motivisanu) leksičku tvorbu – stvaranje složenih leksema (derivacionih neologizama), tj. leksema nastalih na osnovu drugih leksema ili morfema.

osnove (Stefanovski, 2007). Koren može biti cela leksema ili deo lekseme koji predstavlja najmanju smislenu jedinicu koja se ne može razložiti na manje delove, a da ne izgubi svoje značenje.

U Tabeli 1 je predstavljena produktivnost različitih prefiksa i sufiksa u terminologiji vezanoj za pandemiju koronavirusa:

Prefiks		Osnova	Sufiks	Izvedena reč
anti-		fit	-	anti-fit
anti-		mask	-er	anti-masker
anti-		natal	-ism	anti-natalism
-		cottage	-core	cottagecore
-		fear	-ware	fearware
super-	fore-	cast	-er	superforecaster
tele-		therapy	-	teletherapy
-		zoom	-wear	zoomwear

Tabela 1. *Primeri afiksacije u terminologiji vezanoj za pandemiju koronavirusa*

Dodavanje vezanih morfema ispred korena poznato je kao prefiksacija. Stefanovski primećuje da „engleski prefiksi imaju isključivo leksičku (derivacionu) ulogu, omogućavajući tvorbu velikog broja novih reči u engleskoj leksici” (2007: 139). Većina prefiksa u engleskom jeziku ne utiče na promenu vrste reči, tj. reč kojoj je dodat prefiks ostaje u svojoj prvobitnoj klasi (*class-maintaining prefixes*); zato ovde posmatramo njihovu semantičku, a ne sintaksičku ulogu. Neki takvi produktivni prefiksi koji se pojavljuju u kovid-terminologiji ilustrovani su sledećim primerima:

(1) anti- : [X]n – [antiX]n; ʻagainst Xʼ – *orientation*   *anti*-fit – nasuprot pravilnog pristajanja koje prati oblik nečijeg tela.
(2) fore- : [X]n – [foreX]n; ʻbefore Xʼ – *time and space*   *fore*caster – osoba koja predviđa nešto unapred.
super- : [X] – [superX]; ʻabove, beyond Xʼ – *time and space*   *super*forecaster – osoba čiji je posao da tačno predvidi stopu mortaliteta i ukupan broj zaraženih kovidom 19 za godinu dana od sada.
(3) tele- : [X] – [teleX]; ʻat a distanceʼ – *time and space*   *tele*therapy – korišćenje alata za video-konferencije kao bezbednijeg načina za terapeute da leče pacijente tokom socijalnog distanciranja.

Tabela 2. *Neki produktivni prefiksi za održavanje vrste u kovid-terminologiji*

Primeri u (2) pokazuju da leksema može biti podvrgnuta derivaciji više puta dok ne dostigne oblik neophodan da izrazi željeno značenje. Ovo omogućava stvaranje velikog broja novih kontekstno-specifičnih izvedenica.

Proces *sufiksacije* podrazumeva dodavanje vezane morfeme posle korena (Stefanovski, 2007). Za razliku od prefiksa, koji uglavnom ne utiču na promenu vrste reči i tiču se gramatičkog značenja, sufiksi obično utiču na promenu vrste reči (*class-changing*). Pošto je njihova primarna funkcija da menjaju gramatička svojstva osnove, trebalo bi ih klasifikovati sintaksički i potklasifikovati semantički. U tom smislu, sufiksi se mogu podeliti u dve grupe: oni koji utiču na promenu vrste reči i oni koji ne utiču na promenu vrste reči. Dalje se mogu podeliti prema leksičkoj kategorije osnove (denominalna, deverbalna, odnosno deadjektivna) i izvedenice (obično imenica, glagol ili pridev). Ova klasifikacija se može ispitati korišćenjem sledećih sufiksa:

(4)	-er : [X]v – [Xer]n; 'one who Xs', 'engaged in X (if [X]n)' Menja vrstu, deverbalna imenica *(V-N)* npr. *anti-masker*
(5)	-ism : [X]adj – [Xism]n; 'denoting Xism', 'belief in Xism' Menja vrstu, deadjektivna imenica *(Adj-N)* npr. *anti-natalism*
(6)	-core : [X]n – [Xcore]n; 'vrlo za X', 'X do srži' Ne menja vrstu, denominalna imenica *(N-N)* npr. *cottagecore*, takođe *farmcore* ili *countrycore*
(7)	-ware : [X]n – [Xware]n; 'klasifikujući X', 'X koji se koristi za određenu svrhu' Ne menja vrstu, denominalna imenica *(N-N)* npr. *fearwar*e
(8)	-wear : [X]n – [Xwear]n; 'određena vrsta odeće povezana sa X' Ne menja vrstu, denominalna imenica *(N-N)* npr. *zoomwear*

Tabela 3. *Neki produktivni sufiksi u kovid-terminologiji*

Produktivni sufiks *-er* (4) jeste deverbalni imenički – njegova osnova je glagol, a izvedenice su imenice. Deadjektivni imenički *-ism* (5) koristi pridev da stvori imenicu koja se odnosi na filozofiju koja se bavi pitanjem globalne prenaseljenosti. S druge strane, (6), (7) i (8) primeri su sufiksa koji ne utiču na promenu vrste reči – koristi se imenička osnova,

a izvedenice su takođe imenice. Osim toga, ovi sufiksi imaju posebno značenje samo u određenom kontekstu, pa ih možemo zvati *sufiksoidi*, tj. delovi osnove koji se nalaze posle korenske morfeme, a imaju karakteristike i slobodnih i vezanih morfema. Sufiks *-core* (6) obično označava tip, žanr ili podvrstu, ali se može odnositi i na različite stilove u modi ili umetnosti – *naturecore*, *goblincore*, *metalcore* i sl. Sufiks *-ware* je verovatno najproduktivniji u terminologiji vezanoj za informacione tehnologije i odnosi se na programe koje računar izvršava. Slično, prema zbirnoj imenici *malware* (zlonamerni *software*), *fearware* su napravili sajber napadači kako bi se nanela šteta računarskim sistemima ili dobio neovlašćeni pristup nečijim podacima. Primer u (8) koristi sufiks *-wear*, koji se kombinuje s imenicama i pridevima da bi se formirale izvedene imenice koje se odnose na određenu vrstu odeće (npr. *outerwear*, *menswear*, *footwear* itd.). *Zoomwear* je postao popularan prelaskom sa sastanaka i predavanja uživo na sastanke na platformi za video-konferencije *Zoom*. Ljudi koji nose *zoomwear*, formalno su obučeni do struka, a van domašaja veb-kamere nose nešto udobnije.

3. SLAGANJE

U procesu slaganja (engl. *compounding)* od dve ili više morfemskih osnova nastaje nova leksema – složenica. Stefanovski (2007: 163) kaže da „složenice liče na sintaksičke izraze po tome što i kombinovane jedinice uvek postoje nezavisno kao reči – odnosno potpune su i fonološki i semantički". Složenice mogu, ali ne moraju, biti slične po značenju svojim sastavnim delovima, a njihovi elementi mogu, ali ne moraju, pripadati istoj vrsti reči.

Mnogi termini koji su se pojavili tokom ovog perioda nastali su slaganjem, jer je ljudima lakše da kombinuju već postojeće lekseme, nego da pokušavaju da izmisle potpuno nove. Iako složenice ne moraju nužno biti nove, njihovo nedavno stečeno značenje jeste.

Na primer, ako neko nije upoznat s aplikacijom za video-konferencije *Zoom*, ne može da pogodi značenje reči *Zoombombing,* koja se odnosi na situacije kada se internet-trolovi nepozvani priključuju, odnosno „upadaju" na onlajn dešavanja. Ljudi koji se ponašaju na neukusan i

uvredljiv način mogu da snose ozbiljne pravne posledice, stoga je drugi deo složenice *bombing* (kao *photobombing*). Iako je *Zoom* nastao još 2011. godine, ovaj termin je postao popularan u martu 2020, gde je do većine upada došlo tokom održavanja onlajn nastave na ovoj platformi. Osim toga, i *shopping-starved* i *revenge spending* sastoje se od već poznatih leksema. Međutim, njihovo složeno značenje se odnosi na nove pojave – ljudi mogu biti *shopping-starved* („gladni šopinga/kupovine”) zbog nemogućnosti da fizički posećuju prodavnice tokom karantina, zbog čega će tada pribeći *revenge spending* („neumerenoj potrošnji”), tj. kupovaće i više nego što im je potrebno pošto se prodavnice otvore.

I mnoge druge složenice našle su svoje mesto u svakodnevnom jeziku. Većina njih se sastoji od dve imenice; uobičajena je kombinacija *imenica + imenica*, ali se mogu kombinovati i druge reči, kao što se vidi u Tabeli 2:

	imenica (N) *(2nd element)*	*pridev* (Adj) *(2nd element)*	*glagol* (V) *(2nd element)*
imenica (N) *(1st element)*	cleanliness theatre, corona corridor, coronababies, coronavision, lockdown tache, quarantine and chill, Zoom mom	shopping-starved, touch-starved	doom-scrolling, doom-surfing, revenge shopping, revenge spending
pridev (Adj) *(1st element)*	digital nutrition, double bubble, long covid, social bubble		

Tabela 4. *Sastavni delovi složenica sa primerima*

U Tabeli 4 vidimo i sledeće obrasce: *imenica + imenica, pridev + imenica, imenica + pridev i imenica + glagol*. Kako se složenice obično klasifikuju prema svojoj funkciji u rečenici, možemo izvršiti i potpodelu složenica u odnosu na obrazac tvorbe, odnosno leksičke kategorije sastavnih delova. Što se tiče sintaksičke klasifikacije složenica, postoje tri glavna tipa koji odgovaraju trima glavnim leksičkim kategorijama: imeničke, pridevske i glagolske složenice.

3.1 Imeničke složenice

Imeničke složenice (složene imenice) sastoje se od dve ili više leksema koje se slažu u jednu imenicu, a obično se formiraju od imenica koje modifikuju pridevi, glagoli ili druge imenice. Bauer (1983: 185) primećuje da su imeničke složenice, posebno kombinacija *imenica + imenica*, najčešći tip složenica u engleskom jeziku. On takođe primećuje da je „većina složenica sastavljenih od dve imenice 'desnoglava', tj. ima glavni deo koji je desni element složenice". Sintaksički, svojstva glavnog dela prenose se na celu složenicu, tako da, ako je glavni deo imenica, složenica će biti imenička. To se može videti u nastavku:

(9) a. *coronababies*	
	lockdown tache
b. *long covid*	
(10) a. *cleanliness theatre*	
b. *double bubble*	
digital nutrition	
(11) *quarantine and chill*	

Tabela 5. *Primeri složenih imenica značenjski vezanih za pandemiju*

Semantički, u endocentričnoj složenici njeni članovi A+B označavaju posebnu vrstu B, odnosno glavni deo određuje opštu leksičku kategoriju koja sadrži značenje složenice. Tako da su *coronababies* = bebe začete tokom karantina, a *lockdown tache* = brkovi izrasli tokom lokdauna. Endocentrični oblici (9a) sastoje se od dve imenice, dok složena imenica (9b) ima pridev koji modifikuje glavnu imenicu, a odnosi se na trajne posledice i simptome bolesti.

Oksfordski rečnik engleskog jezika prepoznaje opštu upotrebu poluspoženice *COVID-19,* skraćenog oblika složenice „zarazna bolest od koronavirusa 2019", kao modifikatora imenica u mnogim složenicama. Izrazi kao što su „slučaj kovida 19", „test na kovid 19", „virus kovid 19" itd., postali su uobičajeni.

Članovi A+B u složenicama (10) rezultiraju posebnom vrstom neizražene semantičke glave koja sadrži značenje složenice. Ove složenice su egzocentrične. Složenica *imenica + imenica* (10a) ne odnosi se stvarno na pozorište (ili pozorišnu predstavu) koje je poznato po svojoj čistoći, već na higijenske mere protiv koronavirusa koje se sprovode samo zato da bi se ljudi osećali bezbednije na javnom mestu, a ne zato što zaista imaju efekta. Složenice *pridev + imenica* (10b) takođe su egzocentrične. *Double bubble* („dva kruga") nema nikakve veze sa mehurima ili pak krugovima, već označava članove dva odvojena domaćinstva („kruga") kojima je dozvoljeno da se viđaju uz postepeno ukidanje ograničenja. Pojam *digital nutrition* („digitalna ishrana/unos hranljivih sastojaka") podrazumeva da je tokom pandemije došlo do povećane upotrebe elektronskih uređaja i da ljudi treba da vode računa da to ne šteti njihovom fizičkom i mentalnom zdravlju.

Složenica (11) predstavlja drugu semantičku vrstu složenica sa dve semantičke glave koje nisu nužno međusobno zavisne, tj. A + B označava „zbir" onoga što A i B označavaju. Kopulativna složenica, kao *quarantine and chill,* opisuje dve aktivnosti koje se dešavaju u isto vreme, tj. biti u karantinu i „kulirati" sa nekim, najčešće sa svojim partnerom.

Što se tiče pravopisnih pravila, Adams (1973: 59) primećuje da „složenice mogu biti napisane kao jedna [zatvorena ili čvrsta] reč, kao dve reči sa crticom ili kao dve [otvorene ili razmaknute] odvojene reči, ponekad bez obzira na stepen jedinstva koji se može osetiti između elemenata". Međutim, za pisanje složenica mogu važiti drugačija pravila, jer su ove reči nastale nedavno.

3.2 Pridevske složenice

Pridevske složenice ili složeni pridevi nastaju kada se kombinuju najmanje dve lekseme radi modifikacije iste imenice (Stefanovski, 2007; Jovanović, 2017). Nisu toliko rasprostranjene kao složene imenice i glagoli u engleskom jeziku, a one koje se najviše upotrebljuju najčešće se grade putem kombinacije *imenica + glagol.*

Složeni pridevi se uglavnom semantički klasifikuju kao endocentrični. Prvi element predstavlja pridevsku dopunu i sintaksički se u engleskom jeziku pojavljuje ispred predloga, npr. *starved* for *something* (gladan nečega, prim. prev.). Tako složeni pridev *touch-starved* označava (u prenesenom smislu) da je neko gladan dodira, usled socijalnog distanciranja i zabrane fizičkog kontakta među prijateljima i kolegama. Po toj analogiji, potrošači koji su *shopping-starved* (gladni kupovine) mesecima su bili zatvoreni u svojim kućama i čekali da se prodavnice otvore, tako da sada mogu da se bace na kupovinu stvari koje im možda nisu ni potrebne.

Što se tiče pravopisa, u ovim izrazima se obično stavlja crtica da ne bi došlo do zabune ili višeznačnosti, ali se mogu naći i kao dve odvojene reči.

