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## IMPACT OF THERAPEUTIC HORTICULTURE ON PSYCHOSOCIAL ASPECTS OF FUNCTIONING IN ADULTS WITH INTELLECTUAL DISABILITY

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### Abstract

Therapeutic horticulture (TH) is a non-invasive support treatment in which participants enhance their well-being through active or passive involvement in plant and plant-related activities. Positive effects of TH are mainly noticed in children and youth with intellectual disability (ID), while the effects of TH on adults with ID have not been extensively studied. The aim of this study was to determine the impacts of TH on psycho-social aspects of functioning in adults with moderate ID in institutional settings. The sample included 68 adults with moderate ID of both genders. The participants were divided into an experimental group (N=33), that participated in a designed ten-week program TH, and a control group (N=35). The Social Skills Rating System – SSRS (Gresham & Eliot, 1990) was used to assess social skills and behavioral problems and Self-Efficacy for Gardening Scale was designed for assessing self-efficacy. We compared the results before and after the intervention. The obtained results showed a significant decrease in different forms of problem behaviors, and an improvement of social skills and self-efficacy in experimental group. Results of this study provide the empirical proof for positive effects of TH on the improvement of the psychosocial well-being of adults with moderate ID in institutional settings. However, further research is necessary.

**Key words:** moderate intellectual disability, adults, therapeutic horticulture, institutional settings

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## УТИЦАЈ ТЕРАПЕУТСКЕ ХОРТИКУЛТУРЕ НА ПСИХОСОЦИЈАЛНО ФУНКЦИОНИСАЊЕ ОДРАСЛИХ ОСОБА СА ИНТЕЛЕКТУАЛНОМ ОМЕТЕНОШЋУ

### Апстракт

Терапеутска хортикултура (ТХ) је неинванзивни супортивни третман путем којег учесници унапређују своје благостање активним или пасивним укључивањем у активностима са биљкама. Позитивни ефекти ТХ се углавном приписују деци и младима са интелектуалном ометеношћу (ИО), док ефекти ТХ на одрасле особе са ИО нису детаљно проучавани. Циљ овог истраживања је утврђивање утицаја ТХ на психосоцијалне аспекте функционисања одраслих особа са умереном ИО у институционалном окружењу. Узорак је обухватио 68 одраслих особа са умереном ИО, оба пола. Учесници су били подељени у експерименталну групу (N=33) која је учествовала у осмишљеном десетонедељном програму ТХ и контролну групу (N=35). За процену социјалних вештина и бихевиоралних проблема коришћен је Систем за процену социјалних вештина (The Social Skills Rating System – SSRS, Gresham & Elliot, 1990), док је за процену самоефикасности примењена креирана Скала за процену самоефикасности у хортикултури. Извршено је поређење резултата пре и након интервенције. Добијени резултати су показали значајно смањење различитих облика проблематичног понашања и побољшање социјалних вештина и самоефикасности код испитаника експерименталне групе. Резултати ове студије пружају емпиријски доказ позитивних ефеката ТХ на побољшање психосоцијалног благостања одраслих особа са умереном ИО у институционалном окружењу. Међутим, потребна су даља истраживања.

**Кључне речи:** умерена интелектуална ометеност, одрасле особе, терапеутска хортикултура, институционално окружење

### INTRODUCTION

The intentional use of plants and gardens for therapeutic outcomes is not a new idea. Even ancient Egyptians wrote about bringing plants indoors, but it was only in 1789 that Dr. Benjamin Rush introduced the use of horticulture activities as a treatment method in the medical field (Demers, 2013). The greatest expansion of horticulture activities happened after World War II (Detweiler et al., 2010). Today, plants, their products, and natural environment are used for therapeutic purposes in a wide range of purposeful gardening activities. Therapeutic horticulture (TH) is a non-invasive support treatment in which participants enhance their well-being through active or passive involvement in plant and plant-related activities (American Horticultural Therapy Association, 2017). The activities are facilitated by a registered horticultural therapist or other professionals with training in the use of horticulture and aspects of health and social care (Sempik, Rickhuss, & Beeston, 2014). TH programs are found in a wide variety of healthcare, rehabilitative and residential settings. However, we still lack the knowledge regarding its efficacy in what we might term “institutional settings” (Christie, Thomson, Miller, &

Cole, 2016, p. 4), such as homes for children, youth, and adults with disabilities, homes for elderly persons, psychiatric institutions, prisons, etc.

The population of people who still live in institutional settings in most Eastern European countries, as well as in some developed countries such as the Netherlands, Ireland, Germany, Spain and Greece (Kozma, Mansell, & Beadle-Brown, 2009; Tatlow-Golden et al., 2014) are people with moderate, severe and profound intellectual disabilities (ID). In the Republic of Serbia, most of these people also live in typical institutions with highly regulated restrictive environments (Brkić, Jugović, & Glumbić, 2014; Petrović, Stojisavljević, & Lukuć, 2016). A poor and diminished social experience in institutions does not stimulate the development of their social skills. As a result, these individuals have an external locus of control, low self-esteem and self-efficacy, externalizing and internalizing behavior problems (Tyrer et al., 2006). Apart from that, the aging process itself causes physical disorders, cognitive decline and mental health problems (for a review, see Alcedo, Fontanil, Solís, Pedrosa & Aguado, 2017).

Bearing in mind that many emotional and behavioral problems may pose a risk to the health or safety of a person and/or those in his/her immediate environment (McVilly, 2002), medical treatment was prevalent in institutions, which resulted in side effects (O'Dwyer et al., 2017). In recent years, the positive influence of various alternative and complementary therapies applied in treating people with ID, including the application of various horticultural interventions, is being mentioned more frequently. Kim and colleagues (Kim, Park, Song, & Son, 2012) report findings that indicate a positive influence on the improvements in attention and motivation in children with ID, sociality and social relationships, self-concept and linguistic communication skills. It was also found that purposeful gardening activities reduce inappropriate behavior and stress and strengthen self-confidence and self-efficacy in children with ID. Positive effects of various programs using plants and gardens mainly refer to children and youth with ID, while their effects on adults with ID have not been extensively studied (Lai, Ho, Kwan, Fung, & Mak, 2017).

Bearing in mind the lack of empirical findings on the effects of horticultural activities in adults with ID, specifically in people with moderate intellectual disability, the research was conducted with the aim to determine the impact of TH on psychosocial aspects of functioning in institutional settings.

## *METHODS*

### *Participants and Location*

The research was conducted in a large social protection institution in Belgrade, which, in accordance with the Law on Social Protection of the Republic of Serbia, residentially accommodates around 300 people

with intellectual disabilities. It is located in the suburbs of Belgrade, covering 18 hectares of land in a pleasant green environment. Before the research process began, the researchers explained the purpose of the research to the management and professional team members of the Institution. The whole research study was conducted in accordance with the ethical standards Declaration of Helsinki.

First, sociodemographic data was collected and the sample was selected. Data on gender, age and the level of intellectual functioning were taken from medical-psychological records. Persons with sensory and physical disabilities and allergies were excluded from the sample. The presence of moderate intellectual disability was documented in 80 participants. All of the participants were diagnosed in childhood, and the clinical picture of moderate intellectual disability was confirmed for each participant by a psychiatrist before the study began. After basic sociodemographic data was collected, the participants were randomly divided into two groups, each including 40 participants. Both groups were acquainted with the plan of activities in detail, and each participant could state whether or not they wanted to participate in the research. They were assured that there would be no penalties, regardless of when they withdrew from the study. At that point, 12 participants withdrew. They were also informed that they could withdraw from the research at any time, which did not happen. Finally, the sample included 68 participants, 21 to 47 years of age ( $M=30.10$ ;  $SD=7.47$ ). The first, experimental group (EG), included 33 (48.5%) participants, while the control group (CG) included 35 (51.5%) participants. There were 17 (51.5%) male and 16 (48.5%) female participants in the EG, while the CG consisted of 20 (57.1%) male and 15 (42.9%) female participants. Gender and age of the participants were uniform ( $\chi^2=0.499$ ;  $p=.480$ ).

### *Procedure*

With regard to the fact that TH is a relatively new field in empirical research, and that it is still unexplored in Serbia, as well as the fact that there are no registered horticultural therapists, our study was conducted in collaboration with the Faculty of Forestry - Department of Landscape Architecture and Horticulture and the Faculty of Special Education and Rehabilitation – Department of Special Education and Rehabilitation of People with Mental Difficulties. The applied TH program was jointly created by the authors of the study, two landscape architects (LA1 and LA2), and three special educators (SER1, SER2 and SER3) before the beginning of the study. While designing the program, basic principles of working with persons with moderate ID were respected, with special emphasis on safety measures (e.g. eliminating toxic plants, sharp objects, etc.). The program includes seven areas, each consisting of four types of activities: (1) Maintenance of planters (hand-weeding; tool-

weeding; collecting waste with hands; watering with cans); (2) Sowing (making sowing rows/holes; separation of seeds; sowing; putting dirt in seed holes with hands); (3) Creating support (transferring material; staking sticks; staking pickets; dragging rope); (4) Care and maintenance of garden beds (tool-weeding; hand-weeding; collecting and transporting waste with wheels; watering with a hose); (5) Planting (leveling the soil with a rake; digging planting holes; planting in garden beds; putting dirt over plants with tools); (6) Replanting (digging the seedlings up with tools; placing them in crates; transferring them to planting site; planting in planters) and (7) Harvest (harvesting vegetables; picking fruit from trees; washing fruit/vegetables, preparing (removing leaves) and sorting).

The total research period was five months, from March to July 2018, and it included three phases. In the first phase, the participants were assessed (pre-test) by special educators, while landscape architects were in charge of preparing the materials, tools and equipment for TH, as well as setting up a provisional fence in the Institution's courtyard around the area designated for the application of TH program. During the second phase, TH was conducted over 10 consecutive weeks in 90-minute sessions, three times a week. The intervention program included the total of 30 sessions. Activities within Sowing, Planting and Harvesting lasted for two weeks each due to heavy workload, while the other activities lasted one week each. TH program in the experimental group was carried out by landscape architects (LA1 and LA2) with support from two special educators (SER1 and SER2). In order to avoid "special treatment" the control group engaged in free outdoor recreational activities (ball games, walking, running) in the Institution courtyard, in the presence of two special educators (one researcher, SER3 and one educator/therapist from the Institution). Due to living in institutional settings, both groups of participants had the same daily routine, from waking up, through daily activities, to going to bed. Thus, the impact of various additional interventions or treatments was eliminated. The third research phase was performed immediately after the completion of the TH program, when the post-test was conducted.

### *Instruments*

*The Social Skills Rating System* – SSRS (Gresham & Elliot, 1990), was used to assess social skills and behavioral problems. It includes forms for different sources of assessment. In our paper, we used the form for adults. Therapists/educators, special educators by profession, were the informants. Since they had known the participants for at least two years, they used a three-point scale (1 – never, 3 – sometimes, and 5 – always) to assess the frequency of behaviors on two instrument scales: a) *Social Skills Scale* which measures positive social behaviors (30 items, 3x10) and consists of the following subscales, each including 10 items: *Coop-*

eration (behaviors such as helping others, sharing things and respecting rules and guidelines), *Assertion* (behaviors such as asking others for information or responding to the actions of others), and *Self-Control* (behaviors that are manifested in conflict situations, such as responding appropriately to provocation, or in situations where there is no conflict but where it is necessary to compromise attitudes) and b) *Problem Behaviors Scale* which measures behaviors that can interfere with the development of positive social skills (18 items, 3x6). It assesses behavior in three subscales: *Externalizing Problems* (e.g. aggressive acts and poor temper control), *Internalizing Problems* (e.g. sadness and anxiety) and *Hyperactivity* (e.g. fidgeting and impulsive acts). Internal consistency values before and after TH intervention were very reliable (Table 1).

Table 1. Cronbach's  $\alpha$  coefficients for SSRS, before and after TH

The Social Skills Rating System	EG (N=33)		CG (N=35)	
	pre-test	post-test	pre-test	post-test
<i>Social Skills Scale</i>	.955	.928	.972	.969
Cooperation	.949	.889	.950	.937
Assertion	.959	.928	.963	.962
Self-Control	.925	.908	.961	.962
<i>Problem Behaviors Scale</i>	.911	.856	.909	.905
Externalizing Problems	.910	.728	.911	.890
Internalizing Problems	.882	.720	.842	.837
Hyperactivity	.890	.866	.870	.861

Starting from the fact that self-efficacy refers to specific, situational assessment of one's own efficacy, with the precise prediction of human behavior being possible only by measures of self-efficacy, which are precisely adapted and narrowly limited to the area of the assessed psychic functioning (Bandura, 1977), the authors designed *Self-Efficacy for Gardening Scale* for the purpose of this research. The instrument includes twelve items (I can: 1) isolate and count the seeds, 2) sow the seeds, 3) pull out weeds by hand, 4) collect the weeds and transfer them to the waste yard, 5) stab plant support into the ground, 6) tie a rope to a picket, 7) water a plant, 8) pull out/remove weeds with a hoe 9) flatten the ground with rakes, 10) plant a plant, 11) remove the seedling from the ground and 12) move the seedling into a crate). The researchers (SER 1,2,3) read the items to participants individually. In the pre-test, each item was additionally explained by visual support in the form of a short video clip on a laptop. In the post-test, the researchers provided additional verbal explanations as needed, which were uniform for all participants and provided in equally detailed scope. Since the CG did not take part in plant-related activities, the participants from this group took care of the green area within the Institution for 15-30 minutes once a week (e.g. pull-

ing out weeds, watering plants, collecting leaves), in order to apply the designed self-efficacy instrument. The answers for this instrument were distributed from 1 (completely disagree) to 5 (completely agree). The theoretical range of responses was from 12 to 60 maximum. The result of Cronbach's  $\alpha$  coefficient for testing internal consistency before TH program was  $\alpha=.869$ , and  $\alpha=.816$  after the program for the experimental group, while it was  $\alpha=.897$  and  $\alpha=.905$  for the control group.

### *Statistical Analysis*

The data was analyzed using descriptive statistics (means, standard deviations, frequency) and bivariate statistical methods (t-test, Chi-square test). Cronbach's alpha was used to investigate internal consistency of questionnaire (sub)scales. In order to test the treatment impact, we used repeated measurements, with the group (EG – CG) as the between subject factor and testing (pre-post) as the within subject factor. The significant threshold was 0.05 ( $p < .05$ ).

## *RESULTS*

Before the intervention, there were no statistically significant differences between EG and CG in the obtained results of the applied subscales of *The Social Skills Rating System* in adults with moderate ID in institutional settings. The differences were determined after the intervention in all subscales except in the Assertion scale (Table 2).

Gender analysis was conducted in order to obtain detailed information on the impact of TH on EG (Table 3). The obtained data indicate that TH had equal impact on participants of both genders within *Cooperation*, *Externalizing Problems* and *Hyperactivity* subscales. Also, the effect was greater for male participants in all subscales.

There was no statistically significant difference in the result obtained from the Self-efficacy scale before the intervention (Table 4). In EG participants, a statistically significant difference was determined in the level of Self-efficacy before and after the intervention, while no such difference was determined in CG participants.

Further analysis tested the difference of TH impact on Self-efficacy with regard to gender within EG, and no statistically significant differences were determined ( $F=.004$ ;  $p=.952$ ), i.e. it was determined that TH had equal impact on participants of both genders.

Table 2. Comparison of the results for SSRS between EG-CG

SSS		EG (N=33)		CG (N=35)		t	p
		Mean	SD	Mean	SD		
CO	Pre-test	43.48	8.03	41.74	8.24	.882	.381
	Post-test	46.90	4.67	42.37	8.06	2.782	.006
		F=22.970; p=.000; $\eta^2=.426$		F=4.993; p=.032; $\eta^2=.128$			
AS	Pre-test	29.69	11.42	32.85	12.13	-1.104	.273
	Post-test	37.69	9.08	34.37	12.31	1.272	.208
		F=111.15; p=.000; $\eta^2=.776$		F=16.365; p=.000; $\eta^2=.325$			
SC	Pre-test	34.38	9.14	34.45	10.60	.012	.991
	Post-test	41.45	7.21	35.65	10.64	2.643	.010
		F=76.452; p=.000; $\eta^2=.705$		F=6.811; p=.013; $\eta^2=.167$			
$\Sigma$	Pre-test	107.66	23.18	109.05	27.11	-0.217	.801
	Post-test	127.75	17.25	112.40	26.98	2.797	.007
		F=86.936; p=.000; $\eta^2=.737$		F=21.383; p=.000; $\eta^2=.386$			
PBS		EG (N=33)		CG (N=35)		t	p
		Mean	SD	Mean	SD		
EP	Pre-test	10.69	4.85	10.94	4.83	-.209	.835
	Post-test	8.27	2.29	10.05	3.95	-2.291	.026
		F=19.761; p=.000; $\eta^2=.382$		F=6.690; p=.014; $\eta^2=.164$			
IP	Pre-test	12.30	5.30	12.31	4.61	-.009	.835
	Post-test	9.00	2.77	11.88	4.64	-3.131	.003
		F=33.397; p=.000; $\eta^2=.511$		F=1.452; p=.237; $\eta^2=.041$			
HA	Pre-test	9.90	5.02	10.65	4.41	-0.653	.516
	Post-test	8.18	3.37	10.68	4.28	-2.636	.010
		F=13.666; p=.001; $\eta^2=.299$		F=.000; p=1.000; $\eta^2=.000$			
$\Sigma$	Pre-test	32.90	11.88	33.91	11.12	-.360	.720
	Post-test	25.45	6.59	32.60	9.97	-3.462	.001
		F=36.626; p=.000; $\eta^2=.534$		F=3.098; p=.087; $\eta^2=.084$			

Note: SSS-Social Skills Scale; CO-Cooperation; AS-Assertion; SC-Self-Control; PBS-Problem Behaviors Scale; EP-Externalizing Problems; IP- Internalizing Problems; HA-Hyperactivity



Table 3. The impact of TH with regard to gender

	SSS	Male (N=17)		Female (N=16)		F	p	$\eta^2$
		Mean	SD	Mean	SD			
CO	Pre-test	40.82	8.56	46.06	6.69	2.580	.119	.079
	Post-test	46.11	4.87	47.80	4.43			
		F=21.564; p=.000; $\eta^2=.574$		F=5.587; p=.033; $\eta^2=.285$				
AS	Pre-test	25.52	10.64	34.12	10.81	11.651	.002	.273
	Post-test	35.70	9.29	39.81	8.64			
		F=101.154; p=.000; $\eta^2=.863$		F=47.501; p=.000; $\eta^2=.760$				
SC	Pre-test	31.94	7.85	37.18	9.88	18.567	.000	.375
	Post-test	41.58	6.37	41.31	8.21			
		F=91.906; p=.000; $\eta^2=.851$		F=28.810; p=.000; $\eta^2=.658$				
$\Sigma$	Pre-test	98.29	20.84	117.93	22.58	5.756	.023	.161
	Post-test	123.41	15.72	126.18	16.39			
		F=99.439; p=.000; $\eta^2=.861$		F=16.559; p=.001; $\eta^2=.542$				
	PBS	Male (N=17)		Female (N=16)		F	p	$\eta^2$
		Mean	SD	Mean	SD			
EP	Pre-test	11.82	5.65	9.50	3.63	2.860	.101	.084
	Post-test	8.85	2.74	8.00	1.75			
		F=13.445; p=.002; $\eta^2=.457$		F=7.941; p=.001; $\eta^2=.346$				
IP	Pre-test	14.41	5.56	10.06	4.05	4.426	.044	.125
	Post-test	10.00	3.24	7.93	1.69			
		F=32.258; p=.000; $\eta^2=.668$		F=7.868; p=.013; $\eta^2=.344$				
HA	Pre-test	11.82	5.60	7.81	3.38	2.378	.133	.071
	Post-test	9.41	4.1	6.87	1.58			
		F=12.349; p=.002; $\eta^2=.436$		F=2.791; p=.116; $\eta^2=.157$				
$\Sigma$	Pre-test	38.05	12.67	27.43	8.25	5.695	.023	.155
	Post-test	27.94	7.72	22.81	3.81			
		F=30.538; p=.000; $\eta^2=.656$		F=11.621; p=.004; $\eta^2=.437$				

Note: SSS-Social Skills Scale; CO-Cooperation; AS-Assertion; SC-Self-Control; PBS-Problem Behaviors Scale; EP-Externalizing Problems; IP- Internalizing Problems; HA-Hyperactivity

Table 4. Comparative results for Self-efficacy for Gardening Scale

	EG (N=33)		CG (N=35)		t	p	
	Mean	SD	Mean	SD			
Pre-test	45.24	10.42	40.42	10.82	1.866	.066	
Post-test	55.00	6.64	40.54	11.25	6.388	.000	
		F=70.110; p=.000; $\eta^2=.687$		F=.126; p=.724; $\eta^2=.004$			

## DISCUSSION

People with ID age similarly to people without ID, however, they are predisposed to a higher prevalence of pre-existing and age-related health issues, such as cognitive decline, diminished adaptive abilities, affective and anxiety disorders (Myrbakk & von Tetzchner, 2008; Glaesser, & Perkins, 2013). Preventive effects of horticultural interventions on psychological and behavioral aging symptoms were identified in typical elderly people (Kamioka, et al., 2014; Lin & Yen, 2018), while the positive effects of horticulture are especially significant for elderly people in long-term care facilities (Nicholas, Giang, & Yap, 2019).

Literature review determined that behavioral problems in people with ID often coincide with functional decline and that they are most pronounced in people living in institutional settings (McClintock, Hall, & Oliver, 2003; Tamaš, 2016). Since the participants from our sample are in this category, the results obtained in *Problem Behavior Scale* after the implementation of TH program were encouraging. A significant statistical difference for this scale was determined in EG, while it was not determined in the control group. The influence of TH was determined in all subscales (*Externalizing Problems, Internalizing Problems and Hyperactivity*) with stronger effect on male participants, in whom various forms of behavior problems occur more frequently (McClintock et al., 2003; Tyrer et al., 2006). The designed TH program influenced the reduction of externalizing behavior problems (rage attacks, quarrel and impulsive reactions) in EG (38%). That is important information because there is a broad consensus that behavioral problems create significant challenges for support providers (Brown, Brown, & Dibiasio, 2013) especially in institutional settings. The results obtained after recreational activities explain 16% of the variance and suggest the possibility of applying other types of outdoor treatments, which may focus on modifying externalizing behavioral problems in adults with moderate ID. On the other hand, the results of the control group do not show statistically significant differences in *Hyperactivity* and *Internalizing Problems* subscales, which is why we can conclude that TH is a more effective form of treatment than recreational activities in these behaviors. Expressing and sublimating negative behaviors through creative destructive actions such as cutting, breaking, and crumpling material, etc. for various horticultural activities may have the potential to improve attention and hyperactivity (Kim et al., 2012, p. 322). Apart from that, the implemented TH program showed a significant effect on reducing internalizing behavioral problems (sadness, depression, anxiety, withdrawal) in EG participants. A positive influence of various horticultural interventions on certain manifestations of internalizing disorders, primarily depression and anxiety, was confirmed in both typical population (Beyer et al., 2014; Gonzalez, Hartig, Patil, Martinsen, & Kirkevold,

2011; Kamioka et al., 2014; Nicholas et al., 2019), and in persons with disabilities (Wilson & Christensen, 2011).

The results of *Social Skills Scale* obtained before the intervention showed that there were no differences between the research groups, and that differences were determined after the program was implemented. A positive effect of TH (74%) was determined for *Social Skills Scale* (Table 2) which is in accordance with the results of South Korean researchers (Kim et al., 2012; Kim, Cho, Park, Joo, & Son, 2008). Therefore, we believe that a professionally designed outdoor program with plants can be applied as a complementary treatment to existing occupational or recreational therapies within an active and quality aging program in an institutional setting.

The literature states that activities in natural environments improve trust, increase the number of friends and group cohesion in people with disabilities (Chapman, 2000; Mustapa, Maliki, & Hamzah, 2015), which was confirmed by our results for *Social Skills Scale* in both groups of participants. The control group participated in outdoor recreational activities, which improve social skills and experience in people with intellectual disability (McGuire & McDonnell, 2008), but their influence on our participants was smaller than the influence of TH. TH is also an outdoor program, but all the activities within it were group activities requiring mutual cooperation (joint separation of seeds, handing the tools, transferring materials, etc.) which allowed stronger interaction among the participants. The average values were high in *Cooperation* subscale, which is equally effective for participants of both genders. Similar results were obtained by authors of a study conducted during a 90-day program of social and therapeutic horticulture in a heterogeneous group of vulnerable participants, predominantly with a learning disability (Sempik et al., 2014). The influence of TH was also significant in *Self-Control* subscale, which is a complex and problematic area in persons with ID. Since the effects were strong, especially in male participants, we believe that, in institutional settings, this form of treatment can be effective for the development of positive behavior and mood, i.e. that it can contribute to better everyday functioning of a user.

It is interesting that statistically significant differences between EG and CG were not determined after the intervention with regard to the *Assertion* subscale. We assume that the entire context of the development and functioning of persons with moderate ID in institutional settings does not contribute to the development and manifestation of this form of behavior, because they are not exposed to different situations (e.g. demanding their rights, expressing wishes, rejecting unjustified demands, etc.) from which this dimension of social skills would develop. After the intervention, the results showed that the influence of recreational activities explained about 33% of variance, while 78% of variance can be attributed to

the effect of the TH program, which was stronger in male participants. In addition to following working instructions, participating in TH enabled the participants to choose materials and equipment, talk about program activities, thus improving their sense of achievement and self-confidence which are thought to improve their assertiveness (Kim et al., 2012).

Big influence of TH on self-efficacy of EG participants, no difference to gender, indicates the improvement in the beliefs of persons with moderate ID about their own abilities to organize and perform certain actions necessary to achieve the desired goal. Positive effects of a twelve-week therapeutic horticulture program on social self-efficacy in adults with ID were determined in research conducted in Hong Kong (Lai et al., 2017). These authors stated that the intervention was very pleasant for the participants and that it promoted the competency domain within the assessed Quality of Life construct. This certainly confirms the claim that performance in one area tends to generalize to other areas or activities (Bandura, 1986). However, due to the fact that very little research has been conducted on this topic, we will observe our results only with regard to participants' functioning in gardening activities, and not as any other aspect of self-efficacy, which can be the subject of future research studies.

According to our research, the psychosocial benefits of TH have the potential to be quite significant in persons with moderate ID in institutional settings. Our key findings are the results obtained for all subscales within *The Social Skills Rating System*. TH had a significant influence on the reduction of various forms of problematic behavior and the improvement of social skills and self-efficacy.

Favorable findings of TH application can have a positive impact, not only on better quality of life of these individuals in the institution, but also on the staff, which generally implies a more relaxed atmosphere within the institution. Based on the obtained results on the efficacy of TH, we believe that it can easily be included as a component of preventive health care programs for people with ID in institutional settings.

Since this is the first study that applied horticultural activities in working with persons with moderate ID in Republic of Serbia, there are certain limitations. The first limitations relate to the AB design study and the fact that researchers could not control every potentially intervening variable. The second refers to the fact that the study was not blind to the researchers. Also, the effects of the intervention were monitored immediately after the completion of TH. The recommendation to future researchers is to evaluate long-term effects after three or six months. Since the research included adults with moderate ID in institutional settings, the results cannot be generalized to other persons with ID who live in different environments, who are younger, or who have a higher or lower level of intellectual functioning.

By summing up the obtained results on the effects of applying TH program as a complementary treatment of people with moderate ID, we can conclude that TH provides empirical support for improving their psychosocial functioning in institutional settings, especially in countries in which this is the only type of housing. With regard to the potentials of the TH program, further research is needed to explore the processes of such experiences, share evidence of the effectiveness of horticultural interventions and promote it.

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## **УТИЦАЈ ТЕРАПЕУТСКЕ ХОРТИКУЛТУРЕ НА ПСИХОСОЦИЈАЛНО ФУНКЦИОНИСАЊЕ ОДРАСЛИХ ОСОБА СА ИНТЕЛЕКТУАЛНОМ ОМЕТЕНОШЋУ**

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### **Резиме**

Терапеутска хортикултура (ТХ) је неинванзивни супортивни третман путем којег се учесници активно или пасивно укључују у различите активности са биљкама ради унапређења свог благостања. Ово истраживање има за циљ да утврди утицај ТХ на психосоцијалне аспекте функционисања одраслих особа са интелектуалном ометеношћу у институционалном смештају. С обзиром да је ТХ релативно нова емпиријска област, као и чињенице да у Републици Србији не постоји регистровани хортикултурни терапеут, примењени програм ТХ су заједно креирали аутори студије, два пејзажна архитекта и три дефектолога. Програм ТХ обухвата седам области, од којих се свака састоји од четири врста хортикултурних активности. Реализован је током 10 континуираних недеља (3 пута недељно у трајању од 90 минута). Узорком је обухваћено 68 испитаника са уме-

реном интелектуалном ометеношћу, старости од 21 до 47 година, подељених у две групе. Прва, експериментална група укључује 33 учесника (17 мушких и 16 женских), док контролна група има 35 учесника (20 мушких и 15 женских). За процену социјалних вештина и бихевиоралних проблема коришћен је Систем за процену социјалних вештина (The Social Skills Rating System – SSRS, Gresham & Elliot, 1990), док је процена самоефикасности извршена путем дизајниране Скале за процену самоефикасности у хортикултури. Пре почетка интервенције извршене су процене испитаника и нису утврђене статистички значајне разлике између експерименталне и контролне групе. Након примене програма ТХ, код испитаника експерименталне групе утврђено је значајно смањење различитих облика интернализованих и екстернализованих проблема у понашању, као и унапређење социјалних вештина и самоефикасности. Позитиван утицај терапеутске хортикултуре има већи утицај на испитанике мушког пола. Добијени резултати пружају иницијалну емпиријску подршку у примени овог комплементарног третмана код особа са умереном ИО у циљу побољшања њиховог психосоцијалног функционисања у институционалним окружењима, посебно у земљама у којима је ово најчешћи тип становања.



## THE DEVELOPMENT OF PSYCHO-ONCOLOGY WORLDWIDE AND IN SERBIA - FIRST STEPS AND FUTURE PLANS

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### Abstract

Psycho-oncology is a well-developed field in developed countries around the world and in Europe, both theoretically and practically. Psycho-oncology refers to the provision of psychological and/or psychotherapeutic assistance and support to persons with malignant diseases and their families. Twenty-two world congresses in psycho-oncology have been held. The existence of many published books, peer reviewed journal articles, numerous courses and specialization in this area attests to the importance of progress in this field. This paper serves to highlight the development of psycho-oncology in the world, with special emphasis on the current state of the discipline in Serbia. The number of publications and scientific research in the field are still limited and the number of engaged professionals is insufficient to effectively implement psycho-oncology in the Serbian health system. Nonetheless, there is reason for optimism. Pursuant to Article 38, paragraph 1. of the Law on the Planning System (Official Gazette of RS, No. 30/18), the Government of RS has adopted the *Program for the Advancement of Cancer Control in the Republic of Serbia* for the period between 2020 and 2022. The Action Plan for the Implementation of the *Program for the Advancement of Cancer Control* pays special attention to the development and implementation of psychosocial services and their integration into oncological treatment. The plan specifically envisions the establishment of 6 and 8 psycho-oncological services and counseling centers in health institutions in the secondary/tertiary level, in which cancer patients are treated, in 2021 and 2022 respectively. If the intended plan is realized, it will be a huge step forward and the beginning of the systematic, earnest development of psycho-oncology in Serbia.

**Key words:** cancer patients, psycho-oncology, psycho-social aspects of care, psycho-oncological services, counseling centers

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## РАЗВОЈ ПСИХООНКОЛОГИЈЕ У СВЕТУ И У СРБИЈИ – ПРВИ КОРАЦИ И БУДУЋИ ПЛАНОВИ

### Апстракт

Психонкологија је у развијеним земљама света и Европе развијена област, како у научно-истраживачким тако и у практичним, примењеним аспектима који се односе на пружање психолошке и/или психотерапијске помоћи и подршке особама оболелим од малигних болести и њиховим породицама. До сада је одржано 22 светска Конгреса из психонкологије. Много објављених књига, високо индексирани часописи, бројни курсеви и он лине курикулуми, специјализације и субспецијализације из ове области говоре о развијености области. Циљ овог рада је да укаже на развијеност психонкологије у свету уз посебан осврт на актуелни статус дисциплине у нашој земљи. Недовољан број ангажованих професионалаца у пракси, и мали број публикација, научно-истраживачких и стручних радова указују на недовољну имплементираност психонкологије у здравствени систем Србије. Разлога за оптимизам ипак има. На основу члана 38. став 1. Закона о планском систему („Службени гласник РС”, бр. 30/18) Влада РС је донела *Програм за унапређење контроле рака у Републици Србији за период од 2020-2022 године*. Акционим планом за спровођење програма за унапређење контроле рака предвиђена је посебна мера која се односи на развој и спровођење психосоцијалних услуга и њихова интеграција у онколошко лечење што конкретно значи да се током 2021 године планира оснивање 6 а 2022 године 8 психонколошких служби или саветовалишта у здравственим установама секундарног/терцијарног нивоа у којима се лече онколошки пацијенти. Уколико се предвиђени план реализује то ће бити огроман корак и почетак системског, озбиљног развоја и примене психонкологије у Србији.

**Кључне речи:** онколошки пацијенти, психонкологија, психосоцијални аспекти лечења, психонколошки сервиси, саветодавни центри

### *THE DEVELOPMENT OF PSYCHO-ONCOLOGY<sup>1</sup>*

The successful development of psycho-oncology in the developed countries of the world and in Europe is reflected in the fact that 22 world congresses in the field have been held, with participants from over 40 countries of the world. The author of this report was invited to be a lecturer at the 19<sup>th</sup> World Psycho-Oncology Congress, which was held in Berlin. The title of the lecture was “Development of Psycho-Oncology in Serbia - first steps and future plans” and it was held as part of the symposium: Development of Psycho-Oncology in the Central-Eastern Europe. The symposium included representatives from our country, as well as col-

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<sup>1</sup> Part of this article was presented at the 19<sup>th</sup> World Congress of Psychooncology and published in Abstracts of the 19<sup>th</sup> World Congress of Psycho-oncology. Asribabayan Y., Klikovac, T. (2017). Psycho-oncology capacity building in Armenia and Serbia: first steps and future plans. Abstracts of the 19<sup>th</sup> World Congress of Psycho-oncology. 26 (3):50-51.

leagues from Armenia, Hungary, Slovenia, Russia and Romania (Asribabayan & Klikovac, 2017). World congresses in psycho-oncology have been held annually with several hundred experts from all parts of the world presenting scientific papers and challenging cases from clinical practice. The field is supported by numerous textbooks, highly respected journals, an International Society of Psycho-Oncology, as well as numerous courses and on-line curricula. Most specialized fields of oncology and psychology recognize the importance of further development in this area.

The subspecialty of psycho-oncology began to develop formally in the mid-1970s and *The Journal of Psychosocial Oncology*, established in 1983, was the first journal dedicated to the dissemination of current research in the field. Dr. Jimmie Holland is recognized as the primary founder of the field of psycho-oncology. In 1977, Dr. Holland worked with two colleagues to establish a full-time psychiatric service at Memorial Sloan Kettering Cancer Center in New York, USA, a program which is currently headed by Dr. William Breitbart. Dr. Holland's program was one of the first of its kind in cancer treatment, and trained its psychologists to specialize in issues specific to people living with cancer.

A few years before her death, Dr. Holland (2015) wrote:

“I am one of the few living today who have seen the evolution of psycho-oncology from its birth, through its adolescence, and now into its full maturity. This gives me an unusually broad perspective on the challenges and successes. Psycho-oncology is almost 40 years old, and much progress has been made in that short time. The discipline has an accepted place in the oncologic, psychological, and psychiatric community, both in clinical care and in research. Worldwide implementation of what we now know could greatly improve the psychological well-being and quality of life of patients with cancer” (Holland, Breitbart & Jacobsen, p. 6).

The development of Psycho-Oncology has been intensifying since 1984 when the International Psycho-oncology Society (IPOS) was established in the USA with the primary goal of improving the “human” side of cancer care globally. Important goals of the IPOS are:

- To foster international communication
- To educate professionals in psychosocial care across countries
- To advocate for making psychosocial care an integral part of total cancer care
- To examine social and cultural factors that impact quality of life and care

According to Holland, Breitbart & Jacobsen (2015):

“Psycho-oncology is defined as a subspecialty of clinical oncology relating to two dimensions: 1) psychological reactions of cancer patients and their families in all stages of the disease and 2) the psychological, social and behavioral factors that impact on cancer risk and survival”(p. 34).

The field of psycho-oncology is interdisciplinary. Psychosocial support for cancer patients addresses the psychological, social, existential, spiritual and other needs of persons with cancer throughout the cancer trajectory, including the assessment of personal considerations concerning treatment, rehabilitation, survival and palliative episodes (Pop, Postolica, Lupău & Dégi, 2016).

Cancer diagnosis almost always creates a crisis requiring adaptation to catastrophic information. Shock, confusion, anger, denial, disbelief, distress, isolated reactions and conditions of anxiety and depression are frequently associated with the beginning of the treatment of malignancy and the duration of the complex oncological treatment (Grassi et al., 2004; Grassi & Riba, 2012). Cancer diagnosis is a shocking experience itself, while the complex oncological treatment represents a life crisis both for the affected person and for the members of their family. Patients and families report a type of “psychic numbing” during the time of the beginning of the cancer treatment. The previously mentioned emotions and reactions to the diagnosis of a malignant disease are understandable and normal, but they can interfere with the many important, life-altering decisions to be made about treatment. Adequate communication with oncology patients from the beginning of treatment, during all phases of treatment, and after treatment, in the period of regular monitoring and control, is extremely important because patients are subject to shock, distress and various reactions or more complex conditions (anxiety, depression, declining quality of life, existential and spiritual crisis).

In 2009, the IPOS ([www.ipos-society.org](http://www.ipos-society.org)) proposed a new standard in quality cancer care (Holland, Watson, & Dunn, 2011) which states that distress should be measured as the 6<sup>th</sup> vital sign after temperature, blood pressure, heart rate, respiratory rate and pain.

The National Cancer Council Network (NCCN) defines distress as “a multifactorial, unpleasant experience of a psychologic (cognitive, behavioral, emotional), social, spiritual, and/or physical nature that may interfere with the ability to cope effectively with cancer, its physical symptoms, and its treatment. Early evaluation and screening for distress leads to early and timely management of psychologic distress, which in turn improves medical management. The panel for the Distress Management Guidelines recently added a new principles section including guidance on implementation of standards of psychosocial care for patients with cancer” (NCCN; 2021, p.1).

Among the rare research studies in the field of psycho-oncology in Serbia, there is one study conducted on a sample of 80 cancer patients<sup>2</sup>. The study showed that the great majority of patients experienced denial and depressive reactions such as disappointment, fears, and feelings of hopelessness and emptiness as significant distress signs at the beginning of cancer treatment. A large percentage of patients expressed that they felt sadness, despair, anger and anxiety about the future. A significant percentage of patients who participated in the study expressed that they had suicidal thoughts (40%) (Klikovac & Đurđević, 2010).

The assessment of distress on a sample of 40 oncology patients a year and a half after the end of their treatment showed that emotional problems (concern, anxiety, various fears, sadness and irritability and tension) in a significant percentage of patients were more pronounced compared to other problems in the post-treatment period (Klikovac, 2019; p.351).

Understanding the psychological, social, spiritual, and practical aspects of cancer and its treatment has therefore become a necessary part of multidisciplinary and complete cancer care. Recognizing different psychological reactions of cancer patients can be helpful for organizing adequate psycho-educational and psychosocial support, including psychotherapy for cancer patients and their families. Acknowledging the patients' psychological needs and organizing adequate psychological support are very important steps in integrating psycho-oncology into holistic anticancer treatments (Goerling & Mehnert, 2018).