3.3 Glagolske složenice (složeni glagoli)

Kako kaže Bauer (1983: 105): „Složeni glagoli mogu nastati na tri različita načina: povratnim formiranjem (konverzijom) od imeničkih ili pridevskih složenica, nultom derivacijom od imeničkih složenica i ređe na isti način kao i drugi tipovi složenica, povezivanjem dve reči." U Tabeli 6 prikazan je proces konverzije, u kome se leksema iz jedne leksičke kategorije pretvara u leksemu iz neke druge leksičke kategorije bez promena u pisanju ili izgovoru:

Oblik	Funkcija: složena imenica	Funkcija: složeni glagol
doom-scrolling / doom-surfing	Daily *doom-scrolling* is bad for our mental health.	She has been *doom-scrolling* for hours; you need to take her phone away.
revenge shopping/ revenge spending	As expected, *revenge shopping* is happening, and store-owners are thrilled.	He's probably *revenge shopping* right now, so don't even bother; he won't pick up.

Tabela 6. *Dvostruka funkcija jedne iste složenice*

Ako uzmemo da je particip prezenta u navedenim primerima gerund (glagolska imenica), kombinacija koju dobijamo je *imenica + imenica*, a dobijena složenica funkcioniše kao imenica. Međutim, ako posmatramo oblik sadašnjeg participa *-ing* kao glagol, od kombinacije *imenica + glagol* dobijamo složeni glagol. Ovi glagoli se ponekad, pošto su izvedeni, nazivaju *pseudosloženi glagoli*, a konverzija u glagole smatra se najproduktivnijim vidom konverzije u engleskom jeziku.

Sa semantičkog gledišta, značenje složenih glagola, koji su uglavnom endocentrični, logički je vezano za značenje njihovih sastavnih delova. Što se tiče pravopisnih pravila, složeni glagoli mogu imati sva tri oblika: zatvoreni, sa crticom ili otvoreni. Bauer, međutim, primećuje da će „glagolske složenice verovatno biti napisane kao jedna reč ili sa crticom; mnogo ređe se javljaju kao dve zasebne reči nego kao imeničke složenice" (1983: 106).

4. ABREVIJACIJA

Tvorbeni proces abrevijacije (skraćivanja reči, engl. *clipping*) označava proces svođenja lekseme na jedan od njenih sastavnih delova izostavljanjem jednog ili više slogova, dok prvobitno značenje lekseme ostaje nepromenjeno. Bauer (1983) primećuje da skraćene nazive i abrevijacije obično koristimo kako bismo sugerisali da smo dobro upoznati sa licem ili pojmom na koji se imenica odnosi. Neka prozodijska pravila navode da višesložne lekseme imaju tendenciju da se skraćuju na jednosložne lekseme, ili na dvosložne umanjenice sa sufiksima *-y* ili *-ie* i s akcentom na prvom slogu. Međutim, iz primera koji sledi možemo videti da iako gubljenje fonetskih glasova dovodi do formiranja dvosložne reči (deminutiva) *Rona*, ona nema sufiksa *-y* ili *-ie*.

(12) *Corona* (or *coronavirus*) → *Rona, Miss Rona/ Gospođica Rona, The Rona*

Ovoj reči se može dodati određeni član ili prefiks *Miss*, koja pojmu virusa daje osobenost i komponentu humora. Neki deminutivi nastali abrevijacijom, posebno oni koji su karakteristični za dijalekat engleskog jezika koji se govori u Australiji, izazivaju osećaj pripadnosti zajednici i istovremeno nam popravljaju raspoloženje. Time se potvrđuje stav da

upotreba reči koje smo sami stvorili ili koje osećamo kao svoje može da nam bude podrška u stresnim situacijama. Neke od ovih reči prikazane su u primeru (13):

Pandemic (pandemija)	*pando*
Isolation (izolacija)	*iso*
Quarantine (karantin)	*quaz(zie)*
Sanitizer (sredstvo za dezinfekciju)	*sanny*
Positive (pozitivan na testu)	(testing) *pozzi*

Tabela 7. *Primeri (karakteristični za australijsku varijantu engleskog jezika) deminutiva nastalih skraćivanjem*

Abrevijacije takođe mogu biti komponente složenica, posebno onih imeničkih, kao što je prikazano u primeru (14):

a. *lockdown moustache*	*lockdown tache*
b. *female den*	*fem den*

Tabela 8. *Primeri abrevijacija kao elemenata složenih reči*

U primeru (14a), skraćuje se drugi element imeničke složenice, dok se u primeru (14b) skraćuje prvi element složenice.

U terminologiji koja se odnosi na pandemiju koronavirusa mogu se prepoznati dva glavna tipa abrevijacije. Najčešće se koristi abrevijacija poslednjeg dela lekseme ili finalna abrevijacija *(back-clipping),* u kome prvi deo lekseme ostaje netaknut (npr. *iso*lation). Drugi tip abrevijacije je abrevijacija prvog dela lekseme ili inicijalna abrevijacija *(fore-clipping),* u kome je očuvan poslednji deo prvobitne lekseme (npr. ~~mous~~*tache*). U retkim slučajevima, mogu se istovremeno primeniti oba procesa abrevijacije, što dovodi do skraćivanja i prvog i poslednjeg dela lekseme (*corona*virus). Neke od deminutivnih oblika prikazanih u primeru 13 ne uklapaju se u uobičajene kategorije abrevijacija, jer sadrže dodatna slova koja nisu deo originalnih leksema, i ovi oblici se mogu smatrati nepravilnim abrevijacijama, tj. *quaz* (quarantine- karantin) i *pozzi* (positive- pozitivan).

Abrevijacije se najčešće koriste u neformalnoj komunikaciji i slengu (nestandardnom jeziku), kojim se često izražava humor, kao poznati

mehanizam odbrane u stresnim situacijama. Ove reči su kraće i lakše za upotrebu, a osim toga su i smešne po značenju. Zbog toga je ovaj tvorbeni proces i dalje aktuelan, pogotovo tokom društvene krize koju je izazvala pandemija. Međutim, abrevijacije se i dalje uglavnom posmatraju kao skraćeni oblici zvaničnih, dužih leksema.

5. SLIVANJE (BLENDING)

Slivanje (engl. *blending*) jeste proces tvorbe novih reči (hibridnih oblika) od delova postojećih leksema. Stefanofski ističe „da je sažimanje, baš kao i abrevijacija, nepredvidiv, a takođe i hibridan proces koji podrazumeva najpre skraćivanje dve reči, a zatim sažimanje tih skraćenih delova u novu reč" (2007: 189). Slivenice se razlikuju od složenica po tome što su njihovi sastavni delovi zavisni, nemorfemski delovi leksema, što dalje ukazuje na nepredvidivost i neregularnost njihove tvorbe. Pod uticajem pandemije, došlo je do povećane produkcije novih slivenica. Najveći broj slivenica nastaje putem nekoliko tvorbenih procesa, kao što je prikazano u Tabeli 9:

Način tvorbe	Slivenice	Reči od kojih su nastale slivenice
Početak jedne reči vezuje se za kraj druge.	coronacation: coronarita: coronnials: infodemic: lockstalgia: quarantini:	**Corona**virus + va**cation**; **coron**avirus + marg**arita**; **coron**avirus + millen**nials**; **info**rmation + pan**demic**; **lock**down + no**stalgia**; **quaran**tine mar**tini**
Počeci dve reči sažeti su u jednu reč.	flexi-schooling: covexit:	**flexi**ble + **schooling**; **co**vid + **exit**
Dve reči se sažimaju putem zajedničkog niza glasova.	Blursday: covidiot: covidivorce: quaranteens: spendemic: walktail:	**blur**(red) + Tue**sday**/ Wedne**sday**/Th**ursday**; **covid** + **idiot**; **covid** + **divorce**; **quaran**tine + **teens**; **spend**ing + pa**ndemic**; **walk**ing + coc**ktail**

Tabela 9. *Različiti načini slivanja, sa primerima*

Kao što se vidi iz Tabele 9, pod uticajem pandemije došlo je do nastanka mnogih slivenica, koje obuhvataju i sinonime (*walktail/coronarita*, *covidiot/moronavirus*, *coronials/covidials*). Moguće je da će putem ovog tvorbenog procesa nastati još mnogo slivenica, ali ćemo tek videti da li će one biti dugog veka. Lekseme koje smo razmatrali u ovom radu su preuzete iz različitih izvora: između ostalog, iz onlajn članaka, novina, naslova, a ne samo iz rečnika. Dakle, možemo zaključiti da sve navedene slivenice nisu već „ozvaničene" niti opšte prihvaćene; stoga, stav autora je da treba sačekati i videti da koliko slivenica će zaista „opstati" na duže staze.

6. SKRAĆIVANJE

Proces skraćivanja (engl. *abbreviation*) podrazumeva objedinjavanje delova različitih reči, pri čemu se gubi jedan deo fonetskih i ortografskih elemenata (Izura & Playfoot, 2011). Skraćenice mogu biti napisane malim ili velikim slovima, i sastoje se od početnog slova, odnosno početnih slova svake lekseme koja čini jedan duži naziv ili složeni pojam. Skraćenice se mogu podeliti na dve grupe, prema pravilima pisanja i izgovora: prvu grupu čine inicijalizmi (slovne reči), koje se izgovaraju tako što se svako slovo izgovara kao zaseban glas, a drugu grupu *akronimi* –koji se izgovaraju i čitaju prema uobičajenim pravilima, kao redovne reči. Za ovu drugu grupu kao primer može poslužiti „zarazna bolest od koronavirusa 2019", kao i mnoštvo skraćenica koje se odnose na ovaj pojam, među kojima se izdvaja akronim kovid (COVID-19) iz naslova ovog rada.

Obe skraćenice, i *corona* i inicijalizam CV, već su postojeći termini koji su prvi put zabeleženi 1985, odnosno 1974. godine, a odnosili su se na druge koronaviruse. Soj virusa koji je odgovoran za nastanak novog koronavirusa poznat je pod nazivom *teški akutni respiratorni sindrom koronavirus 2,* mada se ovaj termin često zamenjuje skraćenicom *SARS-CoV-2*. Ova skraćenica se sastoji od lako izgovorljivog akronima *SARS* i hibridne forme *CoV,* u kojoj se element „Co" čita kao reč („ko") dok se slovo *V* čita kao „vi".

Stjuartova (Stewart, 2020) navodi u svom blogu na veb-sajtu Oksfordskog rečnika engleskog jezika da „iako je *COVID-19* zvanični naziv za bolest uzrokovanu koronavirusom *Sars-CoV-2,* termini *Covid*, *C-19*, *CV-19*, *CV*, i *corona* takođe se koriste za imenovanje virusa i bolesti".

Druge skraćenice koje se koriste su *2019-nCoV* (*the 2019 novel corona-virus*), kao i *HCoV-19* (*human coronavirus 2019*). Ove složene skraćeni-ce sastoje se iz više delova, te se iz tog razloga koristi crtica koja razdvaja elemente, odnosno patogen (*SARS*), bolest (*COVID*) i godinu (*2019*). Sve gore pomenute skraćenice koje se odnose na istu pojavu ukazuju na produktivnost i kompleksnost ovog tvorbenog procesa tokom trajanja pandemije. Pod uticajem pandemije koronavirusa, povećana je i upo-treba sledećih skraćenica, prikazanih u primeru (15):

a.WFH– Work(ing) from home (rad od kuće)
   PUI– Person (or patient) under investigation (pacijent na ispitivanju)
   PPE – Personal protective equipment (lična zaštitna oprema)

b.OSHA – Occupational Safety and Health Administration (agencija za zdravlje i zaštitu na radu)   ARDS – Acute respiratory distress syndrome (akutni respiratorni distres sindrom)

Tabela 10. *Primeri skraćenica nastalih usled pandemije koronavirusa*

Skraćenice prikazane u primeru (15) nisu novonastale, ali je zapa-žena njihova povećana upotreba tokom pandemije. Obe grupe skraćeni-ca, i inicijalizmi (15a) i akronimi (15b), pokazuju da postoji tendencija da se skraćenice pišu velikim slovima. Većina pripada oblasti medicine: medicinski radnici koriste ove skraćenice kako bi javnost informisali o kovidu 19 i posledicama koje ostavlja po zdravlje, kao i o načinima lečenja.

Često dolazi do skraćivanja brojnih termina radi lakše komunika-cije. Kako Stjuartova (Stewart, 2020) zaključuje u svom blogu, „nikada kao danas nije bilo toliko značajno da se složene ideje i teme jasno i precizno saopštavaju javnosti. Oksfordski rečnik engleskog jezika (OED) ima nameru da i dalje precizno beleži zastupljenost ovih termina i da prati kako oni prelaze iz naučnog diskursa u medije i na društvene mreže.“

7. ZAKLJUČAK

U ovom radu razmatra se sve veći priliv novih termina, koji se zatim analiziraju prema načinu nastanka, tj. tvorbenim procesima. Afiksacija, slaganje i sažimanje su najproduktivniji tvorbeni procesi, zatim slede abrevijacija i skraćivanje. Putem ovih procesa ispunjava se glavni cilj leksičke tvorbe, a to je bogaćenje leksikona engleskog jezika.

U nekoj društvenoj krizi, kao što je pandemija, obično želimo da ostanemo u kontaktu sa drugim ljudima jer nam to pruža utehu i sigurnost i daje snagu da se suočimo sa teškoćama. Stoga gledamo vesti i pretražujemo internet, gde se susrećemo sa mnoštvom novih izraza, skraćenica i reči koje se dotiču svakog aspekta života. Ipak, mi sami ćemo doneti konačnu odluku o tome koji će termini nastali pod uticajem pandemije koronavirusa opstati. Neki novi termini će biti kratkog veka i ostaće zabeleženi samo u onlajn i urbanim rečnicima, dok će drugi bez sumnje opstati i prilagoditi se jezičkom sistemu. U ovoj drugoj grupi su termini koji imaju referenta koji pobuđuje veliko interesovanje javnosti, kako pozitivno tako i negativno, tako da postoji veća verovatnoća da će pojmovi iz ove grupe ostati relevantni, čak i ukoliko pretrpe semantičku promenu.

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Biljana Naumoska-Sarakinska[1]

TAKING STOCK OF THE ENGLISH WORD STOCK: THE RISE AND EXPANSION OF COVID-19-INSPIRED TERMINOLOGY

Abstract: In just less than two years, the COVID-19 pandemic has managed to leave a mark on a number of areas of life and fields of study, and linguistics has not been exempted. As everyone deals with the 'new normal' brought about and shaped by the pandemic, we have had to rise to the challenge of deciding how to talk about the influence of the virus on our day-to-day lives. The constant changes that are occurring in medicine, politics, education, entertainment, among others, reflect the need for a greater use of already-existing lexemes, as well as new terminology that will help us make sense of those societal changes.

The English vocabulary is a work in progress, and the lexeme formation processes that occur are intensified by our online presence during the months-long lockdowns, quarantines, and restrictions. People's creativity during online communication has resulted in many new terms and phrases, some of which have already been noted in online dictionaries – from the *Oxford University Press* and the *Cambridge University Press*, to *Macmillan* and *Merriam-Webster*. The lexemes looked at in this paper have been taken from a variety of mainly online sources, however, not just from the said dictionaries.

This paper will take a closer look at the meaning and function of these increasingly used lexemes, as well as the processes that have taken place in their creation, such as affixation (*zoomwear*), compounding (*social bubble*), clipping (*isolation*), blending (*covidiot*), and abbreviation (*WFH – working from home*).

Key words: lexeme formation (processes), (derivational) neologisms, productivity

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1. INTRODUCTION

The coronavirus pandemic has greatly impacted the English lexicon, which is very open to various linguistic innovations. The instant global connection that social media offers and the limited face-to-face interaction have been instrumental in the spread of COVID-19 terminology, allowing for new terms to be coined in all areas of society. Linguistic creativity has become evident where COVID-19 is concerned; forming new vocabulary with a collective cultural reference unites people and provides a communal sense of relief.

Lexeme formation in any language results in a richer vocabulary, further affirming that particular language. Bauer notes that it "deals with the formation of new lexemes" (1983: 33), while Yule says it is "the study of the processes whereby new words come into being in a language" (1996: 64). Though primary lexeme formation[2] allows spontaneity, secondary lexeme formation is usually connected to convention and influence. The new terms that appear are created to refer to already-existing terms to which they have to adjust.

This paper looks at COVID-19-inspired terminology, chosen arbitrarily from a variety of mainly online sources, the productivity of affixation, compounding, blending, and conversion, and discusses lexeme formation processes that Bauer (1983) considers unpredictable - clipping and abbreviation. The complexity of some of the newly-formed lexemes reveals that some processes are interrelated and can work together to fulfil the aims of lexeme formation in modern English.

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[2] The distinction we make between primary and secondary lexeme formation is that the former refers to the arbitrary creation of root morphemes/lexemes, i.e., lexemes not derived, compounded, or developed from other, existing lexemes (neologisms), while the latter refers to motivated lexeme formation, and, as such, refers to the creation of complex lexemes (derivational neologisms), i.e., lexemes formed on the basis of other lexemes or morphemes.

2. AFFIXATION

Affixation creates new lexemes out of already-existing ones by adding one or more derivational affixes before or after the root or the stem (Stefanovski, 2007). The root can be a whole lexeme or part of a lexeme that represents the smallest meaningful unit that cannot be reduced into smaller units.

Table 1 below presents the productivity of different prefixes and suffixes in COVID-19-inspired terminology:

Prefix		Base	Suffix	Derivative
anti-		fit	-	anti-fit
anti-		mask	-er	anti-masker
anti-		natal	-ism	anti-natalism
-		cottage	-core	cottagecore
-		fear	-ware	fearware
super-	fore-	cast	-er	superforecaster
tele-		therapy	-	teletherapy
-		zoom	-wear	zoomwear

Table 1. *Examples of affixation in COVID-19-inspired terminology*

Attaching bound morphemes to the front of a root or stem is known as *prefixation*. Stefanovski notes that "English prefixes have an exclusively lexical (derivational) role, allowing the construction of a large number of new words in the English lexicon" (2007: 139). The majority of prefixes in English are class-maintaining; this is why we look at their semantic rather than their syntactic role here. Some productive class-maintaining prefixes that appear in COVID-19-inspired terminology are illustrated in the following examples:

(1)   anti- : [X]n – [antiX]n; 'against X' – *orientation*   *anti*-fit (against a proper fit that follows the shape of one's body)
(2)   fore- : [X]n – [foreX]n; 'before X' – *time and space*   *fore*caster (a person who predicts/estimates something ahead of time)
super- : [X] – [superX]; 'above, beyond X' – *time and space* *super*forecaster (a person whose job is to accurately predict the mortality rate and the total number of COVID-19 infected a year from now)
(3) tele- : [X] – [teleX]; 'at a distance' – *time and space*   *tele*therapy (using videoconferencing tools as a safer way for therapists to treat patients during social distancing)

Table 2. *Some productive class-maintaining prefixes in COVID-19-inspired terminology*

The examples in (2) show that a lexeme can undergo derivation more than once until it reaches the form necessary to express the meaning it is intended to. This allows for the creation of many new context-specific derivatives.

Suffixation is when a bound morpheme is attached to the end of a stem (Stefanovski, 2007). Unlike prefixes, which are generally class-maintaining and have to do with grammatical meaning, suffixes are usually class-changing. As their primary function is to change the stem's grammatical properties, they should be classified syntactically and sub-classified semantically. On this account, suffixes can be classified as class-maintaining or class-changing, with further division of the lexical category of the base (denominal, deverbal, or deadjectival, respectively) and the derivative (generally a noun, verb, or adjective). This classification can be explored through the following suffixes:

(4)   -er : [X]v – [Xer]n; 'one who Xs', 'engaged in X (if [X]n)' *class-changing, deverbal nominal (V-N)* e.g. anti-masker
(5)   -ism : [X]adj – [Xism]n; 'denoting Xism', 'belief in Xism' *class-changing, deadjectival nominal (Adj-N)* e.g. anti-natalism
(6)   -core : [X]n – [Xcore]n; 'very into X', 'X to the heart' *class-maintaining, denominal nominal (N-N)* e.g. cottagecore, also farmcore or countrycore
(7)   ware : [X]n – [Xware]n; 'classifying X', 'X used for a particular purpose' *class-maintaining, denominal nominal (N-N)* e.g.fearware
(8)   -wear : [X]n – [Xwear]n; 'a particular type of clothing associated with X' *class-maintaining, denominal nominal (N-N)* e.g. zoomwear

Table 3. *Some productive suffixes in COVID-19-inspired terminology*

The productive suffix *–er* in (4) is a deverbal nominal – its base is a verb, and its derivatives are nouns. The deadjectival nominal *–ism* in (5) uses an adjective to create a (then-prefixed) noun referring to a philosophy that discusses the issue of overpopulation and the jeopardy of two, if not more lives during a pandemic. On the other hand, (6), (7), and (8) are all examples of class-maintaining suffixes that use a noun

base and result in noun derivatives. Furthermore, these suffixes have specific meaning only in limited contexts, so they can be referred to as *suffixoids*, traditionally lexeme-final segments with the characteristics of both free and bound morphemes. The suffix *–core* in (6) usually denotes a type, genre, or sub-category, but can also refer to different types of aesthetics that centre around idealized concepts – *naturecore*, *goblincore*, *metalcore*, etc. The suffix *–ware* is perhaps most productive in IT terminology, referring to programs executed by a computer. Similarly, to the mass noun *malware* (a malicious *software*), *fearware* is designed by cyber attackers to cause damage to systems or gain unauthorized access to one's data. The example in (8) makes use of the suffix *–wear*, which combines with nouns and adjectives to form derivative nouns that refer to a specific type of clothing (e.g., *outerwear*, *menswear*, *footwear,* etc.). *Zoomwear* has become popular with the transition from real meetings and classes to ones on the video conferencing platform Zoom. People in *zoomwear* have an office attire above the waist, but something more comfortable down below, out of the webcam's reach.

3. COMPOUNDING

Compounding combines two or more free base forms to form new lexical items - compounds. Stefanovski (2007: 163) says that "compounds resemble syntactic expressions in that the units combined also always exist independently as words – that is they are complete both phonologically and semantically". Compounds may or may not be similar in meaning to their isolated constituents, and their components may or may not belong to the same lexical category.

Many terms that have emerged during this period have made use of compounding, as it is easier for people to combine already-existing lexemes, rather than try to coin new ones that have not been previously encountered. Though compounds may not necessarily be new, their recently acquired meaning may be.

For example, if one were not familiar with the video conferencing service Zoom, they would be unable to guess the meaning of *Zoombombing* - an intrusion into online events by internet trolls that join

uninvited. There are serious legal implications for those that behave in a distasteful and offensive manner, hence the second part of the compound is labelled *bombing* (akin to *photobombing*). Though Zoom was founded in 2011, it was in March 2020 that this term became popular, with most intrusions ensuing during students' online classes on the platform. In addition, both *shopping-starved* and *revenge spending* consist of lexemes that are not unfamiliar. However, their compound meaning corresponds to recent notions – people may be *shopping-starved* due to their inability to physically visit stores during quarantine, which is why they will then resort to *revenge spending*, i.e., the anticipated flood of purchases made post-lockdown.

Many other compounds have found their way into people's current vocabulary. Most of the compounds consist of two nouns; the combination *noun + noun* is common, but not exclusive. Table 2 below exemplifies instances of other combinations:

	noun (N) (2nd element)	*adjective* (Adj) (2nd element)	*verb* (V) (2nd element)
noun (N) (1st element)	cleanliness theatre, corona corridor, coronababies, coronavision, lockdown tache, quarantine and chill, Zoom mom	shopping-starved, touch-starved	doom-scrolling, doom-surfing, revenge shopping, revenge spending
adjective (Adj) (1st element)	digital nutrition, double bubble, long covid, social bubble		

Table 4. *Constituent elements of compounds, with examples*

From Table 4, we also see the following patterns: *noun + noun*, *adjective + noun*, *noun + adjective*, and *noun + verb*. As compounds are typically classified according to their function in the sentence, the patterns of components in line with their lexical category indicate a sub-classification of compounds. Concerning the syntactic classification of compounds, there are three major types of compounds that correspond to three major lexical categories: compound nouns, compound adjectives, and compound verbs.

3.1 Compound nouns

Compound nouns consist of two or more lexemes that combine into a single noun, and they are typically formed with nouns modified by adjectives, verbs, or other nouns. Bauer (1983: 185) observes that noun compounds, especially the *noun + noun* combination, are the most common type of compounds in English. He also notes that "the vast majority of noun-noun compounds are right-headed, i.e., they have a head and this head is the right member of the compound". Syntactically, the head properties are transferred to the whole compound, thus, if the head is a noun, the compound will be a compound noun. This can be seen in the following:

(9) a. *coronababies*
lockdown tache
b. *long covid*
(10) a. *cleanliness theatre*
b. *double bubble*
digital nutrition
(11) *quarantine and chill*

Table 5. *Examples of COVID-inspired compound nouns*

Semantically, in an *endocentric* compound its members A+B denote a special kind of B, i.e., the head determines the general lexical category that contains the meaning of the compound. Thus, *coronababies* = babies conceived during quarantine, and *lockdown tache* = a (mous) tache grown during lockdown. The endocentric forms in (9a) consist of two nouns, whereas the compound noun in (9b) has an adjective that modifies the head noun, and it refers to the lasting effects and symptoms of the disease.

The *Oxford English Dictionary* recognizes the general use of *COVID-19*, the shortened form of the compound *coronavirus disease 2019,* as a modifier of nouns in many compounds. A *COVID-19 case*, *COVID-19 test*, *COVID-19 virus*, etc., have all become commonplace.

The members A+B in the compounds in (10) result in a special kind of an unexpressed semantic head that holds the meaning of the compound. These compounds are *exocentric*. The *noun + noun* compound in (10a) does not refer to an actual theatre known for its cleanliness, but to the phenomenon of ensuring that people see the virus countermeasures in place so they can feel safer. The *adjective + noun* compounds in (10b) are also exocentric. *Double bubble* has nothing to do with a bubble, but with people from two separate households being allowed to see each other with the gradual ease of restrictions, and *digital nutrition* signifies the process of making sure one's increased use of electronic devices is not harmful to their physical and mental health.

The compound in (11) represents another semantic type of compounds with two semantic heads with no required dependency between them, i.e. A+B denotes 'the sum' of what A and B denote. A *copulative* compound, as *quarantine and chill,* describes two activities that happen at the same time, i.e., being quarantined and chilling with someone, especially a romantic/sexual partner.

Orthography-wise, Adams (1973: 59) notes that "compounds may be written as one [closed or solid] word, as two hyphenated words, or as two [open or spaced] separate words, sometimes regardless of the degree of unity that may be felt between the elements". Writing a compound may vary, though, as these words are rather recent creations.

3.2 Compound adjectives

Compound adjectives are formed when at least two lexemes are combined to modify the same noun (Stefanovski, 2007; Jovanović, 2017). They are not as widespread as compound nouns and verbs in English, and those that are in use are most frequently formed by a *noun + verb* combination.

Generally, compound adjectives are endocentric concerning their semantic classification. The first element is said to satisfy an argument position of the adjective. Syntactically, this argument appears next to a preposition, as for example, starved *for* something. In this way, the

compound adjective *touch-starved* = a metaphorical starvation for touch, as we practice social distancing, with physical contact among friends and colleagues being off limits. Along the same lines, *shopping-starved* consumers have spent months locked up at home, waiting for stores to open, so they can splurge on things they might not even need.

Spelling-wise, these terms are usually hyphenated to avoid ambiguity or confusion, but they can also be found as two separate words.

3.3 Compound verbs

As Bauer says (1983: 105), "compound verbs may arise in three different ways: by backformation from noun or adjective compounds, by zero derivation from noun compounds and, less often, in the same way as other types of compounds, by linking two words together". In Table 6 below we note the process of *conversion*, through which a lexeme of one lexical category converts into a lexeme of another lexical category with no changes in spelling or pronunciation:

Form	Function: compound noun	Function: compound verb
doom-scrolling / doom-surfing	Daily *doom-scrolling* is bad for our mental health.	She has been *doom-scrolling* for hours; you need to take her phone away.
revenge shopping/ revenge spending	As expected, *revenge shopping* is happening, and store-owners are thrilled.	He's probably *revenge shopping* right now, so don't even bother; he won't pick up.

Table 6. *The double function of one and the same compound form*

If we take the present participle form in the examples as a gerund, the constituent combination will be *noun + noun*, and the compound will function as a noun. However, if we regard the *–ing* form as a verb,

the *noun + verb* combination will result in a compound verb. Due to their derivational nature, these verbs are sometimes called *pseudo-compound* verbs, and their conversion is considered the most productive form of conversion in English.

From a semantic perspective, the meaning of compound verbs, which are endocentric for the most part, can be deduced from the meaning of their components. Concerning orthography, compound verbs can be found in all three forms: closed, hyphenated, or open. Bauer notes, though, that "verb compounds are likely to be written solid or hyphenated; they appear as two separate words much less often than noun compounds" (1983: 106).