Different topics, subject of both research and practical work, that indicate the development of the field of Psycho-oncology are: (1) psychological support for children, adolescents, young adults, adults and the elderly with cancer and psychological problems, (2) various psychological and psychotherapeutic interventions with patients with different tumor localizations (women - breast cancer, gynecological cancers; men - urological cancers, lung cancers, CNS tumors and late neuropsychological consequences, skin tumors, head and neck tumors and problems, etc.), (3) the evaluation of the different psychotherapeutic modalities in working with people with cancer, (4) QoL and patient well-being, (5) the importance of communication in oncology, (6) professional stress, burn-out and self care of medical staff, (7) the use of modern technologies (applications) in informing and providing support to patients, (8) palliative care – end of

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<sup>2</sup> This investigation was conducted at the Institute for Oncology and Radiology of Serbia, Belgrade, during the implementation of the European Educational Program (EEP) "Learning to live with cancer". At the beginning of the lectures, the patients were asked to fill in the self-describing questionnaire with 4 open questions: "Describe your common thoughts, feelings, behavior, and body reactions in the first 6 weeks of facing the fact that you were affected by cancer".

life care, (9) psychological aspects, survival and support after treatment, (10) evidence-based clinical research in Psycho-oncology, (11) Cancer care in low resource settings and (12) development of psychosocial services. There is great interest in utilizing modern technologies (e.g. websites and social networks and useful applications for smartphones) to prevent malignancies and promote healthy lifestyles, smoking cessation and diet control. Organizing forums and online support groups for the empowerment of patients is particularly interesting. Various programs and applications for practicing anti-stress breathing techniques, awareness of people who have been treated for malignancy, empowering young people facing cancer through a program to overcome the fear of relapse, sleep control applications to combat insomnia, applications to disseminate accurate information and knowledge about malignancies, and support programs for women with breast cancer and gynecological cancers represent some of the topics presented at the 21<sup>st</sup> World Congress of Psycho-oncology (Journal of Psychosocial Oncology Research and Practice, 2019).

### *THE DEVELOPMENT OF PSYCHO-ONCOLOGY IN SERBIA*

Several years ago, Serbian media extensively discussed the prevention of malignancies, and the importance of regular screening. However, despite the recent increase in the number of advocacy groups for patients with various malignancies and their activism in our country, support programs remain inadequate. Patients' needs for expert information, psychological and social support are not sufficiently aligned with, nor have they been effectively integrated into, our country's healthcare system in accordance with world and European standards. Epidemiological data indicates that approximately 40,000 people in Serbia suffer from some form of malignancy annually, and approximately 23,000 people, including 300 children, die of various malignant diseases<sup>3</sup> each year. The current dilemma in contemporary Serbian media and the Serbian academic community is: Did the bombing of Serbia with depleted uranium in 1999 influence the increasing number of new cases of malignant diseases?

There are four clinical oncology centers in Serbia and approximately 30 oncology wards around the country (6 of them are hemato-oncological wards for children and teens). In public hospitals, there are only 10 psychologists working specifically in oncology wards (4 for adults and 6 for children). The total number of psychologists is far from enough to respond to the increasing needs of adult oncology patients. The

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<sup>3</sup> Data presented according to publications of the Institute of Public Health »Dr. Milan Jovanović Batut«, Incidence and mortality rate from cancer in central Serbia (2009, 2015). Institute of Public Health »Dr. Milan Jovanović Batut«, Center for Prevention and Control of non-communicable Diseases, Belgrade

development of psycho-oncology, and especially pediatric psycho-oncology, in Serbia began in 2000 when the first psychologist was employed at the Department of Pediatric Psycho-Oncology of the Institute of Oncology and Radiology of Serbia. Between 2000 and 2010, psychologists joined medical teams in all 6 pediatric health care institutions in our country that had hemato-oncological and oncological wards treating children and adolescents suffering from various malignancies. The period from 2010 onwards has also been marked by the involvement of psychologists in the non-government sector, or more precisely, in various associations of parents of children suffering from malignant diseases. In our country, psycho-oncology and pediatric psycho-oncology developed primarily through practical work related to providing psychological support to adult patients, children, adolescents, and their parents during and after the completion of oncological treatments. These areas still lack comprehensive national research, monitoring studies and evaluations of the effectiveness of psychological practice, which are essential for the implementation of suitable theoretical and practical standards and models based on internationally accepted criteria of good practice. For Serbia, it is also important for psycho-oncology to further develop according to our specific socio-cultural features and the needs of ill children, and their families, in our care. In 2007, the Serbian Association for Psycho-Oncology (SAPO) was established in order to educate medical staff working with adult and pediatric oncology patients. At that time, the main focus were the occupational stress of medical staff, preventing burn-out, providing empathy and promoting successful communication skills. This effort included the first national project in collaboration with the Ministry of Health "SOS help-line for free psychological counseling and support for cancer patients and their families". During this project (October 2010 up to April 2011), a total of 2,748 patients and their families used the SOS help-line service (Klikovac, 2015; 726). Recently, new courses related to the fields of psycho-oncology and pediatric psycho-oncology have been introduced at the Faculty of Philosophy, University of Belgrade, for doctoral students at the Department of Psychology. Since October 2017, specific courses on Psycho-Oncology, Pediatric Psycho-oncology and Palliative care have been available to graduate students in psychology (Klikovac, 2018).

The *Republic Expert Commission for Support of Patients* was formed at the Ministry of Health of the Republic of Serbia in 2014/2015, with the task of highlighting the importance of adequate communication with patients and providing psychosocial assistance and support to persons suffering from the most severe diseases. One of the tasks of the Committee has been to write guidelines and standards of good practice similar to those in more developed healthcare systems, but adapted to Serbia's unique conditions (Klikovac, 2018; Šarić et al., 2018).

The *National Oncology Patients' Association* (e.g. NALOR) was founded with the main goal of lobbying for the rights of oncology patients (the right to psycho-social support, the right to adequate communication, right to innovative drugs in treatment, etc.)

### CONCLUSION

A significant step in the systemic development of psycho-oncology in Serbia is the current *Program for Improvement of Cancer Control in the Republic of Serbia* for the period 2020-2022, with an action plan for the implementation of a program for improving cancer control as well as the establishment of psycho-oncological services and counseling centers in secondary/tertiary level healthcare institutions for the treatment of oncological patients.

For the future development of Psycho-Oncology in Serbia, more research in the field of psycho-social oncology, more opportunities for specialized education, enhanced international cooperation and realistic national funding for the general development of psycho-oncology are needed. It is particularly important that SAPO expands its activities and joins its colleagues from other countries that make up the IPOS Federation group. While there is still much to do to bring Serbia's care of patients with cancer up to the level of more developed countries, there is reason for great optimism as our healthcare Ministry has begun to recognize the importance of these services in all areas of cancer treatments.

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## РАЗВОЈ ПСИХООНКОЛОГИЈЕ У СВЕТУ И У СРБИЈИ – ПРВИ КОРАЦИ И БУДУЋИ ПЛАНОВИ

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### Резиме

Психоонкологија почиње да се развија као независна научна дисциплина од 50-их година прошлог века, како на нивоу базичних истраживања тако и на нивоу практичних интервенција везаних за пружање психолошке подршке и психотерапијске помоћи особама оболелим од различитих малигнух болести и њиховим породицама. Предмет проучавања психо-онкологије, у најширем смислу, односи се на сагледавање утицаја психичких фактора у оквиру мултидимензионалног разумевања различитих малигнух болести и укључује дијагностичке, терапијске, едукативне и истраживачке активности психијатара и психолога у онколошким институцијама и онколошким тимовима. Конкретније, психоонкологија се бави проучавањем психолошких, социјалних, бихејвиоралних, духовних и етичких проблема особа оболелих од различитих малигнух болести. Последњих деценија у свету (САД, Канада, Аустралија) и у развијеним земљама Европе, дошло је до наглог развоја психоонкологије (у неким земљама психоонкологија је субспецијализација онкологије или субспецијализација из лиссон психијатрије и психо-соматске медицине или здравствене психологије), са покушајем разумевања мултиплих утицаја психо-социјалних фактора на онколошке пацијенте с циљем проналажења најбољих могућих психо-терапијских приступа и интервенција у свим фазама онколошког лечења. У процесу активног лечења пацијената са малигнуом болешћу али и након лечења, у периоду ремисије, не-

опходни су мултидисциплинаран приступ, активна партиципација пацијента и чланова породице као и стална комуникација са свим члановима медицинског тима. Развој и имплементирање психоонкологије као примењене и хуманистичке области савремене здравствене психологије у нашој земљи у прошлости се није одвијало и актуелно се не одвија континуирано и на системски осмишљен начин као што је то случај у развијенијим земљама Европе и света. Разлози су многобројни. Први разлог је спор процес мењања доминације старе парадигме био-медицинског модела ка новом био-психо-социјалном моделу који представља базу модернизовања сваког здравственог система. Разлике између био-медицинског и био-психо-социјалног модела су и концептуалне, теоријске, али се манифестују на практичном нивоу од опхођења према пацијенту, уважавања различитих потреба, поштовања права пацијената до разлика у сагледавању утицаја различитих психо-социјалних фактора у настанку и лечењу болести. Други разлог спорог развоја је свакако недостатак одговарајућих курсева и специјализација и субспецијализација из области психоонкологије у Србији. У том правцу је учињен један искорак и на Универзитету у Београду, на Филозофском факултету, на Катедри за Психологију у оквиру обавезног курса из Здравствене психологије на мастер студијама клиничког модула уведена су предавања о психоонкологији и педијатријској психоонкологији, а на докторским студијама је први пут од 2017. године уведен посебан изборни курс „Психоонкологија и палијативно збрињавање (психолошки аспекти)“, који је програмски уједначен са садржајима сличних курсева страних универзитета. Недостатак стручних истраживачких радова у области такође успорава имплементирање стандарда и модела добре праксе. Посебан проблем представља и незапошљавање довољног броја психолога у институције здравственог система у којима се онколошки пацијенти лече.

## THE SYSTEMATIC REVIEW OF SCHOOL-BASED PROGRAMS FOCUSED ON EXTERNALISING PROBLEMS IN STUDENTS

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### Abstract

School-based programs focused on externalizing problems in students are recognized as an important part of school life and work. The aim of this paper is the systematization of scientific studies in the form of systematic presentations and meta-analysis of school programs, in which externalizing problems in students is among the criteria for assessing the effectiveness of the program. Scientific results published in English in the last seven years are included in the systematization. Bases searched during research are: Google Scholar, PsycINFO, Web of Science (WOS), Education Resources Information Center (ERIC) and Scopus. The results of the research indicate that the most successful school-based interventions resulting in the prevention and reduction of externalizing problems are based on socio-emotional learning, that they are mostly implemented by teachers, that they are incorporated into the curriculum, and that their success depends on the quality of implementation.

**Key words:** externalizing problems, school-based interventions, systematic review, socio-emotional learning, prevention

## ПРЕГЛЕД ШКОЛСКИХ ПРОГРАМА УСМЕРЕНИХ НА ЕКСТЕРНАЛИЗОВАНЕ ПРОБЛЕМЕ У ПОНАШАЊУ УЧЕНИКА

### Апстракт

Школски програми којима се унапређује социјемоционални статус ученика препознају се као важан део школског живота и рада. Циљ рада представља систематизација научних студија у форми систематских приказа и метаанализа

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школских programa, где се међу критеријумима за процену ефективности programa налазе екстернализовани проблеми у понашању ученика. Укључени су научни резултати објављени у последњих седам година на енглеском језику. Претраживане су базе: Google Scholar, PsycINFO, Web of Science (WOS), Education Resources Information Center (ERIC) и Scopus. Резултати истраживања указују на то да су најуспешнији школски програми са исходом превенције и редукације екстернализованих проблема засноване на социоемоционалном учењу, да их најчешће спроводе наставници, да су инкорпориране у наставни план и програм, као и да њихова успешност пре свега зависи од квалитета примене.

**Кључне речи:** екстернализовани проблеми у понашању ученика, школски превентивни програми, социоемоционално учење, превенција

### INTRODUCTION

There has been an increased number of studies in research literature reporting on a general decreasing trend in more severe forms of juvenile delinquency along with a rising trend in behavioral problems in adolescents, which occasioned the need for change in the course of research from studying the delinquent population to studying the general population (Marte, *Adolescent Problem Behaviors: Delinquency, Aggression, and Drug Use*, 2008). Hence, as a consequence of the current politics of "normalisation", instead of the traditional politics of "pathologization," much research attention has been devoted to investigating developmental problems manifested in the adolescent population (Stakić, *A Handbook for Professionals in the Juvenile Justice System*, 2013). These are problems that need not fall under the term of delinquency (juridically) or of behavioral disorders (medically). The concept of externalizing problems arises from the empirical approach to investigating behavioral problems. Externalizing problems in adolescents involve conflicts with the environment - other people or rules of conduct - and include aggressive behavior and behaviors that violate rules. The manifestation of externalizing problems is characterized by open conflicts with the environment, weaker social competence and less receptivity to treatment in mental health services (Achenbach & Edelbrock, 1978). Externalizing problems encompass different dimensions of problems ranging from the most benign symptoms (for example lying) to the most severe ones along that continuum (for example, fights, thefts). Research findings indicate that, after anxiety, externalizing problems are the most frequent problem in the population of adolescents (Merikangas et al., 2010). Externalizing problems presume aggressive behavior and disobedience, i.e. breaking the rules (Gresham, Lane, MacMillan, & Bocian, 1999). Thus, externalizing problems in the general population can be interpreted as part of a normative development crisis on the one hand, and, more specifically, as an introduction to the more serious problems of juvenile delinquency and criminal behavior in adult age on the other.

School-based programs focused on externalizing problems usually aim to reduce the symptomatology or factors that have been found to mediate the onset of externalizing problems (Greenberg, Domitrovich & Bumbarger, 2000). School-based interventions are implemented at three levels: universal, selective and indicative. Research findings indicate that 10% to 25% of pupils exhibit the need for additional interventions in school, out of which 4% to 8% demand the most intensive interventions (Fuchs & Fuchs, 2017). There is a growing tendency in the science of prevention (*prevention science*) to include elements of promotion of child mental health and psychological well-being into preventive program designing (O'Connell, Boat, & Warner, 2009). It is based on a so-called "paradox of prevention," a phenomenon which was first observed by British epidemiologist Geoffrey Rose on the example of cardiovascular diseases (Rose, 1981) and which implies the observation that, epidemiologically, greater welfare is attained if a lower level risk is reduced in a wider population than if a higher risk level is reduced in just one part of the population. Gordon (1983), wanting to emphasize the population in which certain public health interventions are applied, gave a classification of universal, selective and indicated preventive measures. Universal measures, therefore, have the widest application, since they can be applied "anytime". On the example of the school population, universal preventive measures/programs are applied at the level of the whole class. Selective measures are applied to a subgroup that stands out from the rest of the population by a certain characteristic that makes them particularly risky. High-risk students are recognized as those who need additional support and are usually singled out during the implementation of the universal school program. Indicated preventive measures are applied in individuals who are at high enough risk (for example, if they show any symptoms) (Bašić, *Prevention Theories: Prevention of Behavioral Disorders and Risky Behaviors of Children and Youth* 2009; Gordon, 1983). Evaluation studies of school-based interventions refer to research evidence of the higher effects of selective and indicative interventions in relation to universal ones (Sanchez et al., 2018). However, in the interpretation of findings, even the authors confine themselves to a phenomenon which indicates that, regardless of the official data on effectiveness, universal interventions can produce changes in the wider population so that eventually the effects can be more significant. The second advantage is that there is no stigmatization, resulting in the greater participation in programs of parents and the community (Sanchez et al., 2018). Thirdly, greater benefit from universal programs can be attributed to easier generalization of adopted skills in peer surroundings. Authors (Florić, Pavlović & Ninković, 2020) emphasize the fact that preventive interventions should rely on an "effect of peers" in the process of adopting positive developmental outcomes. The focus of specialists who work on the

prevention of behavioral problems is actually on universal prevention. Prevention deals with averting problems before they have occurred, by postponing an onset of behavioral problem, particularly in risk groups, decreasing the damage, or the effect which behavioral problems can have, encouraging knowledge, viewpoints and behavior by which emotional and psychological well-being is being enhanced and promoting institutional politics of the state and the community in the direction of the physical, emotional and social welfare of an entire community (Romano & Hage, 2000).

Children with externalizing problems more often suffer from a lack of social skills, and cognitive distortions and deficits, which both contribute to the problems and are the consequence of those problems (Greenberg, Domitrovich, & Bumbarger, 2000). Neuropsychological factors contribute the most to behavioral problems (Moffitt, 1993). In this regard, researchers are trying to discover a critical combination of competences/skills whose development is crucial for the prevention of externalizing problems, such as emotional regulation, coping and problem solving (Modecki, Zimmer-Gembeck & Guerra, 2017). The aim of this paper is to consider the content, structure, methods of application and effects of programs that are applied in the school context and are aimed at/result in the prevention of externalized problems. The paper is designed as an analysis of scientific studies in the form of systematic reviews and meta-analysis of school-based interventions in which students' externalizing behavioral problems are among the criteria for the assessment of the effectiveness of the programs.

### *METHOD*

The criteria for scientific results to be included in the analysis were the following: 1) studies published between 2015 and 2021; 2) studies representing a systematic review or meta-analysis of school programs; 3) studies which summarized effects on either the prevention or the reduction of externalizing problems, aggressive behavior and/or rule-breaking behavior; 4) studies published in the English language; 5) studies involving population of children and adolescents and 6) studies including a review of specific programs considered independently of information on effectiveness. The following bases were searched: Google Scholar, PsycINFO, Web of Science (WOS), Education Resources Information Center (ERIC) and Scopus. The following key words were used in the search: systematic review/meta-analysis, school-based intervention/programs, prevention, externalizing problems, aggressive behavior, and rule-breaking behavior. The research process was conducted in the period between 1 February and 15 March 2021, concluding with the papers published by 9 March.

*RESEARCH RESULTS WITH DISCUSSION*

Of the 69 studies found while searching the aforementioned databases, 35 were analyzed for further screening while 10 meta-analyses and systematic reviews met the initial criteria and were selected for review. A more thorough analysis found that 31 articles included a review of individual interventions in the school context. Since we planned to include only systematic reviews/meta-analytical studies of school programs, studies that considered the effectiveness of individual interventions were consequently rejected. Of the remaining 35 studies in further screening, 25 studies focused on the presentation of programs, although a more detailed analysis determined that they do not actually measure externalizing problems as an outcome, and 10 meta-analyses and systematic reviews fully met the baseline criteria and were set aside for review. An overview of synthesized meta-analyses and systematic reviews of relevant research studies in reference to authors and results can be seen in Table 1.

*Table 1. School-based preventive interventions*

Outcome	Reference	Intervention/program
Externalizing problems	Dray et al., 2017	PATHS (Promoting Alternative Thinking Strategies), Cognitive Behavioral Therapy, Tri-Ministry study Class wide Social Skills Program, Penn State Adolescent Study.
Aggressive behavior, bullying, rule-breaking behavior, delinquency	Farrington, Gafney, Losel, Ttofi, 2016	World Health Organization's Health Promoting Schools framework; Antibullying programs (e.g., Olweus Bullying Prevention, Positive Action, Steps to Respect, Kiva, School-Wide Positive Behavioral Interventions and Supports).
Externalizing problems	Franklin et al., 2017	Steps to Respect, Promoting Alternative Thinking Strategies, Pennsylvania Resiliency Program for Adolescents, BRIDGE, Early Yes I Can, Creating a Peaceful School Learning Environment (CAPSLE), Second Step: Student Success Through Prevention, Penn Enhancement Program; and Penn Resiliency Program Adolescent, Behavioral Education Program (BEP), The CheckIn/Check-Out (CICO).

Externalizing problems, Bullying	Goldenberg et al., 2019	Kiva, Olweus Bullying Prevention, Positive Action, Steps to Respect, Friendly Schools, WITS, Health Promoting School, Flemish Anti Bullying, Restorative Whole School Approach, Fast Track, ZERO, SEAL, Seattle School Development Program, Steps to Respect, 4R', Raising Healthy Children, Inclusive.
Aggressive behavior	Healy, Valenteb, Caetanoc, Martinsa, & Sanchezb, 2020	Coping Power Program (CPP), PATHS (Promoting Alternative Thinking Strategies), Good Behavior Game (GBG), 4R', Tools for Getting Along (TFGA), Positive Action Program, the Michigan Model for Health (MMH)
Aggressive behavior, bullying, drug and alcohol abuse	Langford et al., 2015	Kiva, Steps to Respect, Gatehouse Project, Fourth R, Friendly Schools, Students for Peace, Dare Plus, Positive Action, Aban Aya.
Externalizing problems	O'Connor & Hayes, 2018	The CheckIn/Check-Out (CICO) program/ Behavior Education Programme (BEP), Rochester Resilience Project, New Beginnings.
Aggressive behavior, bullying, rule-breaking behavior	Paulus, Ohmann, & Popov, 2016	Good Behavior Game, I Can Problem Solve, Promoting Alternative Thinking Strategies, Olweus Bullying Prevention Programme, FAST TRACK. Incredible Years, Anger Coping Program; First Step to Success, Fast Track, PEP-TE, Art Room.
Aggressive behavior	Sanchez et al., 2018	Positive Action Program, Life Skills Training, School-Wide Positive Behavioral Interventions and Supports, Zippy's Friend, PATHS, Second Step: A Violence Prevention Curriculum, Fast Track, Tools for Getting Along, Good Behavior Game, Peace Builders, Second Step: A Violence Prevention Curriculum, IY Teacher Classroom Management, Classroom Centered, Family School Partnership, I Can Problem Solve, Positive Action, Master Mind; Check, Connect, Expect, Tools for Getting Along, First Step to Success; Prevent Teach Reinforce (PTR), Reducing Repetitions, Behavior Management, First Step to Success, Rochester Resilience Project.



Aggressive behavior rule-breaking externalizing problems	Waschbusch, Breaux, & Babinski, 2019	Good Behavior Game (GBG), I Can Problem Solve, Responding in Peaceful and Positive Way, School-wide PBIS, The peacemaker program, Second Step, PATH, Positive Action; Fast Track, Coping Power Programs, Linking the Interest of Families and Teachers.
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By a systematic review of school programs that, along with other problems of mental health, recognize externalizing behavior problems as well, a number of different programs applied in schools at many levels of implementation have been identified (Paulus, Ohmann, & Popov, 2016). At the universal level the following programs were singled out: *Good Behavior Game (GBG)*, *I Can Problem Solve, Promoting Alternative Thinking Strategies (PATHS)*, *Olweus Bullying Prevention Program* and *FAST TRACK*. At the selective level *YS, Incredible Years*, and the *Anger Coping Program* were singled out, while the programs singled out at the indicative level were *First Step to Success*, *Fast Track*, *PEP-TE*, and *Art Room*. Factors such as school climate, relationships between pupils and teachers, parents and teachers, teachers and public health service, together with the implementation quality of the program, have the highest impact on its success. It is recommended that school programs follow four steps in implementation: integration into the curriculum, training of school staff for program implementation, establishment and development of institutional support systems for program implementation, and establishment of cooperation with other child and adolescent protection systems (Paulus, Ohmann, & Popov, 2016).

The meta-analytical study which synthesized the effect of 43 primary school mental health programs with a total of 49 941 participating students revealed that best results (of interventions that are not integrated in curriculum) were achieved first by indicative programs (weak to moderate effect), then by selective and, finally, by universal programs. Moreover, interventions integrated into the curriculum, those which were directed towards externalizing problems, contained regulation skills in crisis situations and were applied several times a week, proved to be more successful (strong effects) (Sanchez et al., 2018).

A small but positive effect, which increased with the quality of program implementation, was established on the basis of the insight into 15 systematic reviews and meta-analyses which were aimed at showing the effectiveness of school-based interventions focused on aggressive and rule-breaking behavior. As a key component of almost all successful interventions, a cognitive behavioral orientation of programs was recognized. The programs were focused on students and/or on teach-

ers/environment. Fundamentally, a majority of displayed programs was a combination of social and emotional learning, and behavioral management and positive support (Waschbusch, Breaux, & Babinski, 2018). The results of evaluation studies indicate that socioemotional learning in combination with positive discipline achieves better results than on its own (Gueldner, Feuerborn, & Merrell, 2020).

Goldenberg et al. (Goldenberg et al., 2019) conducted a meta-analytical study which indicated that the most successful school-based socioemotional intervention are those applied at the level of a whole school. Besides behavioral problems, a specific internalizing problems, academic success and social and emotional status were observed as variables. Interventions taken into consideration included a set of activities incorporated into the curriculum, school culture and collaboration with family and community. A total of 45 studies (30 interventions), conducted among 496.299 students, were analyzed. The results demonstrated that programs achieved no statistically significant impact regarding academic success while for other criteria, including externalizing problems, statistically significant differences were observed. Quality of implementation appeared as one of the most significant factors that may affect the strength of the intervention effects. An important finding established by moderator analysis is that interventions focused, among other things, on externalizing behavior problems attain better results compared to those lacking that component (Goldenberg et al., 2019).

Farrington and his colleagues (Farrington et al., 2016) systematized systematic reviews of developmental preventive programs. The selection criteria for systematic reviews were the following: they unite community efforts towards preventing antisocial behavior, and they are oriented towards children and adolescents, i.e. to reducing individual, family and school risk factors. The following criteria were estimated: delinquency, criminal behavior, violence and aggressive behavior. Fifty systematic reviews were detected, half of them being systematic reviews of school-based interventions. All types of school-based preventive interventions proved effective.

The authors advocating a promotion of mental health in schools are promoting a continual implementation of programs. School programs should be based on social and emotional learning driven by the active participation of pupils, parents and the community, and on the assumption of a good implementation quality (inclusion, responsiveness, sensitivity to differences among pupils, training of staff and other) (Weist and Murray, 2007). In an attempt to systematize the results of the evaluation of public health interventions that are carried out in schools and are an integral part of the curriculum and school culture, and to envisage the inclusion of family and the environment in education, 67 studies have been identified (Langford et al., 2015). The observed variables, apart from

quality of nutrition and hygiene, physical activity, prevention of smoking, alcohol abuse, and sexual and reproductive health, included peer violence, aggressive behavior, and the students' psychological and emotional welfare. The interventions that focused on multiple risks were most effective. Anti-bullying interventions had a somewhat greater effect compared to those aimed at preventing violence, smoking, alcohol and drug abuse (Langford et al., 2015).

A group of authors chose a review of psychological and social interventions held by teachers for the purpose of improving mental health (Franklin et al., 2017). Externalizing and internalizing problems were taken as a criterion for assessing the effectiveness of interventions. A total of 25 studies met the search criteria, of which 19 referred to externalizing problems. The average age of the pupils who participated in the programs was 11.35 years. The interventions were mostly multimodal and included cognitive, emotional and behavioral stimulation. Unlike previous studies (for example, Ghiroldi, Scafuto, Montecucco, Presaghi, & Iani, 2020), this study revealed that interventions were more successful in regards to internalizing problems than the externalizing ones.

In order to analyze the effects of universal school-based programs focused on child and adolescent resilience, a meta-analysis was conducted with the following defined criteria: it included programs focused on a minimum of three protective factors, and it measured mental health criteria in children and adolescents ages 5 through 18 such as anxiety, depression symptoms, hyperactivity, behavior disorders, internalizing problems, externalizing problems, and apprehension (Dray et al., 2017). A total of 57 studies have been identified. Interventions proved effective on 4 out of the 7 previously mentioned mental health criteria measured: depressive behavior, externalizing problems, internalizing problems and anxiety. Four studies proved effective on externalizing problems. Two of those studies were conducted among children and two were conducted among adolescents. All were based on the cognitive and behavioral approaches. The competencies promoted in the programs that positively affected externalizing problems were: empathy, emotional regulation, self-control, social and emotional competencies, problem-solving skills, cooperation, communication and other (Dray et al., 2017).

The analysis also included a systematic review of studies published between 2010 and 2019, all of which estimated the effectiveness of psychological and social interventions in the school context and were focused on aggressive behavior in children ages 6 through 11 (Healy et al., 2020). Fifteen studies met the initial criteria, with a positive effect on aggressive behavior, through promoting the social and emotional status of students, being detected in 14 of those studies. The results of the analyses of moderation and mediation demonstrate that preventive programs are successful both with pupils who exhibit behavioral problems and with

pupils without such problems. Preventive programs proved particularly successful among pupils with poor self-management and/or high level of behavioral problems in general. Programs such as *Coping Power Program* (CPP), *Promoting Alternative Thinking Strategies* (PATHS) and *Good Behavior Game* (GBG) were reviewed in a number of the studies analyzed, while programs such as *Tools for Getting Along* (TFGA), *Positive Action Program*, *Michigan Model for Health* (MMH) and *4Rs Program* (Reading, Writing, Respect, and Resolution) were each examined in a separate study. By a systematic review of 17 indicative primary school-based interventions with children who exhibit indicative externalizing problems, it was determined that the programs proved successful both in individual application and in small groups.

The analysis of the research material revealed:

- 1) Terminological inconsistency: by inspecting the studies in Table 1 the choice of school-based programs was done in relation to mental health criterion (Paulus, Ohmann, & Popov, 2016), an approach focused on a whole school approach (Goldenberg et al., 2019), regarding whether the interventions are applied by the teachers (Franklin et al., 2017), whether they are focused on students' resilience (Dray et al., 2017) or whether it is the question of developmental preventive programs implemented in school (Farrington et al., 2016). By the insight into the contents of studies it can be perceived that according to their effectiveness the same or similar programs are recommended.
- 2) Effective programs are based on enhancing students' social and emotional status, and on behavioral management (empathy, self-management, problem-solving skills, collaboration and other) (Dray et al., 2017; Healy et al., 2020; Sanchez et al., 2018; Waschbusch, Breaux, & Babinski, 2019);
- 3) Successful programs basically have cognitive, emotional, and behavioral interventions

(Dray et al., 2017; Franklin et al., 2017; Waschbusch, Breaux, & Babinski, 2019). Moreover, the findings suggest that, on externalizing problems, school interventions based on a combined approach (e.g., cognitive behavioral interventions and peer mediation) are more successful than those based on a single approach (Park et al., 2019; Langford et al., 2015);

- 4) Most interventions are incorporated into the curriculum. The majority of the successful interventions are delivered by teachers during their regular teaching activities. The programs are more successful with populations that exhibit more social and emotional problems (Healy et al., 2020; Sanchez et al., 2018; Carroll, Houghton, Forrest, McCarthy Sanders, & O'Connor, 2020);

- 5) A success of interventions depends on quality of implementation and resource support (Goldenberg et al., 2019; Paulus, Ohmann, & Popov, 2016);
- 6) For assessing the externalizing problems while monitoring the program's effects the

Following instruments were used: Achenbach System of Empirically Based Assessment (ASEBA), Behavior Assessment System for Children (BASC), Strengths and Difficulties Questionnaire (SDQ), the Teacher Observation of Classroom Adaptation-Revised (TOCA-R) and others. We consider that it was necessary to emphasize the instruments by which externalizing problems were assessed in order to avoid confusion regarding the definition of criteria for monitoring the outcomes of interventions. In this regard, the assessment process provides a precise answer to the question of whether externalizing problems are actually measured as an outcome. The authors recognize the problems in defining terms in the field of special pedagogy (Fortness, Kavale, & Lopez, 1993).

### *CONCLUSION*

On the basis of the analysis presented, it can be concluded that schools should, within the framework of their teaching units, encourage the development of social and emotional skills (for example, recognizing and managing emotions, respecting the perspective of others, setting positive goals, making responsible decisions, and nurturing supportive relationships), as well as implement a precise protocol for additional support for students who need it. It seems that schools in Serbia are not yet ready enough for that. Due attention is paid to social and emotional competencies neither during schooling nor throughout the teachers' professional development (Tošić Radev, Pešikan, 2017). Despite the availability of a number of resources, research has revealed that only about 61% of US schools have implemented interventions within the framework of their curricula (Waschbusch, Breaux, & Babinski, 2018).

A clear distinction should be made between the effective and ineffective interventions when externalizing problems are in question, so that practitioners should not waste their resources and time. As illustration, we provide a brief overview stated in previous systematic reviews of frequently cited Good Behavior Game Programme (GBG, Good Behavior Game) recommending its complementary implementation with promoting alternative thinking strategies (PATS, *Promoting Alternative Thinking Strategies*) (Hart et al., 2020; Ialongo et al., 2019).

Good Behavior Game (GBG, *Good Behavior Game*) (Barrish, Saunders, & Wolf, 1969) is a program of social and emotional learning that showed its effectiveness both on the regular student population and on the population with specific learning disabilities. It has proved particu-

larly effective on pupils with externalizing problems. Teachers talk with the students about the behaviors that contribute to a stimulating learning environment and about behaviors that lead to undesirable consequences. In such a way, together they make rules for their class which are displayed in a visible place in the classroom. After this, the class is divided into several groups (most often two groups) based on the students' behavior. The teacher encourages the students' interactions in order to improve both individual and group-level behavior. The students' behavior is monitored and assessed at predetermined intervals. Negative actions can be noted beside a student's name, or the name of the group. Alternatively, each group can be assigned a certain number of cards which are to be confiscated in case of rule breaking. At the end of the game, the winning team receives public praise from the teacher and rewards in the form of items of non-material value (stickers, seals) or activities. There can be more than one winning team if a minimum number of offences that can be tolerated is agreed upon in advance. Every week and month, winners are announced and suitable prizes are awarded. The implementation of this program requires appropriate training.

In order to achieve both academic and psychosocial goals within education, it is necessary to encourage the efforts of teachers and educators to incorporate socio-emotional learning into teaching content.

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## ПРЕГЛЕД ШКОЛСКИХ ПРОГРАМА УСМЕРЕНИХ НА ЕКСТЕРНАЛИЗОВАНЕ ПРОБЛЕМЕ У ПОНАШАЊУ УЧЕНИКА

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### Резиме

Савремене тенденције у превенцији подразумевају да су промоција менталног здравља и психичко благостање младих све више саставни део програма превенције. Универзални превентивни програми епидемиолошки имају већу корист због смањења нижег нивоа ризика у широј популацији. Универзалне школске интервенције доносе позитивне промене у широј популацији, а у крајњој линији ефекти су значајнији него код селективних или индикативних. Избегава се стигматизација ученика, а учешће родитеља и заједнице је веће. Такође, већа корист универзалних програма може се приписати лакшој генерализацији стечених вештина у вршњачком окружењу. Циљ овог рада представља систематизација научних студија у форми систематских приказа и метаанализа школских програма, где се међу критеријумима за процену ефективности програма налазе екстернализовани проблеми у понашању ученика. Укључени су научни резултати објављени у последњих седам година на енглеском језику. Претраживане су базе: Google Scholar, PsycINFO, Web of Science (WOS), Education Resources Information Center (ERIC) и Scopus. Аутори су уочили велику терминологску недоследност у погледу критеријума по којима се систематизују школске интервенције (од менталног здравља, отпорности до индивидуалних социо-емоционалних вештина). Увид у садржај наведених студија показује да се исти или слични програми препоручују због њихове ефикасности. Ефикасни програми се заснивају на подизању социо-емоционалног статуса ученика и управљању понашањем (емпатија, саморегулација, вештине решавања проблема, сарадња итд.). Успешни програми у основи имају рационалну емоционалну оријентацију понашања. Већина интервенција је уграђена у наставни план и програм који примењују наставници. Програми су се показали успешнијим код квалитетне имплементације и ресурсне подршке и код популације са више социо-емоционалних проблема. Коришћени су следећи инструменти екстерне процене проблема у праћењу ефеката програма: Achenbach System of Empirically Based Assessment (ASEBA), Behavior Assessment System for Children (BASC), Strengths and Difficulties Questionnaire (SDQ) Meanwhile the Teacher Observation of Classroom Adaptation-Revised (TOCA-R) и др. На основу приказане анализе, препоручује се да школе у оквиру својих наставних јединица усвоје неговање социо-емоционалних вештина код ученика, као и прецизан протокол за додатну подршку ученицима којима је то потребно.



## DISTANCE LEARNING IN SERBIA – THE EXPERIENCE IN PRIMARY EDUCATION DURING THE COVID-19 CRISIS

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### Abstract

In this paper, we consider the response of the education system of the Republic of Serbia to the COVID-19 epidemiological crisis in relation to the teaching process and distance learning activities in primary schools in Serbia. We examine learning through the televised programs of Serbia's public broadcaster and other related internet services. The aim of this research is to estimate the quality of the teaching process and distance learning in primary schools. In accordance with the purpose of the research, a questionnaire about the educational experience and practices in primary schools during the spring and autumn of 2020 was created. The questionnaire is designed for school principals, teachers, students and parents/legal guardians of students. In total, 28186 people participated in this study conducted in March and April 2021. The results show that most schools used online resources efficiently despite the initially low digital competencies of teachers and students. Limited access to the internet and digital resources, as well as difficulties in engaging students, were gradually overcome during the fall of 2020. Based on the results of this research, we formulated the most important recommendations for the organization of distance learning and its future integration in the hybrid model of teaching and learning in school practice.

**Key words:** primary school, distance learning, online education, COVID-19

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## ОБРАЗОВАЊЕ НА ДАЉИНУ У СРБИЈИ – ИСКУСТВА У ОСНОВНОМ ОБРАЗОВАЊУ ТОКОМ КОВИД-19 КРИЗЕ

### Апстракт

У овом раду разматрамо реакцију и одговор образовног система Републике Србије на COVID-19 епидемиолошку кризу, у смислу извођења наставе и наставних активности на даљину у основним школама у Србији. Разматрана је настава реализована преко јавног телевизијског сервиса и осталих онлајн интернет сервиса. Предмет истраживања био је утврђивање квалитета процеса наставе и учења на даљину у основним школама у Србији. У складу са сврхом истраживања креиран је упитник о образовном искуству и пракси у основним школама током пролећа и јесени 2020. године. Креирани су упитници за директоре школа, наставнике, ученике и родитеље/законске заступнике ученика. У истраживању спроведеном током марта и априла 2021. године учествовало је укупно 28.186 особа. Резултати истраживања показују да је већина школа ефикасно користила онлајн ресурсе, упркос почетним ниским дигиталним компетенцијама наставника и ученика. Ограничени приступ интернету и дигиталним ресурсима, као и тешкоће у ангажовању ученика, постепено су превазиђени током јесени 2020. године. На основу резултата овог истраживања формулисали смо најважније препоруке за организацију учења на даљину и његову будућу интеграцију, у хибридном моделу наставе и учења у школској пракси.

**Кључне речи:** основна школа, настава на даљину, онлајн настава, КОВИД-19

### INTRODUCTION

At the beginning of 2020, as the virus began to spread and the number of COVID-19 cases worldwide increased, it became clear that it would be difficult to complete the teaching process during the current school year. In other words, it became clear that it would not be possible to carry out all activities and finish the school year under regular conditions. In an attempt to contain the spread of the COVID-19 virus, most governments around the world temporarily closed schools and other educational institutions. This decision has affected more than 1.2 billion pupils and students, or almost three-quarters of the learner population (United Nations Sustainable Development Group, 2020: 5-11).