4. CLIPPING - TIJANA

Clipping reduces a lexeme to one of its parts by dropping one or more syllables, while the lexeme's original meaning remains. Bauer (1983) notes that truncated names and clippings are usually used to overtly express familiarity to a thing or person that we want to refer to. Some prosodic rules suggest that polysyllabic lexemes tend to be reduced to a monosyllabic truncation, or a disyllabic *-y/-ie-* diminutive with stress on the first syllable. However, from the following examples we can see that the phonetic loss of material results in the disyllabic *Rona*, devoid of the *–y* or *-ie suffix*:

(12)   *Corona* (or *coronavirus*) → *Rona*, *Miss Rona, The Rona*

Additionally, this clipping can be compounded with the definite article or the prefix *Miss,* which adds attitude and humor attributed to the virus. Some diminutive clippings, especially typical of Australian English, provide a sense of community and lighten the mood at the same time, supporting the view that using words we have created or feel some sense of ownership with can help us feel empowered in uncertain situations, as in (13):

pandemic	*pando*
isolation	*iso*
quarantine	*quaz(zie)*
sanitizer	*sanny*
positive	(testing) *pozzi*

Table 7. *Examples of (typically Australian English) diminutive clippings*

Clippings can also be found as elements of compounds, namely compound nouns, as in (14):

a. *lockdown moustache*	*lockdown tache*
b. *female den*	*fem den*

Table 8. *Examples of clippings as elements of compound words*

In (14a), it is the second element of the compound noun that undergoes clipping, while (14b) clips the first member of the compound.

Two main types of clippings are found in COVID-19-related terminology. The most common type is *final* or *back-clipping*, which leaves the beginning of the lexeme intact (e.g. *isolation*), and *initial* or *fore-clipping*, which retains the final part of the prototype (e.g. *moustache*). Rarely, both the front and the end parts can be clipped, resulting in both-end clipping (*coronavirus*). Some of the diminutive forms in (13) do not fit into the conventional types of clippings, containing extra letters that do not occur in the original lexemes, and they may be regarded as 'irregular' clippings, i.e., *quaz* (quarantine) and *pozzi* (positive).

Clippings are most often found in informal communication and slang, which often expresses humour, a well-known coping mechanism. They are short, practical, and funny, which is why this process of lexeme formation endures, especially during a social crisis. However, clippings are still most likely to be seen as reduced forms of their legitimate and longer counterparts.

5. BLENDING

Blending involves creating hybrid forms from parts of already-existing lexemes. Stefanovski points out that "like clipping, blending is unpredictable, and it is a hybrid one because it consists first of clipping of two words and then of blending the left-overs into a third one" (2007: 189). Blends differ from compounds in that their component elements are non-morphemic parts of lexemes, which points to their unpredictability and irregularity. The pandemic has resulted in an increased productivity of blending, and most blends can be formed in a few different ways, as shown below:

Method	Blend	Constituent words
The beginning of one word is attached to the end of the other	coronacation: coronarita: coronnials: infodemic: lockstalgia: quarantini:	coronavirus + vacation; coronavirus + margarita; coronavirus + millennials; information + pandemic; lockdown + nostalgia; quarantine + martini
The beginnings of two words are blended	flexi-schooling: covexit:	flexible + schooling; covid + exit
Two words are blended around a common sound sequence	Blursday: covidiot: covidivorce: quaranteens: spendemic: walktail:	blur(red) + Tuesday/ Wednesday/Thursday; covid + idiot; covid + divorce; quarantine + teens; spending + pandemic; walking + cocktail

Table 9. *Different methods of blending, with examples*

Table 9 illustrates that the pandemic has facilitated the creation of many blends, including synonyms (*walktail/coronarita*, *covidiot/moronavirus*, *coronials/covidials*). The process of blending may produce even more blends in the future, but we shall see whether they will be long-lasting. The lexemes looked at in this article have been taken from various sources, online articles, newspapers, headlines, among others, not just from dictionaries, and as such, we may note that not all have already been 'institutionalized', hence, our approach to wait and see how many will actually 'survive' in the long run.

6. ABBREVIATION

Abbreviations are shortenings that unite parts of different lexemes, involving a loss of phonetic and orthographic material (Izura and Playfoot, 2011). They can be spelled in either lower-case or capital letters, and they consist of the initial letter(s) of each lexeme of a longer name or compound term. They are grouped according to two properties regarding spelling and pronunciation – *initialisms* (*letter words*) - pronounced by naming each letter, and *acronyms* - following regular reading rules and pronounced as a normal lexeme. In the context of pronounceable abbreviations, an example can be made with the *Coronavirus disease 2019* and its multiplicity of abbreviations, specifically the titular acronym *COVID*.

Both *corona* and the initialism *CV* are already-existing terms observed in 1985 and 1974 respectively, in reference to other coronaviruses. The strain of the virus responsible for the novel coronavirus is known as *Severe Acute Respiratory Syndrome Coronavirus 2,* although the frequently referenced term is often replaced with the abbreviation *SARS-CoV-2*. This abbreviation consists of the pronounceable acronym *SARS* and the hybrid form *CoV,* in which *Co* is read as a word and the letter *V* is spelled out.

As Stewart notes in her public *Oxford English Dictionary* blog (2020), "while the official name for the disease caused by the coronavirus *Sars-CoV-2* is *COVID-19*, the terms *Covid*, *C-19*, *CV-19*, *CV*, and corona are also used to refer to the virus and the disease". Other abbreviations include *2019-nCoV* (for the *2019 novel coronavirus*), as well as *HCoV-19* (*human coronavirus 2019*). These abbreviations are complex and consist of several parts, so a hyphen is used to separate the constituents, namely the pathogen (*SARS*), the disease (*COVID*), and the year (*2019*). All of the abovementioned abbreviations that refer to the same phenomenon point to the productivity and complexity of this process of lexeme formation during the pandemic.

The COVID-19 pandemic is also responsible for increased usage of the following abbreviations, as in (15):

| a. WFH – Work(ing) from home |
| PUI – Person (or patient) under investigation |
| PPE – Personal protective equipment |
| b. OSHA – Occupational Safety and Health Administration |
| ARDS – Acute respiratory distress syndrome |

Table 10. *Examples of COVID-inspired abbreviations*

The examples in (15) are not newly-coined, but they have been noted for their increased usage. Both the initialisms (15a) and the acronyms (15b) demonstrate the tendency of abbreviations to be written in capital letters. Most of these belong to the medical field; medical professionals use this process to broaden the public's knowledge of COVID-19 and its effects, as well as any methods of treatment. A number of terms are often abbreviated for ease of communication, and, as Stewart (2020) concludes in her blog, "the need for accurate communication of complex ideas and topics has never been greater, and the OED will continue to update its coverage of these specialist terms, charting their passing from scientific journals to newspapers and social media".

7. CONCLUSION

This paper looks at the increasing influx of terms, analysing them through different lexeme formation processes. Affixation, compounding and blending are the most productive, followed by clipping and abbreviation. These processes work together to fulfil the central aim of lexeme formation – enriching the English lexicon.

In a social crisis, we wish to stay connected to avoid uncertainty, and to find comfort and strength to deal with the challenges we are faced with. So, we watch the news and browse the internet, which are flooded with new lingo, abbreviations and words that touch on every aspect of life. We shall ultimately decide the longevity of COVID-19-inspired terminology; some of the newly-created terms will be short-lived and only noted in online and urban dictionaries; others will undoubtedly remain, and adapt. The latter group has a referent which excites popular interest, both positive and negative, so these are more likely to stay relevant, even if they do undergo semantic change.

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KARAKTERISTIČNI OBLICI ZLOUPOTREBA U SAJBER PROSTORU TOKOM PANDEMIJE VIRUSA COVID-19

Sažetak: Predmet istraživanja odnosi se na karakteristične oblike zloupotreba u sajber prostoru za vreme pandemije. U radu je ustanovljeno da su neki od najčešćih oblika zloupotreba povezani sa fišingom u vezi s elektronskom poštom, krađom kredencijala korisnika, fišingom preko sms poruka, distribucijom malvera, kao i sa komunikacionim platformama. Utvrđeno je da mere sajber higijene za vreme pandemije COVID-19 moraju biti unapređene i efikasnije sprovođene. Takođe, istraživanje je pokazalo da je neophodno unapređenje važeće pravne regulative ne samo na nacionalnom nivou već i na međunarodnom nivou. U radu su korišćeni normativni metod, kao i pravno-logički metodi indukcije i dedukcije.

Ključne reči: pravo, bezbednost, sajber prostor, COVID-19, fišing

1. Uvod

Pandemija izazvana virusom COVID-19 potresla je ceo svet i izazvala brojne posledice i veliki gubitak ljudskih života. Pored svih problema izazvanih pandemijom COVID-19, treba istaći i probleme u saj-

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ber prostoru, koji poprimaju sve ozbiljnije razmere. Istina, problemi u sajber prostoru nisu nova stvar, oni postoje od samog početka razvoja interneta i informaciono-komunikacionih tehnologija. Ubrzana digitalizacija i sve šira primena savremenih tehnologija dodatno su povećale nivo opasnosti po stanovništvo, privredu i javni sektor širom sveta.

S tim u vezi, aktuelna pandemija izazvana virusom COVID-19 sa sobom nosi ne samo zdravstvene izazove već i zloupotrebe u vezi sa zaštitom ličnih podataka. Prema Đukiću (2017, str. 99), one se „ogledaju u narušavanju poverljivosti informacija, ometanju njihove funkcionalnosti kroz narušavanje poslovanja između njih, uzurpaciji i krađi intelektualne svojine, raznim vrstama drugih krađa i prevara, kao i brojnim zloupotrebama koje se razlikuju po motivima, ciljevima, metodama i načinima postizanja". Kako navodi Petrović (2004), „pojam krađe u vezi sa informaciono-komunikacionim tehnologijama, pored krađe koja se vrši krađom informaciono-komunikacionih uređaja i njihovih komponenti, obuhvata krađu različite robe, krađu računarskih usluga, krađu podataka, krađu kodova, lozinki i identifikacionih brojeva i identiteta" (str. 133).

Tokom pandemije izazvane virusom COVID-19, registrovan je veliki broj različitih vrsta sajber prevara, kao što su oblici zloupotrebe vezani za fišing e-pošte, krađu korisničkih kredencijala, fišing uz pomoć SMS-a, distribuciju malvera i komunikacione platforme, kao što je Zoom aplikacija. Poseban problem predstavljale su društvene mreže koje su se pokazale kao plodno tlo za razne sajber prevare. Prema T. Skakavac (2020) „ne treba zanemariti negativne posledice korišćenja različitih društvenih mreža, posebno od strane maloletnika. Iako su korisnici mnogih društvenih mreža različiti po polu, godinama, obrazovanju i sl., ove mreže imaju najveći uticaj na mlade. Mladi su radoznali, željni novih izazova i svih savremenih modaliteta razvoja informacionih tehnologija i vrlo lako postaju njihovi stalni saputnici i klijenti" (str. 85).

Kada je reč o fišingu, može se reći da je ova vrsta sajber prevara posebno aktuelna tokom pandemije. Kako Grejdon (2006) navodi, termin „fišing" „dolazi iz analogije da prevaranti koriste e-poštu kao mamac za ribu za profitabilne lične podatke iz nesvesnog mora internet korisnika" (str. 335, 337). Prema Domazetu i Skakavcu (2019) „u ranim fazama fišinga, izvršioci su koristili relativno jednostavne metode prevare, tako da su fišing mejlovi bili relativno lako prepoznatljivi (na primer, sadržali su brojne gramatičke i

pravopisne greške), dok je danas fišing evoluirao i postao mnogo složeniji i sofisticiraniji, uključujući brojna napredna softverska rešenja za prikrivanje za dobijanje osetljivih (ličnih) podataka" (str. 191).

Šteta od fišing napada stalno se povećava. Prema Đukiću (2017, str. 110) „samo u 2015. godini u svetu je registrovano oko 147 miliona fišing napada, od kojih je Rusija pretrpela najviše napada (17,8%), dok su SAD bile najbolji 'domaćin' napadačima, a najviše napada izvršeno je sa njene teritorije (15,2%). Po meti, fišing napadi su uglavnom bili usmereni na onlajn finansijske institucije (banke, sisteme plaćanja i onlajn prodavnice)". Kako su izjavili Gudkova, Vergelis, Shcherbakova (2018) „u 2016. registrovano je preko 154 miliona fišing napada, pri čemu je Brazil pretrpeo najviše napada, a preko 12% napada potiče iz Sjedinjenih Država. U 2017. zabeleženo je preko 246 miliona napada, a najveći izvor napada ostale su ove godine Sjedinjene Američke Države (sa učešćem od 13,21%). Malver koji se najčešće koristi zove se *Trojan-Downloader. JS.Sload*". Prema Izveštaju Agencije Evropske unije za sajber bezbednost (ENISA) iz 2021, „COVID-19 je stvorio prilike za sajber kriminalce". Društveni inženjering ostaje najrasprostranjenija tehnika napada. Sajber kriminalci su iskorišćavali interese, zabrinutost, radoznalost i strah ljudi koristeći mamce za krađu identiteta tokom pandemije COVID-19 i u vezi sa njom za finansijsku dobit.

Predmet istraživanja odnosi se na karakteristične oblike zlostavljanja u sajber prostoru tokom pandemije. U tekstu koji sledi prvo ćemo govoriti o pravnoj regulativi Evropske unije u oblasti fišinga, a zatim analizirati karakteristične primere zloupotrebe u sajber prostoru tokom pandemije COVID-19. U istraživanju će se koristiti normativni metod, kao i pravno-logički metodi indukcije i dedukcije.

2. Pravna regulativa u pogledu fišinga u Evropskoj uniji

U oblasti sajber bezbednosti na nivou Evropske unije još uvek ne postoji „krovni" propis koji bi regulisao ovu materiju, pa se zakonodavstvo u ovoj oblasti sastoji od više različitih pravnih akata. Prema Domazetu (2019), najvažniji propisi koji se tiču sajber bezbednosti u Evropskoj uniji jesu: Okvirna odluka Saveta 2001/413/JHA od 28. maja

2001. o borbi protiv prevare i falsifikovanja bezgotovinskih sredstava plaćanja, Direktiva (EU) 2016/1148 Evropskog parlamenta i Saveta od 6. jula 2016. o merama za visoki zajednički nivo bezbednosti mrežnih i informacionih sistema širom Unije, Direktiva 2013/40/EU Evropskog parlamenta i Saveta od 12. avgusta 2013. o napadima na informacione sisteme i zameni Okvirne odluke Saveta 2005/222/JHA, Uredba (EU) br. 526/2013 Evropskog parlamenta i Saveta od 21. maja 2013. godine u vezi sa Agencijom Evropske unije za mrežnu i informacionu bezbednost (ENISA) i ukidanjem Uredbe (EZ) br. 460/2004 (Tekst od značaja za EEA), Direktiva 2009/136/EC Evropskog parlamenta i Saveta od 25. novembra 2009. o izmenama i dopunama Direktive 2002/22/EC o univerzalnim uslugama i pravima korisnika u vezi sa elektronskim komunikacionim mrežama i uslugama, Direktiva 2002/58/EC o obradi ličnih podataka i zaštiti privatnosti u sektoru elektronskih komunikacija, Uredba (EC) br. 2006/2004 o saradnji između nacionalnih organa nadležnih za sprovođenje zakona o zaštiti potrošača, Saopštenje Komisije od 15. novembra 2006. Evropskom parlamentu, Savetu, Evropskom ekonomskom i socijalnom komitetu i Komitetu regiona za borbu protiv neželjene pošte, špijunskog softvera i zlonamernog softvera, Direktiva 2005/29/EC Evropskog parlamenta i Saveta od 11. maja 2005. godine o nepoštenoj poslovnoj praksi između preduzeća i potrošača na unutrašnjem tržištu i o izmenama i dopunama Direktive Saveta 84/450/EEC, Direktiva 97/7/EC, 98/ 27/EC i 2002/65/EC Evropskog parlamenta i Saveta i Uredba (EZ) br. 2006/2004 Evropskog parlamenta i Saveta („Direktiva o nepoštenoj poslovnoj praksi"), Direktiva 2002/58/EC Evropskog parlamenta i Saveta od 12. jula 2002. u vezi sa obradom ličnih podataka i zaštitom privatnosti u sektoru elektronskih komunikacija (Direktiva o privatnosti i elektronskim komunikacijama), Uredba (EU) 2016/679 Evropskog parlamenta i Saveta od 27. aprila 2016. o zaštiti fizičkih lica u vezi sa obradom ličnih podataka i o slobodnom kretanju takvih podataka i stavljanju van snage Direktive 95/46/EC (Opšta uredba o zaštiti podataka – dalje: GDPR). U vezi sa pandemijom izazvanom virusom COVID-19, Evropska unija je donela čitav set novih akata, nastojeći da što efikasnije pravno reguliše izazove, a ova sveobuhvatna baza propisa se redovno ažurira.[3]

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[3] Spisak propisa Evropske unije u vezi sa pandemijom izazvanom virusom

Međutim, treba napomenuti da je specifična situacija sa pandemijom dovela do nekih zakonskih rešenja koja bi mogla da naruše normalno funkcionisanje demokratskog sistema i ostvarivanje sloboda i prava građana.

Prema Savetu Evrope (2020), na primer, države članice EU koje su potpisnice Konvencije za zaštitu pojedinaca u pogledu obrade ličnih podataka (u daljem tekstu: Konvencija 108+) usvojile su odredbe kojima se ograničavaju određene slobode i prava. U skladu sa Izveštajem Saveta Evrope o zaštiti podataka iz 2020. godine, mogu se identifikovati tri glavna pristupa: 1) usvajanje opštih hitnih mera dajući vladi posebna ovlašćenja (posebno na osnovu zakona ili uredbi, u primeni ustavnog zakona); 2) donošenje hitnih mera u određenim sektorima, često zasnovanih na propisima javnog zdravlja ili pandemije; 3) donošenje hitnih mera bez posebne zakonske osnove. Ovi različiti pristupi doveli su do mnoštva odredbi u 55 zemalja potpisnica Konvencije 108. Većina odredaba daje velika ovlašćenja vladama, iako obično samo u ograničenom vremenskom periodu. U istom izveštaju se navodi da, iako takve mere mogu biti veoma invazivne i predstavljaju važna ograničenja za osnovna prava (privatnost, zaštita podataka, ali i sloboda kretanja i okupljanja, a u nekim slučajevima i sloboda govora), neophodan je nadzor nadzornih organa, parlamenata, a sudovi su ponekad nedostajali. Neki ustavni sudovi su već doneli odluke o pojedinim merama. Ostali sudovi su bili sprečeni da ispune svoju ulogu (Council of Europe, 2020).

U Izveštaju se s pravom navodi da, iako obrada podataka u kontekstu borbe protiv pandemije može da nađe svoj legitimitet u Konvenciji, izuzetne okolnosti vezane za vitalnu pretnju i javni interes zahtevaju na nacionalnom nivou dodatnu i konkretniju regulativu da se obezbedi poštovanje principa pravne sigurnosti. Takvi propisi treba da definišu obim i svrhu nameravane obrade podataka (Council of Europe, 2020). Takođe, u Izveštaju se posebno ističe da je zaštita podataka od nezakonitog pristupa tim važnija s obzirom na osetljiv karakter većine podataka prikupljenih kao odgovor na zdravstvenu krizu. Organi za zaštitu podataka i civilno društvo odigrali su ključnu ulogu u verifikaciji i jačanju

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COVID-19 nalazi se na sledećem linku: https://eur-lex.europa.eu/content/news/Covid19.html (15.11.2021)

bezbednosti predloženih digitalnih rešenja. Na primer, istaknute su slabosti u zaštiti ličnih podataka: bezbednosne slabosti na veb-lokaciji koja obrađuje samoprijavljene zdravstvene podatke, a posebno nedostatak odgovarajuće enkripcije ili slabosti u vezi sa izvornim kodom aplikacije za praćenje kontakata (Council of Europe, 2020).

Pored Konvencije 108+, da bismo zaštitili podatke od fišing napada tokom pandemije COVID-19, treba pomenuti i GDPR. Prema GDPR-u, (član 7) „kada se obrada zasniva na pristanku, rukovalac će moći da dokaže da je subjekt podataka dao saglasnost na obradu njegovih ili njenih ličnih podataka. Ako je pristanak subjekta podataka dat u kontekstu pisane izjave koja se odnosi i na druga pitanja, zahtev za pristanak će biti predstavljen na način koji se jasno razlikuje od drugih pitanja, u razumljivom i lako dostupnom obliku, koristeći jasan i običan jezik. Bilo koji deo takve izjave koji predstavlja povredu ove uredbe neće biti obavezujući. Subjekat podataka ima pravo da povuče svoju saglasnost u bilo kom trenutku. Povlačenje saglasnosti neće uticati na zakonitost obrade na osnovu saglasnosti pre njenog povlačenja. Pre davanja saglasnosti, subjekt podataka će biti obavešten o tome. Biće lako povući, kao i dati saglasnost. Prilikom procene da li je pristanak slobodno dat, najviše se vodi računa o tome da li je, između ostalog, izvršenje ugovora, uključujući pružanje usluge, uslovljeno pristankom na obradu ličnih podataka koja nije neophodna za izvršenje tog ugovora."

Dalje, u članovima 25 i 32 GDPR-a navodi se da „uzimajući u obzir stanje tehnike, troškove implementacije i prirodu, obim, kontekst i svrhu obrade, kao i rizike različite verovatnoće i ozbiljnosti za prava i slobode fizičkih lica izazvanih obradom, rukovalac će, kako u trenutku određivanja sredstava za obradu, tako i u trenutku same obrade, primeniti odgovarajuće tehničke i organizacione mere, kao što je pseudonimizacija, koje su osmišljene za sprovođenje podataka, principe zaštite, kao što je minimizacija podataka, na efikasan način i da integriše neophodne mere zaštite u obradu kako bi se ispunili zahtevi ove uredbe i zaštitila prava subjekta podataka. Rukovalac će primeniti odgovarajuće tehničke i organizacione mere kako bi obezbedio da se podrazumevano obrađuju samo lični podaci koji su neophodni za svaku konkretnu svrhu obrade."

Prema članu 33 GDPR-a, „u slučaju povrede ličnih podataka, rukovalac će bez nepotrebnog odlaganja obavestiti o povredi ličnih podataka nadležni nadzorni organ, osim ako je malo verovatno da će povreda ličnih podataka dovesti do rizika po prava i slobode fizičkih lica. Dalje, kada je verovatno da će povreda ličnih podataka dovesti do visokog rizika po prava i slobode fizičkih lica, rukovalac će obavestiti o povredi ličnih podataka subjekta podataka bez nepotrebnog odlaganja. Rukovalac će dokumentovati svaku povredu podataka o ličnim podacima, uključujući činjenice koje se odnose na povredu ličnih podataka, njene posledice i preduzete korektivne mere. Ta dokumentacija omogućava nadzornom organu da proveri poštovanje ovog člana.”

Stoga su sve navedene odredbe od velikog značaja za zaštitu ličnih podataka u vreme pandemije COVID-19. S obzirom na zdravstvenu krizu, države članice Evropske unije usvojile su odgovarajuće akte sekundarnog (nacionalnog) zakonodavstva u cilju prevazilaženja problema u vezi sa zaštitom podataka o ličnosti. Prema Savetu Evrope (2020), Izveštaj pominje sledeće mere: a) korišćenje aplikacija za mobilne telefone, u različite svrhe; b) korišćenje podataka o saobraćaju i lokaciji sa mobilnih telefona i aplikacija; c) korišćenje drugih tehničkih alata (elektronske narukvice, pametne kamere koje omogućavaju prepoznavanje lica, termalna skeniranja, daljinsko upravljanje dronovima i robotima, obavezno testiranje).

3. Primeri zloupotreba u sajber prostoru tokom pandemije COVID-19

Od početka pandemije izazvane virusom COVID-19, zabeleženi su brojni slučajevi zloupotrebe u sajber prostoru. Pokazalo se da je COVID-19 izvanredna prilika za sajber kriminalce, a fišing prevare su bile među najrasprostranjenijima i na njih će biti stavljen akcenat. Prema Varburtonu (2020), broj fišing napada širom sveta u stalnom je porastu, posebno tokom 2019. i 2020. godine, što se može videti na slici 1:
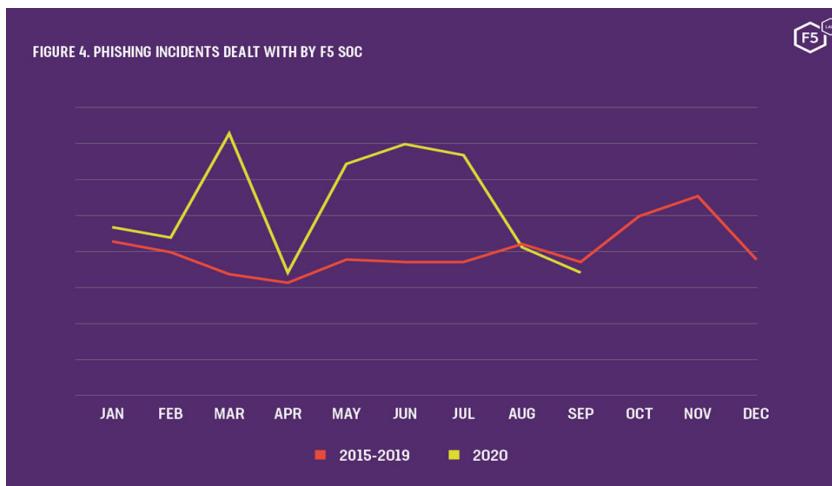
Slika 1: Incidenti phishinga kojima se bavi F5 SOC

Izvor: (Varburton, 2020)

Tako su brojni primeri fišing napada bili napadi na naloge elektronske pošte širom sveta, pri čemu su elektronske poruke adresirane pod različitim imenima u vezi sa pandemijom COVID-19. Prema Izveštaju o fišingu i prevari iz 2020. (Varburton, 2020), dati su primeri elektronskih poruka sa različitim naslovima:

- Covid-19 in your area? Please confirm your address
- Click here for COVID-19 vaccinations
- Get your COVID-19 CARES Act relief check here
- Counterfeit Respirators, sanitizers, PPE
- Fake cures for COVID-19
- Message from the World Health Organization
- Message from the Centers for Disease Control and Prevention
- Click here for Coronavirus-related information
- Donate to these charitable organizations
- Message from Local hospital - Need patient data for COVID-19 testing

- COVID 19 Preparation Guidance
- 2019-nCoV: Coronavirus outbreak in your city (Emergency)
- HIGH-RISK: New confirmed cases in your city
- Coronavirus (2019-nCoV) Safety Measures.

Što se tiče SMS fišing prevara (tzv. smišing), takođe je prijavljen veliki broj pokušaja prevare. Prema Vatkinsu (2020), Simantec otkriva da jedna od dvadeset SMS poruka povezanih sa pandemijom COVID-19 sadrži pokušaje krađe identiteta ili drugi visokorizični sadržaj. Simantec je 24. januara 2020. prvi primetio visokorizični SMS fišing napad koristeći COVID-19 kao mamac, otprilike u istom periodu kada je virus počeo da dobija više medijske pokrivenosti. Svi kriminalci koji stoje iza ovih prevara koriste istu taktiku – iskorišćavanje strahova i finansijskih poteškoća ljudi tokom globalne pandemije kako bi ih namamili.

Istraživanje o fišing prevarama tokom pandemije COVID-19 sprovela je i poznata kompanija Kasperski. Prema relevantnom izveštaju ove kompanije u vezi sa fišing prevarama tokom 2020. godine, identifikovani su različiti oblici prevare, pri čemu se ističu „olakšanje javnosti" od strane spamera, zlonamerne veze (pominje se primer turskog Ministarstva zdravlja i lažne poruke koje obećavaju gotovinu), plaćanja ukoliko je instalirana zlonamerna aplikacija, praćena prevarama u vezi sa korporativnim sektorom (u jednom od mejlova je navedeno da je tehnička podrška napravila poseban sistem upozorenja kako bi se rizik od nove infekcije virusom minimizirao), čuvena nigerijska prevara i sl. (Kaspersky, 2021). Prema pomenutoj kompaniji, „prošlogodišnji događaji uticali su na distribuciju fišing napada po kategorijama ciljanih organizacija. Tri najveće kategorije ostale su nepromenjene nekoliko godina: banke, platni sistemi i globalni internet portali. Godina 2020. donela je promene. Internet prodavnice su postale najveća kategorija sa 18,12%, što se može dovesti u vezu sa rastom onlajn porudžbina zbog ograničenja vezanih za pandemiju. Globalni internet portali ostali su druga po veličini kategorija sa 15,94%, ali je njihov udeo opao za 5,18 p.p. u odnosu na 2019, a banke su bile treće sa „skromnih" 10,72%" (Kasperski, 2021). Ovi podaci su prikazani na Slici 2.
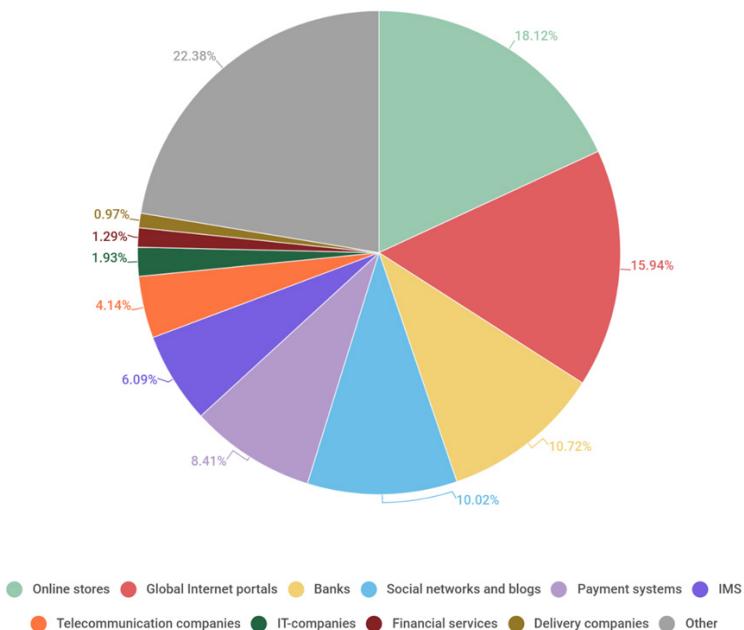
Slika 2: Distribucija organizacija koje su ciljane od strane
napadača, po kategorijama u 2020.