After the *Decision of the Government of the Republic of Serbia on the suspension of teaching in higher educational institutions, primary and secondary schools and regular work of preschool educational institutions* was adopted, in accordance with the *Decision on declaring a state of emergency* and the *Decree on State Emergency Measures*, the Ministry of Education, Science and Technological Development of the Republic of Serbia, and thus the entire education system of the country, had to react quickly. Due to the epidemiological situation in the country, caused by the COVID-19 virus, distance learning was organized in order to ensure uniform acts and treatments in educational institutions (Imel, 1998: 3; Porter, 1997: 152). This has been the dominant teaching model since

March 17, 2020. Immediate work with children in preschool institutions, and the teaching process in all primary and secondary schools, as well as in institutions of higher education, have been temporarily suspended. A complex operational plan of activities, consisting of a large number of different programs and alternative (mostly digital) ways of teaching and learning in preschools, primary and secondary schools was adopted. The focus was on the organization of distance learning (Bates, 1995: 78-93; Moore, et al. 2011: 4-5; Minic, 2017: 52-55; Mandic, et al. 2013: 75-77), which should contribute to the implementation of the curriculum in general education subjects and vocational subjects with the largest number of lectures.

Distance learning is a form of online education. Lectures and learning materials are made accessible through the internet or televised programs of public broadcasters. Students learn at home, not in a classroom. Although some basic definitions of distance learning are given below, it must be emphasized that the area is very dynamic and that the definitions of distance learning are still evolving. Distance education is defined by Moore as “all forms of education in which all or most of the teaching is conducted in a different space than the learning, with the effect that all or most of the communication between teachers and learners is through communication technology” (Moore, et al. 2011: 3). There is an added element of temporal separation between teachers and learners to Moore’s definition (Butcher, Wilson-Strydom 2008: 725-746). There are various types of distance learning: video conferencing, hybrid distance education, open schedule online courses, and fixed-time online courses. There are many excellent benefits of distance learning. Firstly, it is less expensive to support. Secondly, distance learning is not constrained by geography. However, this approach could disadvantage some students. Students with limited computer or internet access may struggle. Those who need extra help with motivation and organization may also struggle once they are removed from a traditional classroom environment. Even if some teachers and certain classes were ready to face the situation, a large majority had to adapt their teaching and learning in a very short time without training, with insufficient bandwidth, and with little preparation. This unexpected and rapid transition to online learning has led to a multiplication of teachers’ strategies for distance learning in lectures, tutorials, project groups, lab works, and assessments (Gajek, 2017: 301-312).

Learners are probably the largest group to be indirectly affected by the pandemic. Some researchers and organizations (Burgess and Sievertsen, 2020: 2; Education Endowment Foundation [EEF], 2020: 8; Kuhfeld et al., 2020: 220-226) have hypothesised that school closures during the pandemic could have detrimental effects on learning gains and social disparities in learning. To the best of our knowledge, there is no empirical evidence yet on the school closure effect’s actual direction and size (Tomasik, 2020: 566-

576). In an on-line environment, students may feel isolated, parents may have concerns about children's social development, students with language difficulties may experience some disadvantage in a text heavy on-line environment, and subjects requiring physical demonstrations of skill such as music, and physical education may not be practiced in a technology-mediated setting (Nikolov, Nikolova, 2008: 659-674). Working with students with special educational needs is a particular theme in distance education, as is the practice of vocational subjects in secondary education.

This study examines the impact of e-learning and digitalization on primary and secondary schools, on the example of Greensprings School in Lagos State, Nigeria. The case study shows that most students agree that e-learning allows students to have access to unlimited sources of information, reveals connections between subjects, promotes critical thinking, and encourages the students' way of learning. The study further shows that the majority of the teachers agree that e-learning is easier and more effective, helps to further develop teachers' computer skills, and brings out the best in students. Interestingly, the two parties agree that e-learning helps teachers and students share accountability for learning and achievements (Tunmibi, et al. 2013: 53-58).

Many scholars (Davis, 2008: 507-519; Somekh, 2008: 449-460) argue that teachers are key in the implementation of IT in education. In addition, they state that the implementation of IT requires teachers to fundamentally change their beliefs about teaching and the way they teach. These changes are related to the transition from a teacher-centered towards a student-centered approach of teaching and learning. This also holds true for teachers teaching in ICT based distance education environments. But teachers teaching in a distance education setting need additional strategies and tactics to foster the teaching and learning process (Nikolov, Nikolova, 2008: 659-674).

### *Teaching on National Television and Online Learning Platforms*

On the first day of the state of emergency, an important decision was made regarding the recording of video lectures and educational contents, which would be broadcast on channels *RTS 2*, *RTS 3* and *RTS-planet* of Serbia's public broadcaster. The prompt reaction of the educational system was distinct, and so was the courage of a number of teachers who dared to appear in front of the camera and talk to an audience of millions. They started very important work for 700.000 students in Serbia, and also for the future of our nation. Although distance learning is not our invention and has been known worldwide for several decades, some of the footage from state television, starting with the footage aired on March 17, 2020, will go down in history and stay in the annals of our education system.

Distance learning was designed and organized in accordance with the capacities of our education system, taking into account the limited period of available time. However, additional steps and activities were necessary to accelerate the implementation of this process. One of those activities was carried out through the website [www.rasporednastave.gov.rs](http://www.rasporednastave.gov.rs), where all RTS class schedules were posted and made available for students in Serbia (Randjelovic, et al. 2020: 203-216). As a result, all students, teachers and parents were informed about each segment of teaching covered by the educational content broadcast on state television.

Teachers were given the opportunity to work directly with children, using some of the other digital media (Randjelovic, et al. 2019: 35-46), e.g., the national platform for online learning [www.mojaskola.gov.rs](http://www.mojaskola.gov.rs) or some of the contents from television, and to supplement the teaching process with content insufficiently processed on RTS.

The interactivity of the process was additionally encouraged by the establishment of a national platform for online learning [www.mojaskola.gov.rs](http://www.mojaskola.gov.rs), meant to support the lessons on television. Interactivity was stimulated through tests on the portal, and thus contributed to building the self-regulation process in learning. The portal [www.mojaskola.gov.rs](http://www.mojaskola.gov.rs) also contains various recommendations for establishing online communication between teachers and students.

A learning management system *My School*,<sup>1</sup> based on Moodle, was also introduced. Moodle is a free, open source software widely used in both the world and our education system. The functioning of the *My School* portal is managed by the Ministry. From the very beginning of distance learning, the richness of digital content on the portal was contributed to by general education teachers and vocational subject teachers employed in primary and secondary schools, who provided tests on a voluntary basis, without remuneration. These tests were then placed on the platform by a group of teachers who had the appropriate digital skills (Novkovic Cvetkovic, et al. 2020: 1231-1244). Professional societies contributed to this whole process, as they delegated teachers for cooperation and thus contributed to the sustainability of this portal (Randjelovic, et al. 2020: 297-300).

Educational contents were broadcast via TV channels, and they were also made available through the free application *RTS My School*<sup>2</sup> for mobile phones and tablets.

Additional support for students was provided in the form of a multimedia platform (<https://mojaskola.rtsplaneta.rs>). This platform is a kind of digital archive of all broadcast contents and teaching materials.

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<sup>1</sup> Moja škola

<sup>2</sup> RTS Moja škola

### *Communication between Teachers, Students and Parents*

From the very first days of distance learning, it was necessary for teachers to communicate almost daily with their students and their students' parents. Students had to send homework to their teachers, almost daily, and had to exchange other procedural and technical details necessary for the teaching process to be more efficient. For this purpose, various free web-platforms (Zoom, Scype, Microsoft Teams, Google Meet, Google Classroom etc.), applications and social networks (Facebook, Messenger, Viber, WhatsApp etc.) were used, including e-mail. Now, we can say that Google classroom, e-mail and Viber application were definitely the most frequently used.

The Zoom application is available for free and is designed for online meetings, although it has some functional limitations. But buying some of the licenses on offer (not too expensive, so teachers can afford it) lowers the number of restrictions, and this platform becomes very functional and useful.

Thanks to Viber Media, the use of the Viber application and Viber Community service was enabled, which ensured better group communication and information exchange, and was extremely useful in those specific circumstances.

E-mail communication was also very effective for sending diversiform files, homework, as well as for other forms of communication within groups with a finite number of users. Many teachers used e-mail groups for communication with students and parents.

Another application which improved communication is the so-called electronic school diary ("EsDnevnik"). It has already been in use for a few years, but has only now taken on a significant role. After the upgrade and improvement of the function for formative monitoring and evaluation of students registered on the "EsDnevnik", parents have been able to follow all the formative grades of students (<https://moj.esdnevnik.rs/>) since April 2, 2020.

### *METHODOLOGY*

The aim of this research was to estimate the quality of the teaching process and distance learning in primary schools during the spring and fall semesters of 2020. The main goal of the research was to examine the experience, opinions and attitudes of principals, teachers, students and parents/legal guardians of primary school students, in relation to the implementation of distance learning.

A questionnaire on the quality of distance learning was constructed and distributed to respondents in all four target groups in primary schools. In accordance with the aim of this research, the following tasks were set:



- estimation of the response of the Serbian education system to the COVID-19 crisis;
- identification of factors that helped the organization and implementation of distance learning;
- identification of factors that hindered the organization and implementation of distance learning;
- estimation of the level of digital maturity of primary schools.

We established following hypotheses:

- The response of the Serbian education system to the COVID-19 crisis was efficient and successful;
- Most of the students had adequate digital resources for distance learning;
- The low digital competence of teachers influenced the implementation of distance learning;
- The use of various online platforms encouraged the realization of distance learning.

The sample includes 28,186 persons from primary schools in Belgrade, divided into four groups - school principals (113), school teachers (2,550), students (10,484) and their parents/legal guardians (15,039). 64.6% Of the total number of surveyed school principals, 64.6% were female and 35.4% male. Of the total number of surveyed teachers, 84.5% were female and 15.5% male. In regard to the student part of the sample, 57.2% of students were female and 42.8% were male. Of the total number of parents/legal guardians, 85.1%, were female and 14.9% were male.

The research instrument was created in the form of anonymous Google questionnaires, one for each of the four groups of participants. The first part of the questionnaire referred to the collection of socio-demographic data about principals, teachers, students and parents/legal guardians of students (gender, age, education, duration of employment). The second part of the questionnaire contained a set of questions about the organization and implementation of distance learning in primary schools. All groups commented on both the factors that made implementing distance learning difficult and factors which contributed to the quality and efficiency of the implementation of distance learning during the spring of 2020 and during the first semester of the 2020/21 school year (autumn 2020). Also, the questionnaires contained a set of questions that referred to the level of the digital capacity of primary schools for conducting distance learning. The questions in the questionnaires are based on the "Selfie" instrument for the self-evaluation of the digital maturity of educational institutions<sup>3</sup>. This instrument was piloted in the educational system of the Republic of Serbia in 2017, and has been widely adopted and applied since 2019.

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<sup>3</sup> [https://ec.europa.eu/education/schools-go-digital/about-selfie\\_sr](https://ec.europa.eu/education/schools-go-digital/about-selfie_sr)

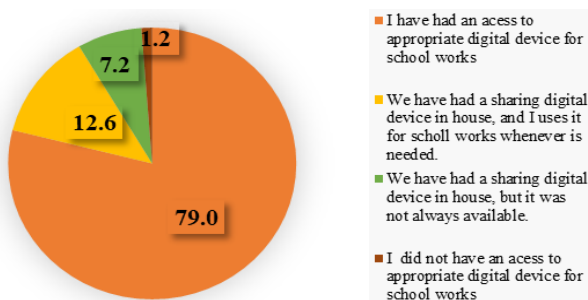
Based on the educational experience and practice in primary schools during the spring and autumn of 2020, all participants answered in relation to the involvement of a particular participant group. The obtained results were compared with each other, in order to get a clear picture of the educational practice in that period.

## RESULTS AND DISCUSSION

Participants from all four groups answered questions regarding the factors that hindered or contributed to the educational process during distance learning in two periods: the spring of 2020, when traditional teaching was interrupted for the first time, and the first semester of the 2020/21 school year. In addition, it is important to emphasize that the set of questions in the questionnaire concerned the level of digital capacities of primary schools for the implementation of distance learning. In accordance with that, the results of the research are structured so as to refer to the respondents' assessments and their comparative analyses of all three researched areas: students' resources for working from home, factors influencing the implementation of distance learning and the digital maturity of primary schools.

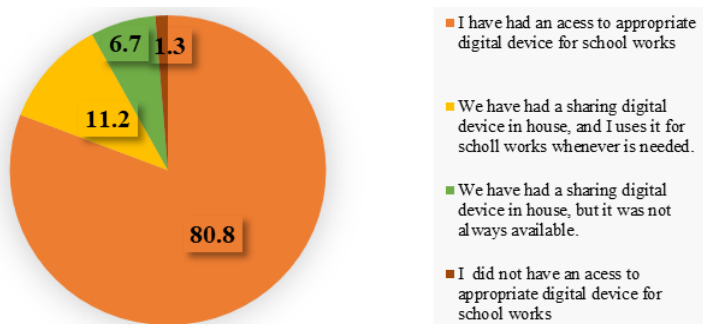
### *Student Resources for Working from Home*

We assessed the data about the availability of digital devices for use in the distance learning process during the spring 2020. The data shows that the largest number of surveyed students always had the device they needed (79%). There were students (12.6%) who shared the device with their family, but they had it at their disposal whenever they needed it. A fewer number of students (7.2%) had a device that they shared with others in the household, but could not use it whenever they needed it. Only 1.2% of surveyed students did not have access to digital devices for performing school tasks (see Graph 1).



*Graph 1. Percentage of primary school students depending on the availability of digital devices (computer, laptop, tablet, mobile phone) during the spring of 2020*

The availability of digital devices to students during the fall of 2020 was relatively better (see Graph 2). Namely, 80.8% of students always had the device they needed for learning at their disposal. The percentage of students who shared the device with their family members, but had it available whenever they needed it, decreased to 11%. The percentage of those who had a shared device in the household and who could not always use it when they needed it also decreased. The percentage of surveyed students who did not have access to digital devices for performing school tasks remained more or less the same (1.3%).



*Graph 2. Percentage of primary school students depending on the availability of digital devices (computer, laptop, tablet, mobile phone) during the first semester of 2020/21.*

### *Factors that Hindered the Implementation of Distance Learning*

The factors that each separate group of participants considered hindering for the effective implementation of distance learning are listed in the following table. Participants could mark or not mark any of the listed aggravating circumstances. The percentage of participants who noticed the factors that hindered the implementation of distance learning for each subsample and for both periods is given in Table 1.

All four groups agree that the greatest difficulty observed during distance learning is the students' limited access to a stable internet connection and digital devices. About half of the surveyed school principals, during both stages of the survey, believed that the digital competency of students and their family members was low, and that there were difficulties in engaging students and in supporting their families in helping the students with distance learning. A significant percentage of principals and teachers expressed the opinion that, in the spring of 2020, there was a noticeable lack of experience and training of teachers for the implementation of distance learning, while only a few months later the percentage related to that opinion was significantly lower. The results were reduced in percentage from about 60% and 30% to about 11% and 12% in both study groups (Table 1).

*Table 1. Percentage of participants who recognized difficulties in implementation of distance learning*

Statement	Participants answer							
	Principals		Teachers		Students		Parents	
	Spring 2020.	Fall 2020.	Spring 2020.	Fall 2020.	Spring 2020.	Fall 2020.	Spring 2020.	Fall 2020.
	%	%	%	%	%	%	%	%
Students' limited access to digital devices	67,3	48,7	62,4	50,3	25,8	26,6	24,0	20,1
Students' limited access to good internet connection	73,5	61,1	64,5	58,4	63,8	61,8	35,0	33,1
Low level of digital competency of students	36,3	20,4	40,5	31,9	9,3	8,8	15,4	10,9
Low level of digital competency of family members	52,2	34,5	39,9	32,6	6,7	5,4	9,6	7,2
Low level of digital competency of teachers	18,6	8,8	14,3	5,9	12,2	9,6	15,3	10,9
Lack of technical support for teachers	37,2	23,0	41,6	29,7	8,7	7,2	23,1	16,7
Lack of technical support for students	46,9	35,4	42,2	30,9	15,9	12,7	29,4	21,2
Lack of time for teachers to create teaching materials for distance teaching	26,5	19,5	35,3	31,0	16,6	15,1	24,6	19,9
Lack of time for teachers to give feedback to students	15,9	14,2	29,9	27,6	23,9	19,4	27,5	24,6
Unclear procedures and directions for performing distance learning	32,7	10,6	41,7	25,8	19,8	14,9	36,3	28,7
Difficulties in student engagement	44,2	59,3	49,7	47,1	24,0	20,7	29,2	25,1
Difficulties in supporting families in helping students with distance learning	54,9	47,8	35,8	26,9	11,4	8,3	30,3	22,9
Lack of teachers' experience in the implementation of distance learning	61,9	11,5	34,9	12,9	32,1	18,8	28,9	17,1
Lack of training for teachers for the implementation of distance learning	34,5	13,3	23,5	11,8	22,5	14,7	22,5	15,0

Both principals and teachers agreed on many issues which they cited as aggravating factors for the implementation of online teaching. However, most of them were noticed on time, so the results visibly improved in the autumn of 2020. As key aspects, they stated low digital competence and a lack of technical support for teachers, as well as the lack of time to produce materials for distance learning.

A large percentage of students and parents (about two thirds of the students and one third of the parents) said that the biggest problem was limited internet access throughout the school year. In addition to these aggravating circumstances, slightly less than a third of them pointed out difficulties with limited student access to digital devices, the teachers' lack of time to give feedback to students, and difficulties in engaging students throughout the year. In relation to the spring of 2020, the same percentage of students and parents stated that the teachers lacked the experience and training to implement distance learning, and that there were difficulties in providing support for families helping students with their education. This significantly improved distance learning during the second stage of the research (autumn 2020). Less than 15% of them cited the issues of low digital competency of students, teachers and families, the lack of technical support for teachers and time needed for the production of materials for distance education.

Comparing data for the periods of spring and autumn of 2020 has led to the general impression that all four groups noticed improvements in regards to almost all of the potential aggravating circumstances.

#### *Factors that Facilitated the Implementation of Distance Learning*

All four groups also commented on the circumstances that positively affected the realization of distance learning. The opinions of the participants are given in Table 2. This table also contains empty cells. This is due to the fact that students and their parents did not answer all the questions answered by the principals and teachers.

Without significant differences between the spring period and autumn periods, principals (over 80%) and teachers (over 50%) primarily emphasized the following mitigating factors: cooperation between teachers, the use of digital technologies, and the creation of additional materials. The facts that schools were well-organized and that there was constant communication with parents were also emphasized. A slightly lower percentage of the surveyed teachers and principals pointed out the following mitigating factors: schools' access to well-organized online resources and the teachers' participation in professional development programs. During both stages of research, less than 40% of participants in these two groups felt that the school had experience in using learning management systems, and that teachers participated in professional networks, and cooperated with other organizations and schools.

The schools' lack of a "Bring Your Own Device" (BYOD) policy was singled out as the most sensitive issue. The help and assistance of the State and municipalities regarding support or guidelines for conducting online classes were also mentioned as mitigating factors (Table 2).

*Table 2. Percentage of participants who recognized a certain circumstances that positively influenced the implementation of distance learning*

Statement	Participants answer							
	Principals		Teachers		Students		Parents	
	Spring 2020.	Fall 2020.	Spring 2020.	Fall 2020.	Spring 2020.	Fall 2020.	Spring 2020.	Fall 2020.
	%	%	%	%	%	%	%	%
Students' limited access to digital devices	67,3	48,7	62,4	50,3	25,8	26,6	24,0	20,1
Students' limited access to good internet connection	73,5	61,1	64,5	58,4	63,8	61,8	35,0	33,1
School already had some experience in using a school-level learning platform	22,1	69,9	25,7	57,5	13,6	20,6	19,9	35,7
School had access to well-organized online resources	52,20	68,1	30,1	45,3	46,3	46,4	24,1	25,4
School implements „Bring Your Own Device (BYOD)“ policy	8,80	7,1	16,7	13,7	8,7	9,3	10,1	8,9
Teachers participated in professional networks	36,30	48,7	23,5	33,3	33,8	30,9		
Teachers participated in programs of professional development	65,50	63,7	46,0	52,1				
Teachers in school cooperated regarding the use of digital technologies and creation of resources	89,80	85,0	55,7	71,7			25,1	22,2
School cooperates with other schools and organizations	39,8	41,6	16,7	19,6	6,9	6,8	3,9	4,4
School uses "Selfi" instrument to assess the use of digital technology	23,9	22,1	6,9	6,8				
School had a digital segment in the School Development Plan	31,9	33,6	14,5	18,8				
State and municipality provided support and directions	19,5	23,9	5,8	9,0			4,6	4,6
School had well-organized, constant communication with parents	86,7	85,8	49,3	49,3	40,6	34,8	51,1	42,6

In addition to principals and teachers, a significant percentage of surveyed students and parents felt that the school had access to well-organized online resources (up to 40%) and that communication with parents was well-organized and constant (about 40 - 50%). These two groups of participants marked any of the offered claims as a mitigating factor, in a much smaller percentage, compared to principals and teachers. About 30% of students felt that teachers participated in professional networks, and teachers commented on these issues as well (Table 2). Few students and parents confirmed that the school had a “Bring Your Own Device” (BYOD) policy and experience in use of a learning management system.