Izvor: (Kasperski, 2021)

Prema CERT-u (2021), u pogledu krađe kredencijala, treba napomenuti da se ova vrsta prevare odvija na način da link vodi do lažne veb-stranice koja sadrži COVID-19 u nazivu, a za pristup informacijama sa stranice zahteva adresu e-pošte i lozinku. Ove veb-stranice izgledaju kao legitimne i izgledaju pouzdane, ali zlonamerni pokušaj se može utvrditi putem detaljnog pregleda URL-a. Unos kredencijala od strane korisnika omogućava napadaču da pristupi njegovoj elektronskoj pošti korisnika, koja obično sadrži lične i poverljive podatke (npr. izvode sa bankovnog računa), a takođe može da koristi imenik korisnika za dalje širenje phishing napada.

Pokazalo se da se komunikacione platforme, kao što je Zoom, takođe mogu koristiti za narušavanje sajber bezbednosti. Dakle, istraživači

bezbednosti su otkrili fišing napade koji se predstavljaju kao Zoom oba-veštenja o sastancima. Prema Dejvisu (2020), imejl zahteva od korisnika da se pridruži sastanku o raskidanju posla, tražeći od korisnika da se prvo prijave na lažnu Zoom stranicu koja će zapravo ukrasti njihove kredencijale. Čini se da je zlonamerna odredišna stranica legitimna „kopija" Zoom stranice za prijavu. Imejl se maskira kao automatizovano obaveštenje za važan sastanak sa HR-om u vezi sa raskidom primaoca. Imejl sadrži vezu ka lažnoj Zoom stranici za prijavu koja se nalazi na „zoom-emergenci.miftp.org". Veze ka stranici za „pecanje" su skrive-ne u tekstu koji se koristi u automatskim obaveštenjima o sastancima. E-pošta se maskira kao podsetnik da primalac ima sastanak sa HR-om u vezi sa njihovim raskidom. Kada žrtva pročita mejl, uspaniče se, klikne na vezu za phishing i žurno pokuša da se prijavi na ovaj lažni sastanak. Ako primaoci postanu žrtve ovog napada, kredencijali za prijavu kao i sve druge informacije sačuvane na Zoom-u biće ugrožene.

4. Zaključak

Na osnovu navedenog, može se zaključiti da su sajber prevare bile veoma česte tokom pandemije izazvane virusom COVID-19. Sajber-kri-minalci su pandemiju shvatili kao odličnu priliku za laku zaradu, a ra-znim metodama socijalnog inženjeringa (koristeći različite psihološke tehnike, uglavnom zasnovane na strahu od virusa COVID-19), uspeli su da prevare svoje žrtve širom sveta. Šteta od sajber napada tokom pan-demije izazvane virusom COVID-19 raste. Ispostavilo se da žrtve sajber napada nisu bile samo privatne kompanije, već i privredni subjekti od javnog značaja, kao i javni sektor širom sveta.

Utvrđeno je da su neki od najčešćih oblika zloupotrebe vezani za fišing u vezi sa elektronskom poštom, krađom korisničkih kredencijala, fišing uz pomoć tekstualnih poruka, distribucija malvera, kao i komu-nikacione platforme poput aplikacije Zoom. Pomenute opasnosti u saj-ber prostoru mogu se sprečiti raznim merama tehničke, organizacione i pravne prirode. Pokazalo se da se mere sajber higijene tokom pandemije COVID-19 moraju unaprediti i efikasnije sprovoditi. Utvrđeno je da u Evropskoj uniji postoji zakonodavstvo u vezi sa fišingom, kako na nivou

Unije, tako i na nacionalnom nivou. Posebno treba istaći značaj Konvencije za zaštitu pojedinaca u pogledu obrade ličnih podataka (Konvencija 108+), kao i Uredbe (EU) 2016/679 Evropskog parlamenta i Saveta od 27. aprila 2016. godine o zaštiti fizičkih lica u vezi sa obradom ličnih podataka i o slobodnom kretanju tih podataka i stavljanju van snage Direktive 95/46/EC (Opšta uredba o zaštiti podataka). Analizirajući najvažnije odredbe ovih pravnih akata, stiče se utisak da je neophodno unaprediti postojeću zakonsku regulativu ne samo na nacionalnom nivou već i na međunarodnom. Jedna od mera koja može dati rezultate odnosi se na podizanje svesti građana i privrede o potencijalnim opasnostima koje vrebaju u sajber prostoru.

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TYPES OF CYBER FRAUD DURING THE COVID-19 VIRUS PANDEMIC

Abstract: The pandemic caused by the COVID-19 virus shook the whole world and caused numerous consequences and great loss of human lives. The subject of the research refers to types of fraud encountered in cyberspace during the pandemic. The research found that some of the most common types of fraud are related to e-mail phishing, theft of user credentials, SMS phishing, malware distribution, as well as communication via social platforms. It is evident that cyber hygiene measures during the COVID-19 pandemic must be improved and implemented more efficiently. Also, the research showed that it is necessary to improve the current legislation not only at the national level, but also at the international level. The research made use of the normative method, induction and deduction.

Key words: law, security, cyber space, COVID-19, phishing

1. Introduction

The pandemic caused by the COVID-19 virus shook the whole world and resulted in numerous dire consequences and great loss of human lives. In addition to all the problems caused by the COVID-19

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pandemic, we will focus on the problems in cyberspace, which have reached significant proportions. True, cyberspace problems are nothing new: they have existed since the rise of the Internet and information and communication technologies. Accelerated digitalization and the ever-widening application of modern technologies have further increased the level of risk to the population, the economy and the public sector around the world.

In this regard, the current COVID-19 pandemic brings not only health risks, but also risks of fraud and misuse of personal data. According to Đukić (2017, p. 99), "these include violation of information confidentiality, interference with their functionality through disruption of operations, usurpation and theft of intellectual property, various types of other theft and fraud, as well as a multitude of other frauds that differ in motives, goals, methods and techniques". As Petrović states (2004), "the notion of theft related to information and communication technologies, in addition to theft performed by stealing information and communication devices and their components, includes theft of various goods, theft of computer services, data theft, theft of codes, passwords and identification numbers and identity theft" (p. 133).

During the COVID-19 pandemic, a large number of different types of cyber fraud were registered, such as types of fraud related to e-mail phishing, theft of user credentials, SMS phishing, malware distribution, and communication platforms such as the ZOOM application. Social networks in particular proved to be a fertile ground for various cyber scams. According to Skakavac (2020) "the negative consequences of using various social networks, especially by minors, should not be overlooked. Although the users of many social networks are diverse when it comes to gender, age, education, etc., these networks have the greatest impact on young people. Young people are curious, eager for new challenges and all the latest types of information technologies, and they very easily become their constant companions and clients" (p. 85).

Phishing as a type of cyber fraud has been particularly prevalent during the pandemic. As Graydon (2006) explains, the term "phishing" "comes from the analogy that fraudsters use e-mail as bait for fish for profitable personal data from the unsuspecting sea of Internet users"

(p. 335-337). According to Domazet & Skakavac (2019), "in the early stages of phishing, perpetrators used relatively simple methods of fraud, so that phishing emails were relatively easily recognizable (for example, they contained numerous grammatical and spelling errors), while today phishing has evolved and become much more complex and sophisticated, including numerous advanced concealment software solutions to obtain sensitive (personal) data" (p. 191).

The damage from phishing attacks is constantly increasing. According to Đukić (2017, p. 110) "in 2015 alone, about 147 million phishing attacks were registered in the world, of which Russia suffered the most attacks (17.8%), while the United States was the best "host" to attackers and the most attacks were carried out from its territory (15.2%). By target, phishing attacks were mostly targeted at online financial institutions (banks, payment systems and online stores)". As Gudkova at al. (2018) state, "in 2016, over 154 million phishing attacks were registered, with Brazil suffering the most attacks, and over 12% of attacks originated in the United States. In 2017, over 246 million attacks were recorded, and the largest source of attacks this year remained the United States (with a share of 13.21%). The most widely used malware is called *Trojan-Downloader.JS.Sload*". According to the 2021 European Union Agency for Cybersecurity (ENISA) Report, "COVID-19 created opportunities for cybercriminals. Social engineering remains the most prevalent attack technique. During the pandemic, cybercriminals have been exploiting people's interest, concern, curiosity, and fear by using phishing lures related to COVID-19 for financial gain".

This research deals with the types of cyberspace fraud during the pandemic. In the sections that follow, we will first discuss the phishing-related legislation in the European Union and then analyze some of the typical examples of cyberfraud during the COVID-19 pandemic. The normative method will be used in the research, as well as the methods of induction and deduction.

2. Phishing Legislation in the European Union

In the field of the EU cyber security, there is still no "umbrella" regulation that would regulate this matter, so the legislation in this area consists of several different legal acts. According to Domazet (2019), the most important regulations regarding cyber security in the European Union are: Council Framework Decision 2001/413/JHA of 28 May 2001 combating fraud and counterfeiting of non-cash means of payment, Directive 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union, Directive 2013/40 of the European Parliament and of the Council of 12 August 2013 on attacks against information systems and replacing Council Framework Decision 2005/222/JHA, Regulation (EU) No 526/2013 of the European Parliament and of the Council of 21 May 2013 concerning the European Union Agency for Network and Information Security (ENISA) and repealing Regulation (EC) No 460/2004 Text with EEA relevance, Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws, Communication from the Commission of 15 November 2006 to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on fighting spam, spyware and malicious software, Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council ('Unfair Commercial Practices Directive'), Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in

the electronic communications sector (Directive on privacy and electronic communications), Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation-further: GDPR Regulation). In connection with the the COVID-19 pandemic, the European Union has adopted a whole set of new acts, striving to legally regulate the challenges as efficiently as possible, and this comprehensive database of regulations is regularly updated.[3] However, it should be noted that the pandemic situation has led to adopting some legislation that could disrupt the normal functioning of the democratic system and the exercise of freedoms and rights of citizens.

According to Council of Europe (2020), for example, the EU member states that are signatories to the Convention for the Protection of Individuals with regard to the Processing of Personal Data (hereinafter: Convention 108+) have adopted provisions restricting certain freedoms and rights. According to the 2020 Council of Europe Report on Data Protection, three main approaches can be identified: 1) adoption of general emergency measures giving the government special powers (notably based on laws or decrees, in application of constitutional law); 2) adoption of emergency measures in specific sectors, often based on public health or pandemic regulations; 3) adoption of emergency measures without a specific legislative basis. These different approaches have led to a patchwork of provisions in the 55 countries parties to Convention 108. Most provisions give extensive power to the governments, though usually only for a limited period of time. The same report states that even though such measures can be highly invasive and constitute important limitations to fundamental rights (privacy, data protection but also freedom of movement and assembly, and in some cases freedom of speech), the necessary oversight by supervisory authorities, parliaments and courts has sometimes been missing. Some constitutional courts have already issued rulings on some measure. Other courts were prevented from fulfilling their role (Council of Europe, 2020).

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[3] The list of EU documents related to the common EU response to the COVID-19 pandemic can be found at the following link: https://eur-lex.europa.eu/content/news/Covid19.html (15/11/2021)

The Report rightly states that although data processing in the context of combating the pandemic can find its legitimacy in the Convention, the exceptional circumstances related to the vital threat and the public interest call at national level for additional and more specific regulation to ensure compliance with the principle of legal certainty. Such regulations should define the scope and purpose of the intended data processing (Council of Europe, 2020). Also, the Report states that protecting data against unlawful access is all the more important considering the sensitive character of most of the data collected in response to the health crisis. Both data protection authorities and civil society have played a crucial role in verifying and reinforcing the security of the proposed digital solutions. For example, weaknesses in the protection of personal data were highlighted: security weaknesses on the website processing self-reported health data, and especially a lack of proper encryption or weaknesses related to the source code of the contact -tracing application (Council of Europe, 2020).

In addition to Convention 108+, the EU General Data Protection Regulation (GDPR) also serves to protect data from phishing attacks during the COVID-19 pandemic. According to the GDPR, (Article 7) where processing is based on consent, the controller shall be able to demonstrate that the data subject has consented to processing of his or her personal data. If the data subject's consent is given in the context of a written declaration which also concerns other matters, the request for consent shall be presented in a manner which is clearly distinguishable from the other matters, in an intelligible and easily accessible form, using clear and plain language. Any part of such a declaration which constitutes an infringement of this Regulation shall not be binding. The data subject shall have the right to withdraw his or her consent at any time. The withdrawal of consent shall not affect the lawfulness of processing based on consent before its withdrawal. Prior to giving consent, the data subject shall be informed thereof. It shall be as easy to withdraw as to give consent. When assessing whether consent is freely given, utmost account shall be taken of whether, *inter alia*, the performance of a contract, including the provision of a service, is conditional on consent to the processing of personal data that is not necessary for the performance of that contract.

Furthermore, the GDPR Articles 25 and 32 state that taking into account the state of the art, the cost of implementation and the nature, scope, context and purposes of processing as well as the risks of varying likelihood and severity for rights and freedoms of natural persons posed by the processing, the controller shall, both at the time of the determination of the means for processing and at the time of the processing itself, implement appropriate technical and organisational measures, such as pseudonymisation, which are designed to implement data-protection principles, such as data minimisation, in an effective manner and to integrate the necessary safeguards into the processing in order to meet the requirements of this Regulation and protect the rights of data subjects. The controller shall implement appropriate technical and organisational measures for ensuring that, by default, only personal data which are necessary for each specific purpose of the processing are processed.

According to the GDPR Article 33, in the case of a personal data breach, the controller shall without undue delay notify the personal data breach to the supervisory authority competent, unless the personal data breach is unlikely to result in a risk to the rights and freedoms of natural persons. Further, when the personal data breach is likely to result in a high risk to the rights and freedoms of natural persons, the controller shall communicate the personal data breach to the data subject without undue delay. The controller shall document any personal data breaches, comprising the facts relating to the personal data breach, its effects and the remedial action taken. That documentation shall enable the supervisory authority to verify compliance with this Article.

Therefore, all the above provisions are of great importance for the protection of personal data during the pandemic. In view of the health crisis, the Member States of the European Union have adopted appropriate acts of secondary (national) legislation in order to overcome the problems related to the protection of personal data. According to Council of Europe (2020), the Report mentions the following measures: a) use of mobile phone applications, for different purposes; b) use of traffic and location data from mobile phones and apps; c) use of other technical tools (eBracelets, smart cameras allowing for facial recognition, thermal scans, remote control by drones and robots, mandatory testing).

3. Examples of Cyberfraud During the COVID-19 Pandemic

Since the beginning of the COVID-19 pandemic numerous cases of cyberfraud have been recorded. The pandemic turned out to be an extraordinary opportunity for cybercriminals; since phishing scams were among the most widespread the following sections will focus on them. According to Warburton (2020), the number of phishing attacks across the world was constantly increasing, especially during 2019 and 2020, which can be seen in the Figure 1:

Figure 1: Phishing Incidents dealt with by F5 SOC
Source: (Warburton, 2020)

Thus, numerous examples of phishing attacks have been attacks on e-mail accounts around the world, with e-mails being addressed by different names referencing the pandemic. According to the Phishing and Fraud Report from 2020 (Warburton, 2020), examples of e-mails with different subject lines are given:

- Covid-19 in your area? Please confirm your address
- Click here for COVID-19 vaccinations
- Get your COVID-19 CARES Act relief check here

- Counterfeit Respirators, sanitizers, PPE
- Fake cures for COVID-19
- Message from the World Health Organization
- Message from the Centers for Disease Control and Prevention
- Click here for Coronavirus-related information
- Donate to these charitable organizations
- Message from Local hospital - Need patient data for COVID-19 testing
- COVID 19 Preparation Guidance
- 2019-nCoV: Coronavirus outbreak in your city (Emergency)
- HIGH-RISK: New confirmed cases in your city
- Coronavirus (2019-nCoV) Safety Measures.

With regard to SMS phishing scams (smishing), a large number of fraud attempts have also been reported. According to Watkins (2020), Symantec finds that 1 in 20 COVID-19 related SMS messages contain phishing attempts or other high-risk content. Symantec observed the first high-risk SMS phishing attack using COVID-19 as bait on January 24, 2020, roughly around the same time as the virus began to receive more media coverage. The criminals behind these scams all use the same tactic; taking advantage of people's fears and financial hardships during the global pandemic in order to lure them in.

Research on phishing scams during the COVID-19 pandemic was also conducted by the well-known company Kaspersky. According to the relevant report of this company regarding phishing fraud during 2020, various forms of fraud have been identified, highlighting "public relief" by spammers, malicious links (mention is made of the example of the Turkish Ministry of Health and false messages promising cash payments if a malicious application is installed), followed by fraud related to the corporate sector (one of the emails stated that technical support had created a special alert system to minimize the risk of a new virus infection), the famous Nigerian scam and the like (Kaspersky, 2021).

According to Kaspersky, "last year's events affected the distribution of phishing attacks across the categories of targeted organizations. The three largest categories had remained unchanged for several years: banks, payment systems and global Internet portals. The year 2020 brought change. Online stores became the largest category with 18.12%, which may be linked to a growth in online orders due to pandemic-related restrictions. Global Internet portals remained the second-largest category at 15.94%, but their share dropped by 5.18 p.p. as compared to 2019, and banks were third with a "modest" 10.72%"(Kaspersky, 2021). This data is shown in Figure 2.
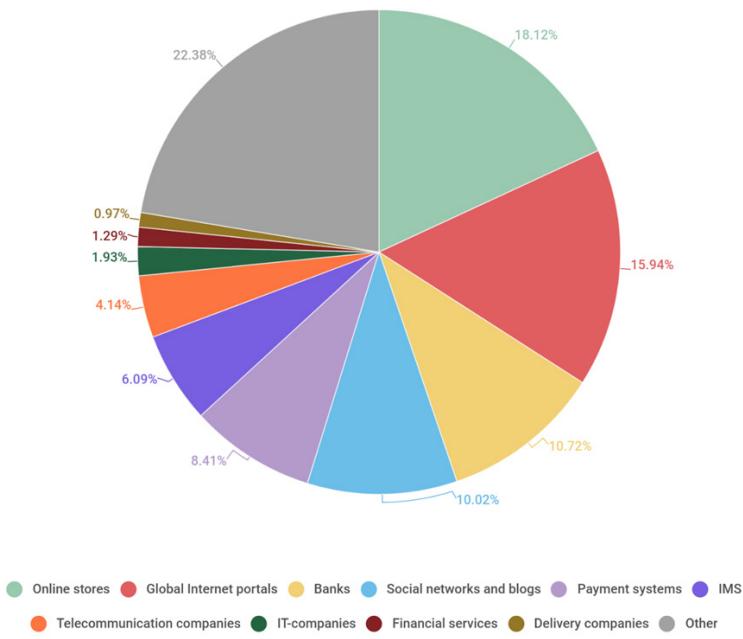

Figure 2: Distribution of organizations targeted by phishers, by category in 2020
Source: (Kaspersky, 2021)

According to CERT (2021), with regard to credential theft, it should be noted that this type of fraud takes place in such a way that Link leads to a fake website containing "COVID-19" in the name, and for access to

information from page requires an email address and password. These websites look like legitimate and seem reliable, but a malicious attempt can be determined by a detailed examination URL. The entry of credentials by the user allows the attacker to access his electronic user's mail, which usually contains personal and confidential data (eg bank account statements), and can also use the user's directory to further spread phishing attacks.

It has been shown that communication platforms such as ZOOM can also be used to disrupt cyber security. Abnormal security researchers detected phishing attacks posing as Zoom meeting notifications. According to Davis (2020), the email requests the user to join a meeting about their job termination, asking users to first log into a fake Zoom page that will actually steal their credentials. The malicious landing page appears to be a legitimate "carbon copy" of a Zoom login page. The email masquerades as an automated notification for an important meeting with HR regarding the recipient's termination. The email contains a link to a fake Zoom login page hosted on 'zoom-emergency.myftp.org.' Links to the phishing page are hidden in text used in automated meeting notifications. The email masquerades as a reminder that the recipient has a meeting with HR regarding their termination. When the victim reads the email they will panic, click on the phishing link, and hurriedly attempt to log into this fake meeting. Should recipients fall victim to this attack, login credentials as well as any other information stored on Zoom will be compromised.

4. Conclusion

Based on the above, it can be concluded that cyber scams were very common during the COVID-19 pandemic. Cybercriminals understood the pandemic as a great opportunity for easy gain, and with various methods of social engineering (using various psychological techniques, mostly based on the fear of the virus), succeeded in deceiving their victims worldwide. The damage from cyber-attacks during the COVID-19 pandemic is increasing. It turned out that the victims of the cyber-attack were not only private companies, but also public utilities, as well as the public sector around the world.

The research has shown that some of the most common types of cyberfraud are related to e-mail phishing, theft of user credentials, SMS phishing, malware distribution, as well as communication platforms such as the ZOOM application. These cyberspace risks can be prevented by various measures of technical, organizational and legal nature. It was determined that cyber hygiene measures during the COVID-19 pandemic must be improved and implemented more efficiently. It has been established that there is phishing-relelated legislation both at the EU level and at the national level. Some of the most important EU legislation includes the Convention for the Protection of Individuals with regard to the Processing of Personal Data (Convention 108+), as well as Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). Analyzing the most important provisions of these legal acts, one gets an impression that it is necessary to improve the current legal regulations not only at the national level, but also at the international level. One of the measures that can give results is related to raising the awareness of citizens and the economy about the potential dangers lurking in cyberspace.

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Prikazi

Reviews

Tatjana Loš [1]

PRIKAZ KNJIGE

FELDMAN, O. & ZMERLI, S. (EDS.) (2019), THE PSYCHOLOGY OF POLITICAL COMMUNICATORS: HOW POLITICIANS, CULTURE, AND MEDIA CONSTRUCT AND SHAPE PUBLIC DISCOURSE, NY: ROUTLEDGE

Zbirka studija „Psihologija političkih komunikatora: Kako političari, kultura i mediji konstruišu i oblikuju javni diskurs" (2019) apostrofira ulogu i značaj šire primene psihološke teorije u domenu savremene politike, doprinoseći unapređenju polja političke komunikacije kao atraktivne multidisciplinarne oblasti proučavanja. U uređivačkoj izvedbi Ofer Feldman, izraelsko-japanskog profesora političke psihologije i ponašanja, i Sonje Zmerli, profesorke političkih nauka na Univerzitetu u Grenoblu, grupa autora obrazlaže svoje postavke teorijsko-empirijske analize višestrukog uticaja komunikacije na političke stavove i ponašanje. S takvom agendom, knjiga predstavlja koristan priručnik studentima i istraživačima koji se, pre svega, bave psihološkim aspektima političke komunikacije.

Kroz komparativne primere istraživanja iz Sjedinjenih Američkih Država, Velike Britanije, Španije, Holandije, Nemačke, Italije, Izraela i Japana, u fokus se, na 252 strane, stavljaju izazovi s kojima se suočavaju liberalna demokratska društva u procesu konstituisanja javnog dis-

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kursa, kao suštinskog sastojka u procesu učvršćivanja odnosa između države i građana. Cilj je da se, uz kreativnu primenu psihološke teorije u politici, rasvetli na koji način politička komunikacija utiče na generisanje percepcije političke stvarnosti, ponašanje, formiranje mišljenja, prisvajanje stavova i sam čin političke mobilizacije.

Strukturu knjige čine 12 poglavlja i tri dela ili tri tematske celine: „Diskurs političkih lidera", „Populistička komunikacija i negativna kampanja" i „Medijski diskurs".

Već u uvodnom delu, urednici se decidirano postavljaju kao vodiči kroz slojevitost sfere političke komunikacije, izlažući argumentaciju da je uspeh formata u kojem neka poruka u interakciji s političkim subjektom stiže do publike, u ključnoj vezi sa socijalno-kulturnim kontekstom, izabranom retorikom i vrednostima koje se propagiraju i neguju u društvu. O političarima se govori iz ugla političkih komunikatora, koji nezavisno od svojih liderskih moći i političkih ideja, moraju da iskažu poželjne retoričke veštine i tako, birajući prave reči, pridobiju birače. Mediji zavređuju značajnu pažnju u ovoj zbirci studija, jer ih autori predstavljaju ne samo kao primarne posrednike u komunikaciji između političara i birača već i kao kreatore i tumače stvarnosti.

U prvom poglavlju prvog dela knjige analiza političkog jezika Donalda Trampa 2016. godine, kada je pobedio u izbornoj trci za predsednika SAD, razotkriva pozadinu neočekivanog uspeha političke komunikacije u određenom istorijskom trenutku. Vodeći kampanju po modelu rijaliti programa, čija su vulgarnost i agresivnost u nastupu, nepažljivost pri izboru reči, emotivni ispadi, ksenofobični, rasistički i seksistički govori kao kontrateža političkoj korektnosti, podržani kao njegova autentičnost koja ga bitno razlikuje od starih vođa, Tramp se u datom momentu isprofilisao kao rešenje za američke probleme.

U delu „Diskurs političkih lidera", drugo poglavlje posvećeno je političko-kulturnom reljefu Japana, kroz prikaz kvantitativne studije o kontroli političkih intervjua na televiziji, da bi poslednje poglavlje prve tematske celine bilo organizovano oko postavke problematike liderskog uokviravanja razumevanja međunarodnih političkih pitanja. Kroz uporednu analizu diskursa japanskih i američkih lidera, autori iznose tezu o nemerljivom uticaju međunarodnog statusa, ali i društvenim, kultur-

nim i individualnim faktorima koji doprinose formiranju uočljivih razlika u političkom diskursu.

U drugom delu knjige autori ukazuju na porast populizma u Evropi i SAD, koji se umnogome dogodio kao posledica populističke komunikacije moćne da utiče na mišljenje i ponašanje građana, ali i kao epilog negativno vođenih kampanja. Zaključak je da mediji ciljano podstiču kandidate da emituju negativne vesti, jer da bi zavredeli medijsku pažnju, političari proizvode konflikte i prave kontroverzne poteze, čime kampanja nužno dobija obrise negativne.

Prvo poglavlje ovog dela knjige donosi glas o stanju u Holandiji, gde tradicionalni mediji još odolevaju populističkoj komunikaciji, ali ne i onlajn, dok se u drugom poglavlju izlaže analiza o ponovnom uspehu populističkih partija u Italiji tokom izborne kampanje 2013. godine, u kojoj se štampa pojavljuje kao direktan odgovor na pitanje – kako se ili zahvaljujući kome to dogodilo?

Treće poglavlje dela „Populistička komunikacija i negativna kampanja", vraća nas u 2015. godinu, u vreme izborne trke u Velikoj Britaniji, s osvrtom na efekte negativne kampanje koja se vodila preko uticajnih nekontrolisanih sredstava komunikacije, odnosno štampe.

Treći deo knjige, u kojem je fokus na medijskom diskursu, zavređuje dodatni prostor za prikaz, jer kao najobimniji donosi i čitalački uzbudljive primere koji upravo ukazuju na psihološke korene političke komunikacije. Prvo poglavlje bazirano je na proceni kapaciteta političke retorike u televizijskim debatama, naročito kada sud o tome iznosi drugi medij – štampa. Analiza s osvrtom na prvu TV debatu iz 1956. godine u SAD, pokazala je da je televizija olakšala političarima mogućnost da uspostave bliži odnos s potencijalnim glasačima, transformišući čitav izborni proces. Na osnovu studije u kojoj su jedinice analize bile televizijske debate tokom izbornih kampanja u Španiji (1993), SAD (2000) i Velikoj Britaniji (2010), ispostavilo se da štampa nema svuda isti stav o samim efektima ovog formata. Analiza je pokazala da Španci kod političara cene retoriku ratobornosti i upotrebu statistike i činjenica, da se u Velikoj Britaniji procenjuju retoričke veštine, osmeh i govor tela, dok je u SAD na ceni sposobnost političkog aktera da iskaže ponizan stav i približi se identitetu tipičnog američkog građanina. Autori ističu da

kada izveštaj o TV debati prenesu novine, političko ponašanje kandidata može da se koriguje, što stvara pretpostavku za veći uspeh u novom TV duelu, drugom krugu izbora ili u novom izbornom procesu. Ali većina političara, pokazuje analiza, ostaje dosledna već prikazanoj strategiji, pa je na tom polju neophodna dodatna psihološka obrada političke komunikacije koja utiče na oblikovanje javnog diskursa.