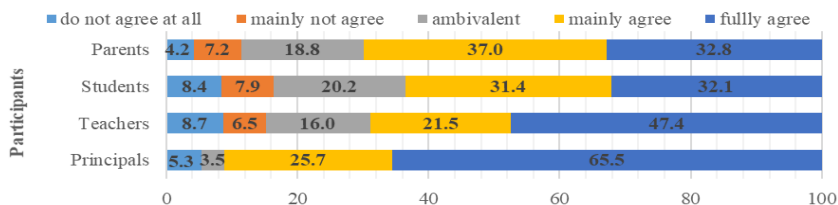
The participants thought that the school did not cooperate well with other organizations and schools, and that the State did not provide support and guidelines for this type of teaching. This implies that schools did not use the mechanisms offered to them, and this could be helpful on our path to digital transformation.

In general, all participants estimated that, within the span of a few months, the school gained experience in using a learning management system.

#### *The Digital Maturity of the School in Relation to the Organization and Implementation of Distance Learning*

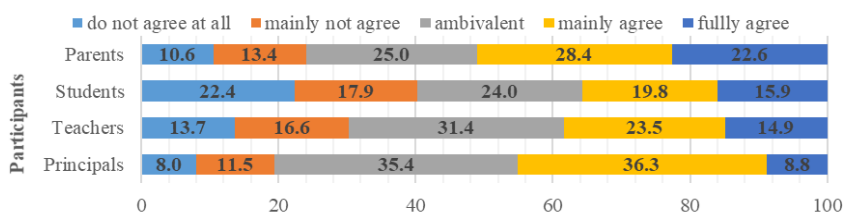
The questionnaires contained a set of questions related to the degree of the digital maturity of schools regarding the implementation of distance learning. The participants were given a chance to agree with these claims using a five-point Likert scale. The results of the assessment are shown in the following graphs.

A significant number of the surveyed principals (over 90%) fully agreed that the school had a unique learning management system within which students can communicate with their teachers and find tasks, activities, schedules and resources (Graph 3). The discrepancy observed while comparing the answers of principals with the answers of teachers, students and parents implies that principals would like to use one platform for online learning, but that there were more platforms in educational practice. A large percentage of undecided participants in these three categories, however, indicates a certain degree of misunderstanding regarding learning platforms.



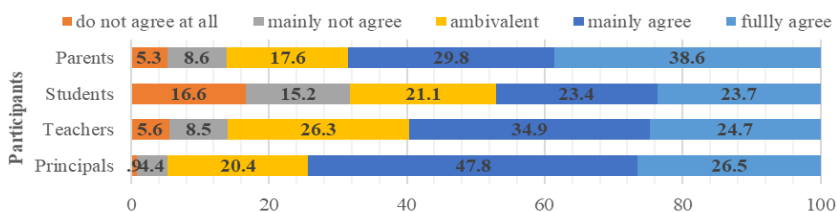
*Graph 3. The response of the participants to the statement: “There is a unique learning management system in the school where students can communicate with their teachers and find tasks, activities, schedules and resources.”*

Graph 4 shows the differences between the students' answers and the answers of all other participant groups regarding the manner in which students manage their time in school, the manner in which they use digital technologies, and the manner in which they plan their work schedule and time for rest. Namely, about 23% of the surveyed students marked 'not agree at all', while about 18% of them marked 'mainly not agree'. This data indicates the absence of designed learning activities and educational communication taking place within the school platform for online learning which is characterized by asynchronicity (each student is allowed to learn and do tasks at their own pace, until the deadline defined by the teacher). The majority of the surveyed principals, teachers and parents agreed about this or were undecided (Graph 4).



Graph 4. The response of the participants to the statement: "In our school, students learn how to manage their time using digital technologies, shared calendars or other planning tools to set work schedules and time for rest."

Most respondents partially or completely agreed with the statement regarding the use of technologies in seeking help in cases of learning difficulties (see Graph 5). As was the case with the previous questions, fewer students expressed a positive attitude in comparison to other participant groups.

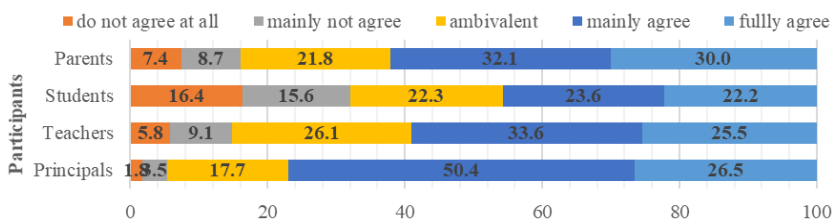


Graph 5. The response of the participants to the statement: "In our school, students learn how to use technologies to seek help when they have learning difficulties."

About two-thirds of the surveyed parents and teachers, and half of the surveyed students marked 'fully agree' or 'mainly agree' in regards to the statement that students learn how to use help-seeking technologies when they have difficulties using the software/applications recommended

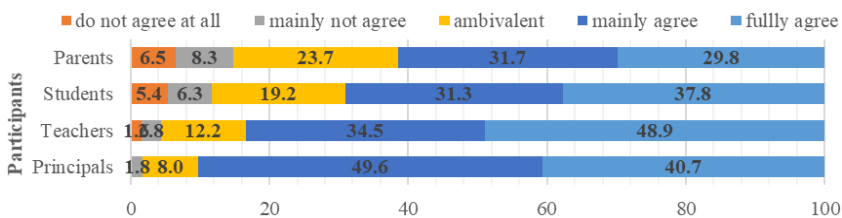


by their teachers, while almost 80% of the total number of surveyed principals had a positive attitude about this issue (Graph 6).



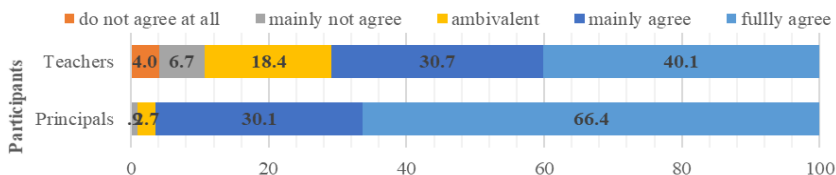
Graph 6. The response of the participants to the statement: “In our school, students learn how to use help-seeking technologies when they have difficulty using software/applications recommended by their teachers.”

All participants agreed that teachers provided their students the opportunity to access teaching content online, although the assessments of principals and teachers were more positive than the assessments of students and parents (Graph 7).



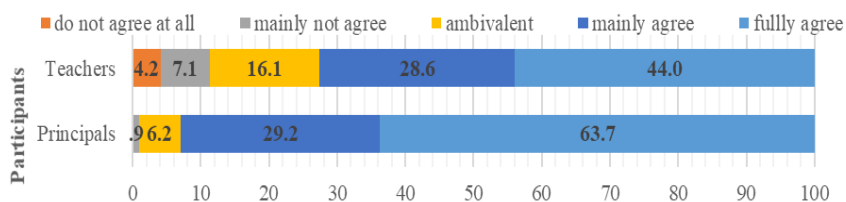
Graph 7. The response of the participants to the statement: “In our school, teachers provide students with the opportunity to access new teaching content online in order to use school classes for interactive activities.”

Almost all principals marked ‘fully agree’ or ‘mainly agree’ for the statement that teachers were supported and empowered in solving basic technical problems when using digital technologies. Just over 70% of the surveyed teachers agreed with them, but it is indicative that 18% remained undecided on this issue (Graph 8).



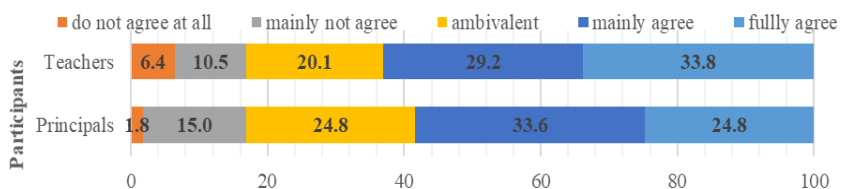
Graph 8. The response of the participants to the statement: “We support teachers in learning how to solve basic technical problems when using digital technologies.”

Over 40% of the surveyed teachers and over 60% of the surveyed principals fully agreed that teachers were provided training, organized in schools, regarding online teaching, distance learning and hybrid teaching (Graph 9).



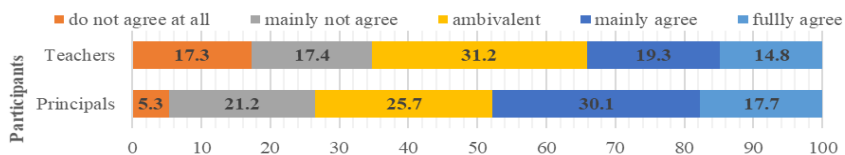
*Graph 9. The response of the participants to the statement: “In our school, we organize training for teachers about technology for support distance learning (including distance education, online teaching and hybrid teaching).”*

Graph 10 demonstrates that about two-thirds of the surveyed teachers and principals believe that the teachers in the school collaborated on creating a repository of shared online resources. Almost 25% of the surveyed principals and 20% of the surveyed teachers are undecided on this issue. Given that this activity is conducted by the school’s teaching staff, the fact that a significant number of the surveyed participants remained undecided on the issue gives one the impression that those same participants are not at all familiar with this type of activity.



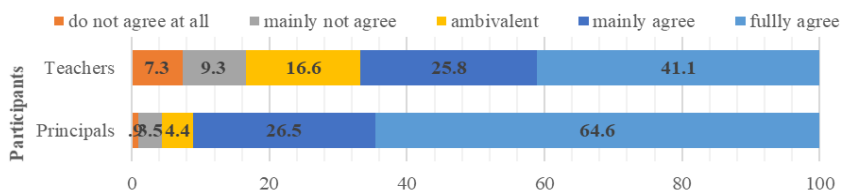
*Graph 10. The response of the participants to the statement: “In our school, teachers cooperate in creating a repository of shared online resources.”*

Graph 10 clearly demonstrates that there is a significant number of indifferent responses (I am ambivalent) to the statement regarding the existence of a repository of online resources in the school. This indicates that teachers and principals are not familiar with the concept of a school’s “bank of digital teaching resources” which can be used in the implementation of online teaching. However, it is encouraging that almost half of the surveyed principals and a third of the surveyed teachers reported the existence, and thus the use, of such repositories (see Graph 11).



*Graph 11. The response of the participants to the statement: "In our school there is a repository of online resources that teachers can use, add resources, share and reuse."*

Graph 12 shows that there are differences between the answers of teachers and the answers of principals regarding the digital devices and internet access provided for teachers. Almost all principals marked 'fully agree' and 'mainly agree' for this statement, while about two thirds of the surveyed teachers provided the same answers (Graph 12).



*Graph 12. The response of the participants to the statement: "Our school provides infrastructure to teachers (digital devices, internet connection) that teachers can use when they need it."*

## CONCLUSION

The analysis of data gathered during this research resulted in several important conclusions and recommendations for the organization of distance learning and the future integration of the hybrid model of teaching and learning into school practice:

- During the implementation of distance learning, it is necessary to provide digital resources (devices and internet connection) for teachers and students. Teachers have suggested borrowing the equipment they need for work during distance learning from the school which employs them. Given that only 1% of the students who participated in this study did not have the conditions to take part in this type of teaching, wider social action that would include partners from the IT industry, mobile operators and other stakeholders could result in the establishment of digital libraries in the schools and thus ensure that digital resources for distance learning are made available to all students.
- Schools should be obligated to use only one school-level learning platform. Although this measure is already listed in the instructions and recommendations for distance learning provided by the

Ministry of Education, there are still cases of schools using multiple learning platforms, which makes distance learning difficult to implement and its effects hard to monitor;

- The educational system should introduce systematic measures (large scale training) to empower and support teachers in implementing and monitoring the online teaching process within the school's online learning platform. Engaging students in the distance learning process was assessed as a challenge which all teachers face and in which they need urgent and strong support. The school-online learning platform should be a specialized learning management software that contains mechanisms for monitoring student engagement and assessing their learning success. The full use of the functions of the school platform could provide the necessary base for the proper design of learning activities and written educational communication, and timely provision of student feedback and formative and consistent summative assessment.
- Schools should provide any student who is not currently in school the opportunity to be engaged in the educational process through hybrid teaching within the school's online learning platform. Through interaction with carefully prepared teaching materials, participation in well-designed learning activities, and written communication, schools should ensure that students who are not in school are not excluded from any part of the teaching process and are given the opportunity to actively construct knowledge in the online space.
- Schools should be encouraged to introduce systemic measures such as the "Selfie" instrument, used to estimate the level of current digital maturity, to define the digital segment of the Institutional Development Plan and to create a medium-term action plan for implementing digital transformation. Research has shown that some schools do not use the available instruments or recommendations of the Ministry of Education, Science and Technological Development, the Institute for the Improvement of Education and the Institute for Education Quality and Evaluation, closely enough to improve their digital maturity, and the quality of distance learning more efficiently.
- Schools should systematically encourage cooperation between teachers in a process of horizontal learning. The cooperation between teachers working in the same school, but also between teachers working in different schools, has proven to be a factor that significantly contributes to the successful realization of online teaching. The cooperation of teachers encourages all participants in the educational process to work better and to achieve the desired results.

The increasingly rapid development of information and communication technologies, growing environmental problems, and potential future epidemics, lead us to the conclusion that distance learning is becoming a reality, not just a necessity. Teachers are the key to quality education, so it is necessary to empower teachers to work in the online environment, just as it is necessary to invest in digital materials and online resources.

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## ОБРАЗОВАЊЕ НА ДАЉИНУ У СРБИЈИ – ИСКУСТВА У ОСНОВНОМ ОБРАЗОВАЊУ ТОКОМ КОВИД-19 КРИЗЕ

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### Резиме

У овом раду разматрамо реакцију и одговор образовног система Републике Србије на ковид-19 епидемиолошку кризу, у смислу извођења наставе и наставних активности на даљину, у основним школама у Србији. Разматрана је настава реализована преко јавног телевизијског сервиса и осталих онлајн сервиса. Предмет истраживања био је утврђивање квалитета процеса наставе и учења на даљину у основним школама у Србији. У складу са сврхом истраживања креиран је упитник о образовном искуству и пракси у основним школама током пролећа 2020. године и јесени 2020. године за директоре школа, наставнике, ученике и родитеље/законске заступнике ученика. У истраживању спроведеном током марта и априла 2021. године, учествовало је укупно 28.186 особа - 113 директора, 2550 наставника, 10484 ученика и 15039 родитеља/законских заступника. Свака група испитаника изјашњавала се о томе који су фактори отежавали, а који доприносили квалитету и ефикасности реализације наставе на даљину током пролећа 2020. године и у првом полугодишту школске 2020/21. године (јесен 2020. године). Такође, упитници су садржали изјаве/тврдње које су се односиле на степен дигиталног капацитета основних школа за спровођење наставе на даљину у тренутку спровођења истраживања (март/април 2021. године). Резултати истраживања показују да је већина школа ефикасно користила онлајн ресурсе, упркос почетним ниским дигиталним компетенцијама наставника и ученика. Највећи проценат ученика и родитеља сматрао је да су најизраженији проблеми били у вези са ограниченим приступом интернету током целе школске године, ограниченим приступом ученика дигиталним уређајима, недостатком времена наставника за давање повратних информација ученицима, као и потешкоћама у ангажовању ученика током целе године. На основу резултата истраживања формулисана су најважније препоруке за организацију наставе на даљину и будућу интеграцију хибридног модела наставе и учења у школску праксу: а) обезбедити дигиталне ресурсе (уређаје и интернет конекцију) за рад наставника током реализације наставе на даљину, али и ученицима којима је то неопходно; б) обавезати школе да користе само једну платформу за учење на нивоу школе; в) припремити системске мере (масовне обуке) којима би се оснажили наставници за спровођење и праћење онлајн наставе у оквиру школске платформе за онлајн учење; г) осигурати да током хибридне наставе, у оквиру школске платформе за онлајн учење, ученици који нису тренутно у школи буду образовно ангажовани; д) подстаћи школе да користе системске мере попут „Селфи“ инструмента како би процениле ниво тренутне дигиталне зрелости, дефинисале дигитални сегмент Развојног плана установе и креирале средњорочни акциони план за спровођење дигиталне трансформације; њ) системски подстицати сарадњу наставника и хоризонтално учење.





## TOYS AS ARTIFACTS OF THE MATERIAL CULTURE OF CHILDREN AND CHILDHOOD: IMPLICATIONS FOR FUTURE RESEARCH

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### Abstract

The aim of this paper is to generate implications for future research based on the overview and analysis of the findings of relevant social sciences and the humanities that focus on toys as artifacts of the material culture of children, and/or childhood, with special reference to pedagogical research. By material culture of children, we mean items and objects that children themselves make, adapt or modify to fit their interests and the needs of their games, whereas the material culture of childhood refers to objects created by adults for children to play with. Toys can encourage different types of activities necessary for overall personality development, and can help children develop their cognitive abilities, their body and senses, gain knowledge, socialize, cultivate their emotions and appreciation of beauty, and develop their imagination and creativity. The potential of toys that children make themselves is reflected in the upbringing of creative, free, environmentally conscious and active members of society. Additionally, these toys allow children to build play, to perceive their own capabilities and restrictions, and to express their imagination, creativity and respect toward the environment, life and oneself. Future research approaches should be directed toward: a) toys as artifacts of the material culture of children, i.e. objects that children themselves make and use for the purposes of play, learning and development; b) integrating the perspective of children and adults with regard to toys, because the distinction between material culture of children, and material culture of childhood is conditional; c) understanding social practice, as well as different discourses related to process of making toys of children building toys by themselves, or through cooperation with adults; d) qualitative research on the design and application of educational toys created by adults for children to play with; e) examining the possibilities and the potential of integrating the so-called improvised toys into the family and institutional context; and f) initiating evaluative studies and integrating the values and content of local culture into the preschool and school curricula.

**Key words:** play, toy, culture, material culture of children, material culture of childhood

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## ИГРАЧКЕ КАО АРТЕФАКТИ МАТЕРИЈАЛНЕ КУЛТУРЕ ДЕТЕТА И МАТЕРИЈАЛНЕ КУЛТУРЕ ДЕТИЊСТВА: ИМПЛИКАЦИЈЕ ЗА БУДУЋА ИСТРАЖИВАЊА

### Апстракт

Циљ овог рада је да се, на основу прегледа и анализе сазнања референтних друштвених и хуманистичких наука која у фокус постављају играчке као артефакте културе деце и/или детињства, креирају импликације за будућа истраживања, са посебним освртом на педагошка истраживања. Под материјалном културом деце подразумевају се предмети које деца сама израђују и прилагођавају потребама и интересовањима игре, док се под материјалном културом детињства подразумевају предмети које су одрасли направили и наменили деци за игру. Играчке могу подстаћи различите врсте активности које су неопходне за развој личности у целини и помоћи детету да развије умне способности, своје тело и чула, да стекне знања, социјализује се, оплемени емоције и осећај за лепо, и да развије машту и стваралаштво. Потенцијал играчака које деца сама израђују лежи у васпитању креативних, слободних, еколошки оријентисаних и активних чланова друштва, а њихов допринос се огледа у томе што омогућују детету да изгради игру, да упозна сопствене могућности и изрази машту, стваралачки однос и поштовање према окружењу, животу и себи. Будуће истраживачке приступе треба усмерити ка: а) играчкама као артефактима материјалне културе деце, односно предметима које деца сама користе и израђују за потребе игре, учења и развоја; б) интегрисању перспективе одраслих и деце у вези са играчкама јер је оштра подела на материјалну културу деце и материјалну културу детињства више условна; в) сагледавању друштвене праксе, разумевању различитих дискурса у вези са процесом израде играчака, од стране деце или посредством сарадње са одраслима; г) квалитативним истраживањима процеса дизајнирања и примене образовних играчака које су одрасли наменили деци; д) испитивању могућности и потенцијала интегрисања тзв. импровизованих играчака у породични и институционални контекст; и ђ) иницирању евалуативних студија и интегрисању вредности и садржаја локалне културе у предшколски и школски програм.

**Кључне речи:** игра, играчка, култура, материјална култура детета, материјална култура детињства

### INTRODUCTION

Toys are an integral part of the life of every child and adult. They are a material and necessary element of play, even when they are not physically present, as they mediate between the child's social and personal experience (Kamenov, 2009). The importance of toys adults created for children to play with for their cognitive, emotional and social development has been discussed in various papers and studies (Kamenov, 2009; Lazarević & Malović, 2021; Smirnova, 2011). Toys allow children to better understand the world around them, overcome difficulties, assert themselves, develop emotionally and find their place in society (Kamenov, 2009). What makes playing with toys children have made themselves so special, and what defines their purpose is the fact that such toys allow

children to: develop different aspects of their personality, primarily creativity and cognitive abilities, to re-examine dominant values of their economic and social system (e.g. values of consumer culture), critically assess reality, respect nature and other people, actively and critically approach problem-solving, etc. (Večanski & Kuzmanović Jovanović, 2019). Moreover, industrial, ready-made toys are increasingly displacing unstructured materials from children's play, even though they are particularly important for the development of symbolic and creative play (Krnjaja, 2012).

Therefore, a relevant question arises – to what degree are toys an integral part of children's culture, and to what degree are they a part of the culture of childhood which is constructed by adults? When we say the *material culture of children*, we mean items and objects that children themselves make, adapt or modify to fit their interests and the needs of their games, whereas the *material culture of childhood* refers to objects created by adults for children to play with (Schlereth, 1985). In addition to having personal significance for each individual, toys are an integral part of the world's cultural heritage, because they are the “embodiment of creativity, engineering, knowledge of the laws of the market, as well as the values and esthetics of human civilization at a certain point in time” (Nedeljković Angelovska, 2012: 5). Jakovljević Šević (2012) believes that toys are accurately classified as cultural media, because they provide information about trends in clothing, fashion, interior design, food preparation, materials, manufacturing technologies, etc.

In the broadest sense, a toy is defined as any object or item children use to play with (Dostál, 2015; Frödén & Rosell, 2019; Kamenov, 2009; Mihajlović & Mihajlović, 2012), whether that object was specifically designed as a toy, or for other purposes. When it comes to specific conditions, primarily to such institutional contexts as Waldorf kindergartens, toys are simple objects, the choice of which is limited, designed to stimulate children's imagination and creativity (Frödén & Rosell, 2019). However, in Waldorf kindergartens, context plays a decisive role in defining toys, because they are “physical objects that are conducive to the kind of interaction between subject, object and context” (Levinovitz, 2017: 271; as cited in Frödén & Rosell, 2019). This way, Frödén and Rosell (2019) emphasize that there are three elements to the definition and use of toys – the child who plays with toys, the subject of the game, and the educational context that determines what a toy is in a given game situation. When viewed from the adult standpoint, it could be argued that toys contain messages and beliefs of adults about what is expected from the child, and what role or type of activity the child should adopt (e.g. to move, to design something, etc.) (Colić, Milošević & Colić, 2018). In that sense, toys and the social environment form a contextual matrix that impacts a child's behavior, development and learning (Pellegrini & Jones, 1994). What can be called the contextual matrix is illustrated by Brougere:

“A baby doll, because it represents a baby, encourages cuddling, dressing, washing, and all the activities surrounding caring for babies. However, there is no parental function in the toy, just a representation that invites this activity on the basis of the meaning (baby) given to the object in a referential social framework” (Brougère, 2006).

This paper analyzes the degree to which toys are artifacts of the material culture of children, and the degree to which they are artifacts of the material culture of childhood. The aim is to derive implications for future research based on the overview, analysis and systematization of the findings of relevant social sciences and the humanities that focus on toys as artifacts of the material culture of children, and/or childhood. Using the procedure of content analysis, we analyzed studies that examined children’s toys from a theoretical or empirical aspect. Among the analyzed works, there were those that could be classified as studies of material culture because they directly focused on toys as material artifacts from the standpoint of children and/or adults. Other works, mainly in the fields of pedagogy and psychology, approached this topic indirectly. The paper can be divided into two parts with regard to the main goal. The first section presents systematized theoretical and empirical findings of the relevant studies about toys in the field of social sciences and the humanities. The papers were analyzed in their entirety and from two aspects: their topic, i.e. whether they focused on the material culture of children and/or the material culture of childhood, and their established findings and conclusions. The second section discusses implications for future research, with special reference to future pedagogical research on toys in the educational context. The main reasons for deciding to bring the generated implications into correlation with future pedagogical research arose from the fact that pedagogy is, among other things, a normative science, and as such, it studies both the past and the present reality of pedagogy, examining and systematizing findings of relevant and related sciences in order to determine the guiding pedagogical principles and laws of educational work.

#### *AN OVERVIEW OF RESEARCH ON TOYS IN RELEVANT SOCIAL SCIENCES AND THE HUMANITIES*

A systematic and serious study of the material culture of children and childhood had been a grossly neglected research topic until recently (Brookshaw, 2009; Schlereth, 1982, 1985), especially outside the framework of archeological and anthropological research. Studying the material culture of children and childhood is invaluable because it proves the presence and activities of children (Schlereth, 1982, 1985), and because it allows us to identify and interpret the assumptions, beliefs, and meanings attached to the cultural artifacts of children or childhood in a particular society, i.e. from their social, cultural and historical position. In addition,

the scientific and practical importance of studying the material culture of children and childhood is reflected in the fact that toys have an undeniable educational potential to shape and influence children's play activities, and to encourage and support various aspects of children's behavior and personality development.

The research of material culture in the late 19<sup>th</sup> century was mainly focused on objects that can be classified as artifacts of the material culture of childhood, largely disregarding children's attitudes toward the material world (Schlereth, 1985), which could have provided ample evidence on authentic ways in which children made toys and used play objects from their surroundings. The most dominant group of artifacts of the material culture of children and childhood in museum collections consists of manufactured toys and clothes, followed by educational and school items, baby items, photographs and books (Brookshaw, 2009).

Some authors noticed that museums around the world often exhibit numerous examples of the material culture of children which are still interpreted as artifacts of the material culture of childhood, and which put emphasis on the adults' attitude toward children while completely neglecting the opportunity to reveal the children's perspective on toys (Benjamin, 1999).

#### *Research on Toys as Artifacts of the Material Culture of Childhood*

When it comes to the research tradition associated with the material culture of childhood, it should be noted that researchers have generally sought to discover the objective truth about toys, i.e. to regard toys as an objective fact from the adult perspective. In consequence, the following research questions have emerged as relevant: What were the first children's toys? How did toys develop? What are the material aspects of toys? What toys did children play with in different periods of history? What is the role of toys and what function do they perform? How do toys impact a child's development? How do toys generate gender stereotypes and social inequality? To what degree are toys safe? What are the characteristics of toys in terms of quality? How do we choose toys?

Numerous toys of different type, function and design have been found at archeological sites in and around Athens, and estimates say they date back to the period between the 10<sup>th</sup> and 4<sup>th</sup> century BCE (Sommer & Sommer, 2017). Children in Ancient Greece had a variety of home-made toys, some of which they made themselves using clay, wood or leather (Andreu-Cabrera et al., 2010; Layne, 2008). Archeological and historical evidence on ancient toys relies on the triad comprising artifacts, iconographic evidence, and written sources (Layne, 2008; Sommer & Sommer, 2017). The doll found in a children's grave may have been a children's toy, but as the site where it was discovered could have been a shrine dedicated to a deity, the doll could also represent a symbolic religious object.

Iconographic evidence found on vases shows how children and adults used particular artifacts. Moreover, ancient philosophical texts and literary sources help us to identify the views of adults on children and children's play.

Anthropologic, historical and ethnographic research of dolls proves the dual nature of archaic dolls, which were used by adults in cult traditions and religious ceremonies on the one hand, and by children in their games on the other (Chernaya, 2014). First, the theory of survivals states that artifacts use their utilitarian function when they stop being used by adults and pass into children's hands. Second, according to the labor theory, the invention of tools preceded the invention of toys because there was a stage in human history when those tools were miniature copies of the items used by adults, and were in direct correlation with the future activities of children. Today, many objects used as toys (e.g. bow and arrow) have lost a direct link with everyday tools even in the communities at the lowest level of social and cultural development.

In one of the most famous historical studies of P. Ariès (1989), in addition to other analyzed historical sources (memoirs, pedagogical literature, representation of children in fine arts, etc.), material childhood artifacts are considered important evidence of the thesis that childhood is a social construct in Western culture. The view of the child as its own being that qualitatively differs from adults appeared in Europe in the 17<sup>th</sup> century, whereas the modern understanding of childhood was constructed in the 18<sup>th</sup> century (Ariès, 1989). Another, very extensive historical overview of toys and games was compiled by Sutton-Smith (Sutton-Smith, 1986; as cited in: Diaz, 2008), concluding that, in the past, toys had a far more pronounced social component, encouraging children to play with others. In contrast, modern toys encourage children to play on their own, preparing them to successfully perform independent work tasks.

Different research indicates the role of toys in the early stages of a child's development (Else, 2009; Pellegrini & Jones, 1994; Tengfei, 2016; Yogesh, Sreenivasa Rao & Krishnamurthy, 2017), thus confirming the importance of toys for the physical, social and intellectual development of children. Toys can be used in the contextual sense, which would impact the nature and content of play. At the same time, different styles of play can also impact the use of toys as a resource (Pellegrini & Jones, 1994).

When it comes to relevant research, special emphasis should be placed on those studies that focus on the quality of children's toys, i.e. their safety, toxicity, and faithfulness to the objects they were modeled after. One such study conducted in India (Rangaswamy, Kumar & Bhalla, 2018) examined the environmental impact of traditional *Channapatna toys* toys, made from natural materials, in comparison to the environmental impact of plastic toys, made from *polyvinyl chloride* (PVC) manufactured in China. In contrast to PVC toys, traditional toys from India are made of

natural and biodegradable materials, such as wood, clay, sprouts, sawdust, coconut, walnut, cloth, etc. This comparative study revealed that native *Channapatna* toys are far less toxic compared to PVC toys, and that their manufacturing process involves the consumption of less energy and a minimal ecological footprint. Similarly, Mihajlović and Mihajlović (2012) point out that modern toys are far from natural, and that the issue of their alienness is particularly visible in three aspects: a) the use of artificial (synthetic) materials to manufacture toys; b) the lack of social and emotional components that characterize children-made toys; and c) instant gratification. When it comes to classifying toys, and the requirements that define toy quality, authors should take the following principles into account: a) toys should be made with children's participation, and in social interaction with them, instead of in accordance with adult criteria on how children of a certain age should behave; b) toys should be observed multidimensionally; c) we should respect the circumstances in which children use toys; d) long-term and continuous observation of children's activities with toys and their consequences for various aspects of children's development is needed; e) toys should bring about children's emotional satisfaction; and f) toys should have clear educational effects (Duplinský, 1991; as cited in: Dostál, 2015).

In the age of intensive development of technology and consumer society, toys are subject to market laws designed to encourage consumerism, which is why mass-produced toys are prevalent, while only a small percent of toys currently used in kindergartens are hand-made toys from natural materials (Večanski, 2016). In addition, modern life forces children to play by themselves using toys that glorify stereotypes and brute physical force (Klemenović, 2014). Večanski (2016) examined the opinion of kindergarten teachers on the importance of hand-made toys, their expediency and usefulness, and the potential problems in their use. The results of this study indicate that kindergarten teachers understand the importance of hand-made toys for all aspects of a child's development (cognitive development, development of fine motor skills, development of gross motor skills, social interaction, imagination, self-confidence, etc.), but that in reality, such toys are not nearly as present in kindergartens as the importance teachers attach to them would suggest. Game-like art activities, especially making toys by hand, can be an adequate response to the various negative consequences of neoliberal ideology on children's free play, of which the marginalization of the importance of free play within and outside the institutional context is the most important (Večanski & Kuzmanović Jovanović, 2019).

Although the market of educational toys for children is developing fast, some authors (Abdi & Cavus, 2019; Tengfei, 2016) believe that modern toys cannot meet children's needs, that their quality is often questionable and uneven, and that there is little innovation in their design. In their experimental

study, Abdi and Cavus (2019) designed an educational toy for preschool children ages 4 through 5 to examine the toy's impact on children's learning of English as a second language, especially in relation to learning the Alphabet, words, colors, shapes and numbers. The results of this experiment show that the educational toy designed by the authors is suitable for preschool children and can be used to teach them English as a second language.

Numerous studies have confirmed that toys perpetuate gender stereotypes (Owen Blakemore & Centers, 2005; Rheingold & Cook, 1975). Children learn expected gender roles and social behavior through toys, although some studies show that toy-based gender differentiation does not exist at an early age (Jakovljević Šević, 2012). Rheingold and Cook (1975) observed toys and other items that can be found in the bedrooms of boys and girls between the ages of 1 and 6. The results of this study show that boys and girls own approximately the same number of books, music instruments and stuffed animals. However, boys have more toys than girls, and these toys are more varied. The authors also identified differences in the types of toys owned by boys and girls. In another study (Owen Blakemore & Centers, 2005), undergraduates rated toys based on their suitability for boys, girls, or both genders. Toys were classified into five categories based on these estimates: distinctly male, moderately male, gender-neutral, moderately female, and distinctly female. In yet another similar study (Owen Blakemore & Centers, 2005), undergraduates assessed the characteristics of toys for boys and girls. The results suggest that toys for girls are associated with physical attractiveness and care, whereas toys for boys are assessed as violent, competitive and dangerous. Educational toys that stimulate the development of physical, cognitive, and artistic abilities were assessed as gender-neutral or moderately male. The overall conclusion of this study is that distinctly gender-stereotyped toys support optimal child development to a far lesser degree than gender-neutral toys, or toys that perpetuate moderate gender stereotypes.

Examining the attitudes of parents and preschool teachers about toys in the context of institutional and family education and care, Colić et al. (2018) found that the highest level of agreement between teachers and parents occurred with regard to the instructiveness of toys, followed by their agreement on the safety of toys and gender stereotypes to a somewhat lesser degree. Their attitudes about ways to obtain toys were in complete disagreement. In addition, the aforementioned study showed that the choice of toys largely depends on the beliefs of parents and teachers about their instructiveness, followed by market trends and TV ads, and finally, the specifics of the institutional/family context. The choice of toys to play with is often related to the adults' conceptions on ways to support children's development and learning (Lazarević & Malović, 2021). Researching the practices of purchasing toys for children, Lazarević and Malović (2021) established that adults often buy toys



for children, and that the most common reasons for purchasing toys are birthdays, holidays, and other special occasions. However, the primary motive of adults for buying toys for children is not their contribution to the child's development and learning. The results of this research indicate that the practice of buying toys has to do with the consumer culture trends of modern society – that is, buying a large number of toys and using them for a short time only.

As part of a sociological study, Diaz (2008) interviewed women who had at least one child in order to examine their understanding and perception of toys and their role in everyday life. The main conclusion she arrived at was that mothers perceive toys in two contrasting ways. First, they see toys as a means of social interaction and learning for children, but in a way that limits the time they have to spend with the child. Second, mothers prefer toys that require little time and energy on their part, i.e. games that do not require too much direct involvement. The results suggest that toys are observed in correlation with the limited time a modern working mother has at her disposal, but they refute the view that modern mothers use toys as aid in performing their maternal responsibilities. Certain sociological studies examined the link between social stratification and the choice of toys to purchase. One study determined that middle-class mothers believe that the main function of toys is to encourage children's educational development and help them acquire essential life skills, whereas working-class families perceive toys as more of a means of entertainment and play (Lareau, 2003; as cited in: Diaz, 2008) (Seiter, 1993; as cited in: Diaz, 2008). Another study discovered that middle-class parents buy toys not only for their educational value, but also for the ideological and aesthetic value they attribute to those toys (Seiter, 1993; as cited in: Diaz, 2008).

Research on toys as artifacts of the material culture of childhood points to numerous findings, the most important of which include: a) since the beginnings of organized society, toys have had a significant role in the lives of children and adults, largely reflecting the attitudes and beliefs of adults about their nature, use and functions (Andreu-Cabrera et al., 2010; Ariès, 1989; Chernaya, 2014; Layne, 2008); b) as a consequence of the commercialization of childhood over the past decades, there has been an increase in the number of mass-produced, automated, digital, plastic, PVC and other toys of questionable quality (Rangaswamy, Kumar & Bhalla, 2018; Mihajlović & Mihajlović, 2012; Večanski, 2016; Večanski & Kuzmanović Jovanović, 2019); c) the early academization of preschool education practices and working parents greatly influence the choice and purchase of children's toys (Colić et al, 2018; Diaz, 2008; Lazarević & Malović, 2021) which are primarily perceived as educational tools designed to encourage a child's learning and development (Abdi & Cavus, 2019; Tengfei, 2016). For all these reasons, many are concerned

that the nature of toys is being distorted and increasingly removed from the very essence of play and child's nature. Instead of fulfilling the function of allowing children to play and design games, and helping them learn, create, modify, make decisions and participate, toys are increasingly becoming a disciplining tool, a means of forgiveness, redemption, a status symbol, etc.

*Research on Toys as Artifacts of the Material Culture of Children*

Another research tradition strives to decipher the children's world of play and toys, as well as examine their perception of toys. What items and objects from the immediate and broader environment do children use as toys and in what manner? What is the significance and function of these improvised/homemade toys for children? In his earlier studies, Brougère (Brougère, 2003) analyzed the social component of toys as part of an organized network system that involves many parties (manufacturers, parents, sellers, children) and different processes (manufacturing, distribution, advertising, purchase, play, destruction). In his later works, the author conducted research using the socio-anthropological approach which observes objects outside their usual context, and which, in the case of toys as artifacts of the material culture of children, includes their independence from the ways in which they are used and the ways in which they are incorporated into the system of cultural exchange, or any social practice.

Ethnological and anthropological research by Rossie (2005a) indicates that children from the Sahara and North Africa make toys using natural and waste materials from their local environment. The list of natural materials that can be used to make toys is inexhaustible, and Rossie offered the following classification: *materials of mineral origin, materials of plant origin, materials of animal origin, and materials of human origin*. In addition, children often use waste material from their environment to make toys, primarily: *earthen materials, glass, wood materials, fibers, metal, paper materials, plastic and rubber*. Another important finding of this research is that Moroccan children do not enjoy or care too much about the toys themselves. They primarily care about and enjoy the process of finding the materials to make toys, and the activities in which such homemade toys are used. Moreover Rossie (2005a) noticed the so-called impermanence of homemade, DIY toys, i.e. he noticed that Moroccan boys and girls show indifference toward their homemade toys because, once they finish playing with them, they abandon them or purposefully destroy them. Children play with the same types of toys, regardless of whether they live in the rural areas of the Sahara and North Africa, or in densely populated urban areas, and their similarity facilitates mutual communication and the establishment of a common understanding between the local culture and the culture of play. The overall conclusion of this research is that children's activities during play, as well as the toys

and other items used to play with, are in direct correlation with the natural, social and cultural reality in which these children live. However, play activities and toys are not unchangeable, even in traditional and rural communities (Rossie, 2005a).