Drugo i treće poglavlja dela „Medijski diskurs" posvećeno je uzrocima i posledicama medijskog kadriranja političarki kroz rodnu pristrasnost. Analize pokazuju da su vesti o političarkama uglavnom manje vidljive od onih o muškarcima, a kada su podjednako pokrivene, neretko su predstavljene kroz prizmu prepoznatljivih stereotipa, tako što se akcenat stavlja na njihove spoljašnje karakteristike – izgled izražen kroz žensku haljinu i štikle, opštu seksualnost, šminku, godine, težinu. Uokviravanje se odigrava i pokrivanjem kadrova o političarki u tradicionalnoj ulozi majke, supruge i domaćice, kao i identifikacijom sa „ženskim pitanjima" (u čiji resor spadaju obrazovanje, briga o zdravlju, ženska prava), koja se bitno razlikuju od „muških oblasti" (ekonomija, bezbednost, spoljna politika). Studija kojom je obuhvaćen slučaj izraelskih političarki, pokazala je da, međutim, medijsko uokviravanje političarki nije nužno dihotomično i binarno, već zavisi i od okolnosti, lokalnog okvira, nesistemske ili *ad hoc* prirode različitih promenljivih faktora, kao i profesionalnih normi medija. Nemačka kancelarka Angela Merkel uspela je da se otrgne od esencijalizovane veze između prave žene i pravog političkog vođe, a neki stručnjaci su tvrdili da je nespremnost Merkelove da igra na rodnu kartu bila njena ulaznica za uspeh.

U narednom poglavlju autori iznose argumentaciju kako različiti mediji stvaraju različite okvire za različite vrste anketa, od kojih svaka predstavlja poseban obrazac prezentacije. Poslednje poglavlje posvećeno je pitanju vlasničke strukture medija i medijskom uokviravanju, koje se kod popularnih medija odigrava uz upotrebu emocija, „mekših" tema, velikih, pompeznih naslova i upadljivih slika, dok su kod elitnih medija naslovi svedeniji, boje neupečatljive, ali su zato priče „teže" ili ozbiljnije.

Time je uloga medija u oblikovanju javnog diskursa i toka uticaja političke komunikacije dodatno podebljana, čime se otvara prostor za

dalja plodonosna istraživanja. U knjizi su kroz istraživačku lupu posmatrane i prostrano obrađene teme za promišljanje o sprezi psihološke teorije i primenjene politike, što predstavlja podjednak izvor inspiracije za stručnjake u oblasti politike, psihologije, kao i za teoretičare medija i kulture. Podaci do kojih su autori došli svakako predstavljaju dobru podlogu za nove istraživačke pohode.

Značaj knjige je u tome što prevashodno ukazuje na važnost primene psihologije u domenu politike i političke komunikacije, kao multidisciplinarnog polja studija koje će u vremenu koje nam dolazi (p)ostati nužnost. Vrednost zavređuje upotrebom kreativne, mnogostruke metodologije, uz dominaciju analize sadržaja koja donosi interesantne podatke, a aktuelnom je naročito čini odeljak o rodnom medijskom uokviravanju. S druge strane, s erupcijom uticaja društvenih mreža na oblikovanje i percepciju stvarnosti, ne može da promakne činjenica da je neophodno da se analiza psihološkog aspekta političke komunikacije proširi na tzv. nove medije, koji umnogome ozbiljno potiskuju tradicionalne. Kako je taj proces evidentno nezaustavljiv, naklonjenost štampi u eri permanentne ekspanzije društvenih medija delimično umanjuje vrednost ove zbirke studija, kojoj nedostaje i studiozniji osvrt na samu publiku ili primaoce poruka. Knjiga bi postigla veći značaj i da je težište analize prošireno na društva koja se ne mogu okarakterisati kao liberalno demokratska, jer bi se takvom komparacijom stekao širi uvid u proces i pozadinu oblikovanja javnog diskursa. Sve to je možda ostavljeno za drugi deo knjige na kojem se, u trenutku dok ovo pišemo/čitamo, upravo radi.

Tatjana Loš [1]

BOOK REVIEW

FELDMAN, O. & ZMERLI, S. (EDS.) (2019), THE PSYCHOLOGY OF POLITICAL COMMUNICATORS: HOW POLITICIANS, CULTURE, AND MEDIA CONSTRUCT AND SHAPE PUBLIC DISCOURSE, NY: ROUTLEDGE

The collection of research essays *The Psychology of Political Communicators: How Politicians, Culture and Media Construct and Shape Public Discourse* (2019) emphasizes the role and importance of psychological theory in the domain of contemporary politics, contributing to the field of political communication as an attractive multidisciplinary field of study. The editors, Ofer Feldman, an Israeli Japanese professor of political psychology and behaviour, and Sonia Zmerli, a professor of political science at the University of Grenoble, and their team of experts embark upon a theoretical and empirical analysis of the multiple ways communication affects political behaviour and attitudes. This book is thus a useful manual for both students and researchers who are interested in the psychological aspects of political communication.

Using comparative research examples from the United States of America, Great Britain, Spain, the Netherlands, Germany, Italy, Israel and Japan, this 252 page-book focuses on the challenges faced by liberal democratic societies in the process of constituting public discourse, as an essential ingredient in the process of strengthening the relationship between the state and citizens. Applying psychological theories to pol-

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itics, the book aims to study how political communication affects the perception of political reality, behaviour, opinions, attitudes, and finally the very act of political activism.

The book consists of 12 chapters which investigate three major areas of discourse analysis: political figures, populist communication and negative campaigning, and media discourse.

In the introduction, the editors claim the role of readers' guides through the many layers of political communication. They argue that the effectiveness of the format in which the message is conveyed to the audience, and its interaction with a political subject, are inextricably linked with the social and cultural context, the chosen rhetoric, and the values that are nurtured in a society. Politicians are seen as political communicators, who, regardless of their leadership powers and political ideas, must demonstrate desirable rhetorical skills and thus, by choosing the right words, win over the voters. Considerable attention is also devoted to the media, presented not only as primary mediators in the communication between politicians and the electorate, but also as creators and interpreters of reality.

In the first part of the book, "Discourse of Political Leaders", the first chapter deals with the analysis of Donald Trump's political language in 2016, when he won the US presidential elections. The essay reveals the background of this unexpected success in political communication at a particular time in history. Trump was running a campaign like a reality show: he was being crude and aggressive, blunt, emotionally volatile in public. His campaign framed his xenophobic, racist, and sexist speeches as a counterweight to political correctness and lauded his supposed authenticity as a trait that distinguished him from previous leaders. In this way, Trump was framed as a solution to the USA's problems of the time.

The second chapter describes the political and cultural landscape of Japan, discussing a quantitative study on whether political TV interviews are subject to control. The last chapter of the first part discusses how political leaders frame the public understanding of international political issues. Using a comparative analysis of the discourse of Japanese and American leaders, the authors argue that the international status of a leader has a powerful impact on political discourse, in addition

to many other social, cultural and individual factors which shape the differences in political discourse.

In Part II of the book, the authors focus on the rise of populism in Europe and the USA. This phenomenon, they argue, is the result of populist discourse which has the power to shape people's opinions and behaviours, and also the outcome of negative campaigning. The authors conclude that media outlets deliberately encourage the candidates to spread negative news, and then, in order to get media attention, politicians produce conflicts and make controversial statements, which ultimately take on the form of negative campaigning.

The first chapter of Part II gives an account of the situation in the Netherlands, where the printed media still resist the populist discourse, while the online media outlets are rife with it. The second chapter examines the resurgence of populist parties in Italy during the 2013 election campaign. According to the authors, the press is the main culprit for the rise of populism in Italy. The third chapter takes us back to 2015, at the time of the UK elections, focusing on the effects of negative campaigning waged via the press, which proved to be an influential but out-of-control communication channel.

The third part of the book, which focuses on media discourse, warrants closer examination. This part, being the most detailed, includes compelling examples of media discourse that demonstrate how political communication is grounded in psychological findings. The first chapter offers an assessment of the power of political discourse in televised debates, especially in cases when this assessment is made by another medium – the press. Examining the first USA televised debate in 1956, the essay shows how television made it easier for politicians to establish a closer relationship with potential voters, transforming the entire electoral process. A study which examined televised debates during election campaigns in Spain (1993), the USA (2000) and the UK (2010) has shown that the press in these countries have different attitudes about the effectiveness of this format. The Spanish, for instance, place more value on belligerent rhetoric and are impressed when political leaders make use of statistics and facts in their speeches. In the UK, meanwhile, it is candidates' rhetorical skills, facial expressions (e.g., smiling) and

body language that come under scrutiny. Lastly, in the USA, the candidates' ability to appear humble and resemble a "typical" American voter is highly valued. The authors note that the newspaper reports can be used to rectify candidates' behaviour during a TV debate, making it seem better than it really was. This in turn creates an opportunity for the candidate to be more successful in the next TV debate, the next voting round or in new elections. However, the study also shows most candidates are reluctant to modify their chosen strategy once it has been presented to the voters. Therefore, it would be necessary to further research of the impact of political communication on the public discourse through the lens of psychology.

The second and third chapter discuss the causes and consequences of gender bias in media framing of female politicians. Studies have shown that news items involving female politicians receive less coverage than those involving their male counterparts. Even if they receive equal coverage as men, female politicians are often framed by using stereotypes and emphasizing their outward appearance (e.g., feminine clothing, high heels, make up) or their sexuality, age, or weight. This type of framing is also evident in media presentation of female politicians in the traditional role of a mother, wife, and housewife, identifying them with "women's sectors" (education, health care, women's rights), which are markedly different from "men's sectors" (economy, security, foreign policy). The study about Israeli female politicians has showed that the media framing of female politicians need not always be dichotomous and binary. It depends on the situation, cultural context, various *ad hoc* factors, as well as the professional norms of the media. German Chancellor Angela Merkel, for instance, managed to defy the false dichotomy between a woman and a political leader. Some experts have argued that Merkel's unwillingness to play the gender card was her ticket to success.

In the following chapter, the authors argue that different media outlets create different frameworks for different types of surveys, which represents a specific presentation pattern. The last chapter focuses on the issue of media ownership structure and media framing. Popular media do this by using emotional language, light topics, big and bombastic headlines, and eye-catching images. In "quality" media, the headlines are shorter, and the colours subdued, to reflect the seriousness of the

reporting. The role of the media in shaping public discourse and political communication is further emphasized, which provides opportunities for further research. This book focuses on the connection between psychological theory and applied politics from many different aspects, providing food for thought for experts in the field of politics, psychology, media and cultural theory. The authors' findings will undoubtedly prove as a solid basis for further research.

The study stresses the importance of the application of psychology in the field of politics and political communication, as a multidisciplinary field of study that will become indispensable in the near future. The book's value lies in using creative, multiple methodology, predominantly content analysis to obtain interesting results. The chapter on gender media framing is especially relevant. On the other hand, with the overwhelming influence of social networks in the shaping and perception of reality, it becomes necessary to include the "new media" (which have become a serious threat to the traditional media) into the analysis of psychological aspects of political communication. Ignoring the rising influence of social media in favour of the printed media diminishes the value of this study. The book also lacks a more detailed examination of the audience as the recipients of messages. The book would have gained even more relevance had the analysis included societies that are not liberal democracies, because such a comparison would provide a deeper insight into the process and background of shaping public discourse. It is to be hoped that these elements will be included in the book's sequel, which is currently being written.

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Za navođenje izvora koji nisu navedeni u ovom dokumentu molimo autore da konsultuju zvaničnu stranicu Američke psihološke asocijacije: https://apastyle.apa.org.

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	U tekstu	U spisku literature
Knjiga		
Knjiga s jednim autorom	Prema Dimitrijeviću (1999, str. 64), … Kako navodi Dimitrijević (1999), „pomoću testova pokušava se utvrditi koliko su učenici savladali izvesno nas-tavno gradivo (testovi dostig-nuća). Cilj testiranja je, dakle, konačni rezultat procesa učen-ja i predavanja. U određenim prilikama to je i dovoljno" (str. 64).	Dimitrijević, N. (1999). *Testiranje u nastavi stranih jezika*. Zavod za udžbenike i nastavna sredstva.
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Novine	Po tvrdnjama Gerštajnove (2021), … Po tvrdnjama mnogih autora (npr. Gerstein, 2021), …	Gerstein, T. (2021, September 6). Why everyone should care about workers' rights. *The New York Times.* https://www.nytimes.com/2021/09/06/opinion/labor-workers-rights.html
Pravni dokument		
Zakon/ pravilnici/ Ustav	Prema Zakonu o obligacionim odnosima (2020), …	Zakon o obligacionim odnosima, (*Sl. list SFRJ*, br. 29/78, 39/85, 45/89 - odluka USJ i 57/89, *Sl. list SRJ*, br. 31/93, *Sl. list SCG*, br. 1/2003 - *Ustavna povelja* i *Sl. glasnik RS*, br. 18/2020). https://www.paragraf.rs/propisi/zakon_o_obligacionim_odnosima.html
Onlajn izvor		
Vebsajt poznatog autora	Po tvrdnjama Gerštajnove (2021), … Po tvrdnjama mnogih autora (npr. Gerstein, 2021), …	Gerstein, T. (2021, September 6). Why everyone should care about workers' rights. *The New York Times.* https://www.nytimes.com/2021/09/06/opinion/labor-workers-rights.html

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Disertacija/teza		
Neobjavlje-na magis-tarska teza ili doktorska disertacija	Prema Volfu (2021), …	Volf, M. (2021). *Zastupl-jenost kontekstualne refor-mulacije pri prevođenju filmskih naslova na srpski jezik u poslednjoj deceniji.* [Neobjavljeni masterski rad]. Univerzitet Union.
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Book		
Book with one author	As mentioned by Brown (2010, p. 64), … When considering the possibility for foreign language learners to acquire native-like pronunciation, Brown (2010), says: "This conclusion lends support for a neurologically based critical period, but principally for the acquisition of an authentic (nativelike) accent, and not very strongly for the acquisition of communicative fluency and other "higher-order" processes" (p. 64).	Brown, D. (2006). *Principles of language learning and teaching* (5th edition). Pearson Education.

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