In the second edition, observing children from the Sahara and North Africa play, Rossie (Rossie, 2005b) analyzed the material, technical, cognitive and emotional aspects of children's dolls, concluding that both male and female dolls used in this region almost exclusively symbolize an idealized form of an adult man or woman. In addition to a collective and standardized manner of playing with dolls, every ethnicity and region also have their own unique ways of playing with dolls. Children use dolls to interpret the roles and lives of adults; they transmit and internalize knowledge of their physical and social environment, attitudes, symbols, meanings, social and moral values; they are directly involved in each community's system of visual communication, thus achieving exchange with their environment and actively adopting culture through conventional symbols (Rossie, 2005b). However, according to Rossie (2005b), it is still questionable whether games that involve dolls project family reality in line with the values and roles dictated by the community. In other words, to what extent dolls are a means for conveying conservative messages and maintaining an established socio-cultural systems is uncertain.

Another group of research on toys as artifacts of the material culture of children we analyzed is that which pays equal attention to toys as artifacts of the culture of children and childhood, and the standpoint of adults and children (Benjamin, 1999; Frödén & Rosell, 2019). We paid special attention to the research of the art historian Karl Gröber (Benjamin, 1999) which represents a creative synthesis of knowledge about toys as artifacts of the culture of children and childhood. Gröber singles out the following findings as the most important: a) the process of industrialization marks the beginning of the emancipation of toys because, at that time, toys started to elude the control of the family and become increasingly alien to children; b) there is a contradictory relationship between the material culture of children and the material culture of childhood: toys are largely observed as items made for children, and not as items created by children; the more attractive and harmonious a toy is, and the more it is based on an imitation of the adult world, the further it is removed from the actual child's play; c) rationalist views on children and toys prevent us from seeing the child's true self and the toy; d) toys are not evidence of the autonomous existence of children's culture; instead, they are always a symbol of dialogue between toys and context (community, nation and class).

Research conducted by Frödén and Rosell on toys used in Waldorf kindergartens (Frödén & Rosell, 2019) established that the physical environment and toys, or simple objects in the environment, whose form and content does not invite children to engage in any particular activity or

game but encourages free transformation and the right to express their imagination, actually have the greatest impact on the development of children's play and creativity.

In conditions in which the social and economic system are dominated by the values of neoliberal ideology which promotes industrial toys, artifacts of the material culture of children, i.e. toys that children make, adapt or modify to fit their needs or the needs of their games, are being increasingly pushed aside (Brookshaw, 2009; Frödén & Rosell, 2019; Schlereth, 1985; Rossie, 2005a, 2005b; Večanski, 2016; Večanski & Kuzmanović Jovanović, 2019). Children use various objects and materials from their natural, social and cultural environment as playthings, including themselves and their own creative process. In the process of making one's own, improvised toys, children discover the different functions of existing objects, or create various items as toys with particular functions during play (Rossie, 2005a, 2005b; Večanski & Kuzmanović Jovanović, 2019). Therefore, handmade toys combine research and creativity: "A home-made toy is a visible proof of children's creativity and skill, and therefore a source of pleasure and pride, especially if it is later used to play with" (Večanski & Kuzmanović Jovanović, 2019: 406). Due to the importance of toys for children's overall development, and due to the fact that the process of creating and making toys is more important than the end-result, it is necessary to initiate research focused on the material culture of children in the current family and institutional context.

### *IMPLICATIONS FOR FUTURE RESEARCH*

The overview and analyses of existing papers show that most authors address the theoretical and empirical aspects of toys as artifacts of the material culture of childhood. The fact that toys are largely viewed from the adult standpoint, i.e. from the aspect of adult beliefs and assumptions on what an adequate children's toy is in terms of its nature, material, function and purpose, largely contributed to this viewpoint. Some of the most consistent research findings about toys as artifacts of the material culture of childhood are: evidence that toys have always played a special role in the development of human society and in the lives of children and adults, and evidence of the durability of toys, based on the fact they outlasted the basic tools they were modeled after. As suggested by research results on toys as artifacts of the material culture of childhood, toys mostly represent diminished copies of objects involved in family and work life, war, family care or entertainment. As such, they fulfill their didactic and socialization function, imitating real life and helping children to better prepare for it (Dostál, 2015). All these reasons indicate a need to change the direction of research so as to focus on toys as artifacts of the material culture of children, i.e. as items children themselves make and use for the purposes of

learning, play and development in general. There is also a noticeable lack of theoretical papers and studies that analyze the pedagogical aspects of the material culture of children. Although the distinction between the material culture of childhood and the material culture of children is only provisory, arising primarily from theoretical and practical reasons, there is a need to unify these perspectives. Moreover, even the researchers' determination to examine authentic children's methods of making toys using material and items from everyday life is not entirely independent of a wider social and cultural context. Even when the child independently makes toys, defines their purpose, and gives them meaning, he/she is still influenced by previous experience, interactions, and relationships established with adults.

Everyday objects that children use as toys should pedagogically, didactically and psychologically complement toys created specifically for child's play (Stoppardová, 1992; as cited in: Dostál, 2015). Speaking of which, there is a need to examine the possibilities and the potential for integrating the so-called improvised or homemade toys children made on their own into the family and institutional contexts. It would be especially interesting to learn the extent to and the ways in which children use objects from their family and wider local (natural and social) environment, and how they link them with didactically modeled toys and items.

Despite the prevalent ways in which childhood has been universally viewed for decades, the concepts of toys, the material world and material culture are not stagnant, but historically, socially, and culturally specific. Due to the fact that these categories are social constructs, future research approaches should be focused on understanding social practices and different discourses related to toys, as well as the process of children making toys by themselves, or in cooperation with adults. Toys are closely related to specific social situations and uses, so it is not possible to talk about a singular understanding of toys, a singular type of toys, or the best classification of toys per se. On the contrary, there is a plurality of understandings regarding toys, and the different uses and functions of the same toy.

Given the fact that most pedagogically oriented studies focus on studying and designing educational toys to support children's development, the existing results need to be verified, and qualitative research into the process of designing and implementing educational toys needs to be conducted.

Although sociological research has shed light on many of the social aspects of toys, it has also raised numerous questions. To what extent and in what manner do parents, educators and adults in general participate in children's play with toys? To what extent are they regulators and partners in children's play with toys, and how do they understand these roles? Do mothers' employment, emancipation and free time influence the choice of toys they purchase for their children, and the way children use them? Are

toys, from the standpoint of children and parents, a medium for learning, playing or improving academic knowledge and skills in later life?

Many discussions and studies of toys are focused on gender issues and stereotypes, i.e. the reproduction of societal gender inequalities through toys. These studies have failed to answer how the manner in which parents raise their children leads to gender inequality.

Early toys were not made just to encourage children's play; they also represented a means to control and discipline children, hiding complex gift-giving, and reward/punishment rituals (Mouritsen, 1998). The analyzed papers contain very little knowledge about the educational models that form the base for play with toys, whether toys are treated as artifacts of the culture of children, or the culture of childhood, and few genuine research attempts were made to identify those models.

As the thesis about the relationship between the quality of stimulation of children's development in early childhood (within a family and institutional context) and their academic performance in later education is widely accepted, it is very important to pay special attention to children's toys and games, as well as adults' attitudes toward them (Mouritsen, 1998; Rossie, 2005b). Therefore, the need to adapt educational institutions to children's needs, experiences and interests has been recognized. For example, it would be useful to initiate evaluative studies and integrate the values and content of local culture into the curricula of preschools and primary schools. The toy culture of local communities and groups must not give way to the overpowering influence of the culture of play promoted by consumer culture, Western media, standardized European and American toys, or mass-produced plastic toys (Rossie, 2005b). In addition, future research can be used to promote and examine the interaction between traditional and modern toys.

### CONCLUSION

The aim of this paper was to systematize the existing knowledge needed for deriving guidelines for future research, especially research within the educational context, by conducting an overview of scientific research that focuses on children's toys as artifacts of the material culture of children and childhood.

Despite the widespread use of the terms *material culture of childhood* and *material culture of children* in different social sciences and the humanities, authors generally do not question the conventional meaning of these terms. The material culture of children includes those toys that children themselves have designed, made, modified and used in play activities, and which reflect their creativity, imagination, current needs and interests. In addition, the material culture of children involves everyday objects and items from the world of adults which children have adapted to their own culture by changing their original purpose or function. The ma-

terial culture of childhood involves objects created by adults for children to play with.

Sciences that study toys (e.g. ethnology, archeology, history, sociology, pedagogy, psychology, anthropology, art history, art education, teaching methodology, etc.) have come to significant conclusions about toys, indicating the directions in which the future research of toys should go. Different interpretations of the importance, role, nature, and ways to use toys can be associated with industrialization processes, early academicization, rapid development of modern technologies, different concepts of childhood, etc.

If we review existing studies of the material culture of children and childhood, we can argue that the adult perspective prevails over the perspective of children. Pedagogy is focused, both in terms of theory and in terms of practice, on what children should become rather than on who children are and what constitutes their life (Mouritsen, 1998). It is, therefore, perfectly legitimate to ask: What do toys as artifacts of the culture of children and childhood tell us about child rearing? Seemingly apolitical and immune to ideology of any kind, toys can reveal complex, often implicit social constructs associated with parenting and child rearing (e.g. the model we want our children to embody, the direction we would like our children to go in, the social and cultural values we want to nurture and preserve, and those we need to accept). The best way to update our knowledge about toys as artifacts of the material culture of children, and to initiate the development of the perspective of children is through qualitative research that involves observation activities with or without the participation of adults and/or researchers, and qualitative analyses of children's activities during play with homemade toys.

Toys can encourage different types of activities necessary for overall personality development. They help children develop their cognitive abilities, their body and senses, gain knowledge, socialize, cultivate their emotions and appreciation of beauty, and develop their imagination and creativity. The potential of toys that children make themselves is reflected in the upbringing of creative, free, environmentally conscious and active members of society. Additionally, these toys allow children to build play, to perceive their own capabilities and restrictions, and to express their imagination, creativity and respect toward the environment, life and oneself.

Issues that seem important to us are the possibility of a wider use of toys children made themselves in the context of family life and pre-school education practice, as well as the need for a more natural, development-oriented and culturally appropriate toy industry (e.g. toys made of natural materials, wood, wool and cotton, and traditional toys).

Based on the findings of the analyzed scientific papers, future research in the educational context should focus on: a) toys as artifacts of the material culture of children, i.e. items that children themselves make

and use for the purpose of play, learning and development; b) integrating both adult and children's perspectives regarding toys; c) discourse regarding toys that children make themselves, or in partnership with adults; d) the process of designing and implementing children's educational toys designed by adults; e) integrating the so-called improvised/makeshift toys into the family and institutional context; and f) integrating the values and content of local culture into preschool and school curricula.

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## ИГРАЧКЕ КАО АРТЕФАКТИ МАТЕРИЈАЛНЕ КУЛТУРЕ ДЕТЕТА И МАТЕРИЈАЛНЕ КУЛТУРЕ ДЕТИЊСТВА: ИМПЛИКАЦИЈЕ ЗА БУДУЋА ИСТРАЖИВАЊА

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### Резиме

Играчке представљају интегрални део живота сваког детета и одраслог. У најширем појмовном одређењу играчке означавају било који предмет који деца користе у игри, било да су ти предмети дизајнирани за такву употребу или имају друге сврхе. У ужем значењу играчке су предмети специјално намењени деци за игру. Из тих разлога, као релевантно питање се издваја колико су оне интегрални део културе деце, а колико део културе детињства. Под материјалном културом деце подразумевају се предмети које деца сама израђују и прилагођавају потребама и интересовањима игре, док се под материјалном културом детињства подразумевају предмети које су одрасли направили и наменили деци за игру.

Циљ овог рада је да се изведу импликације за будућа истраживања на основу прегледа и систематизовања сазнања референтних друштвених и хуманистичких наука која у фокус постављају играчке као артефакте материјалне културе деце и/или детињства. Применом поступка анализе садржаја анализирани су радови који са теоријског или емпиријског аспекта разматрају дечје играчке. Међу анализираним радовима постоје они који би се могли сврстати у студије материјалне културе јер непосредно разматрају играчке као материјалне артефакте из перспективе деце и/или одраслих, док се други радови само посредно баве том проблематиком. У оквиру првог поглавља приказана су и систематизована сазнања релевантних истраживања друштвених и хуманистичких наука о играчкама (археолошка, историјска, антрополошка, етнологска, социолошка, психолошка, педагошка и методолошка истраживања). Радови су анализирани у целисти, са два аспекта: са аспекта теме којом се баве, односно материјалне културе деце и/или материјалне културе детињства, и са аспекта утврђених сазнања и закључака. У другом поглављу рада разматрају се импликације за будућа истраживања, са посебним освртом на будућа истраживања о играчкама у васпитно-образовном контексту.

На темељу сазнања изложених у оквиру референтних научних радова изведене су бројне импликације за будућа истраживања, а посебно се издвајају следеће: а) иницирање истраживања о играчкама као артефактима материјалне културе деце, односно предметима које деца сама користе и израђују за потребе игре, учења и развоја; б) интегрисање перспективе одраслих и деце у вези са играчкама јер је оштра подела на материјалну културу деце и материјалну културу детињства више условна; в) сагледавање друштвене праксе, разумевање различитих дискурса у вези са играчкама, ка процесу изградње играчака од стране деце или посредством сарадње са одраслима; г) иницирање квалитативних истраживања о процесу дизајнирања и примене образовних играчака; д) испитивање могућности и потенцијала интегрисања тзв. импровизованих играчака у породични и институционални контекст; и њ) иницирање евалуативних студија и интегрисање вредности и садржаја локалне културе у предшколски и школски програм.

## STATUS AND CONCEPT OF THE SCHOOL SUBJECT HARMONY IN SECONDARY MUSIC EDUCATION

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### Abstract

The paper analyses the curricula of the school subject Harmony (The Science of Harmony) throughout the period of twelve decades (1899–2020), i.e. since the foundation of the first music school in Serbia up to the present day. The necessary and frequently unavoidable changes of these curricula have passed through five stages, or five steps in the development of the educational system and the concept of the school subject Harmony taught in secondary music schools. The examination of the dynamics and range of changes applied in order to define the goals, content, structure and character of the school subject Harmony is based on the analysis and classification of the available resources and data. The aim of this research is twofold: to examine the level and type of changes occurring in the Harmony curricula and to analyze and interpret the impact of the study of Harmony on personality and character of musicians of multiple career profiles. Music school students are thus allowed to devise their own career path and apply the acquired knowledge in practice when either playing an instrument, or singing, playing in an orchestra, analyzing music literature or simply exhibiting their creativity and potentials in various ways.

**Key words:** school curricula, Harmony, secondary education, changes

## СТАТУС И КОНЦЕПЦИЈА НАСТАВНОГ ПРЕДМЕТА ХАРМОНИЈА У СРЕДЊЕМ МУЗИЧКОМ ОБРАЗОВАЊУ

### Апстракт

Радам су обухваћени наставни планови и програми предмета Хармонија (Наука о хармонији) у временском периоду од дванаест деценија (1899–2020), од оснивања прве музичке школе на нашим просторима до данашњих дана. Неопходне и често неминовне промене у њима обухватају пет дефинисаних етапа, пет корака у развоју школског система и концепцији наставног плана и програма предмета Хармонија у оквиру средњег музичког образовања. Анализа сачуване грађе и систематизација података омогућава сагледавање динамике и

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обима промена у дефинисању циљева, садржаја, структуре и карактера предмета Хармонија. Циљ истраживања представља приказ степена и врсте промена у наставном плану и програму предмета Хармонија као и сагледавање улоге хармоније у значајном процесу формирања личности музичара различитих образовних профила. Свесно трасирање музичког пута уз помоћ хармоније омогућава ученицима средње музичке школе примену стеченог знања у даљој музичкој пракси при савлађивању проблема на инструменту и певању, заједничком музицирању, анализи музичке литературе и испољавању стваралачких потенцијала.

**Кључне речи:** наставни план и програм, Хармонија, средње музичко образовање, промене

## INTRODUCTION

Harmony (The Science of Harmony) represents a compulsory field of study based on classical principles. Therefore, it pertains to a continuous education of musicians. The school subject Harmony is taught to the students of music who are versed in basic music skills and who are willing to expand and upgrade their music education by studying other theoretical and practical music subjects (Nagorni Petrov, 2017). This school subject is traditionally based on the defined methodological trilogy: theory classes, practical harmonization (doing harmony exercises and playing the piano) and harmonic dictation. A tendency to reduce the theory classes and direct students to a conscious analysis of harmonic chords and movements has been observed. The acquisition of the knowledge and skills in Harmony represents the first step in the process of the technical improvement and aesthetic research of music (Živković, 1946).

“The school subject Harmony (or The Science of Harmony) is founded on the typical phenomena of the harmonic language of the Baroque, Classicism and Romanticism and represents a sort of the ‘arithmetic mean’ of these music styles and of the previous theoretical achievements” (Živković, 1979, p.32).

Gaining proficiency in the school subject Harmony is a craft “that future musicians have to learn in order to later search for their own selves and thus create their own authentic music expression” (Vasiljević, 2003, p.5–6). The aim of the school subject Harmony is “to enable students to master the skills of voice leading, harmonic pitch and comprehensive analysis of the music materials” (Živković, 2001, p. 5). Živković concludes that the school subject Harmony is also important since it teaches students to properly write and understand music lines (Živković, 2006). The teaching of Harmony is inherently dedicated to the acquisition of the affective practice and creation of sound images. The affective practice is a combination and a continuous intertwining of the writing technique (note taking) and playing an instrument. The sound images are created in two complementary manners: observation – listening and analyzing the assigned music pieces (Jovanović, 2009). Each part of the teaching mate-

rial is founded on the sound, while the theoretical knowledge stems from the analytical experience in hearing. The greatest teaching effect is accomplished by listening to various music performers accompanied by the students' active involvement in each step of the teaching process (Kiš Žuvela, 2014). The merging of theoretical and practical knowledge and skill acquisition is done gradually, in accordance with the students' maturity, established outcomes and goals of teaching Harmony. The academic achievement of students depends on the manner of teaching and its comprehensiveness, students' interests and talent and teachers' dedication and motivation (Nagorni Petrov, 2016).

The school system functions successfully owing to professionally devised and practically proven and verified school curricula, which represents the documents of universal importance that determine the level, type and duration of education (Vilotijević, 1999). The manner in which school curricula are established is conditioned by tradition, the development of science and technology, needs, abilities and goals that society prescribes for the institutions of education and for individuals (Đorđević & Ničković, 1990). A well-designed curriculum is supposed to qualify students for understanding, perceiving and identifying the acquired information and its further transformation into generalizations, concepts, principles and rules (Đorđević, 1994). To conclude, the school curriculum demands that teachers demonstrate their teaching mastery, teaching methods and theoretical and practical knowledge and skills, including pedagogical, psychological, didactic and methodological teaching contents and principles, with the aim of acquiring the competences necessary for their future teaching career (Sudzilovski & Vasilijević, 2020).

### *ANALYTICAL APPROACH TO CHANGES IN THE CURRICULA OF THE SCHOOL SUBJECT HARMONY*

This analysis examines the preserved curricula of the school subject Harmony, related to the period of twelve decades (1899–2020), i.e. from the foundation of the first music school in our country up to the current Curriculum from 2020. The available resources were obtained from archives, theoretical papers and published monographs. The classification of the data determined five stages. These stages were crucial in recognizing and understanding the changes related to the (re)defining of the goals prescribed for the school subject Harmony, the rearrangement of the teaching content of the school subject Classical Harmony, and its arrangement according to the teaching sections and school grades, the established number of classes, teaching methods, the character of this school subject and, finally, the comprehension of its significance for the overall music education.

*Introduction of Harmony into the Educational System (1899–1964)*

The foundation of the first Serbian School of Music represented the starting point in the process of institutionalization of music education in this part of the world<sup>1</sup>. The professional engagement of educated musicians directed towards the popularization of music, foundation of new music schools,<sup>2</sup> writing of textbooks and organizing music life started a decades-long educational mission interrupted by wars, financial troubles, insufficient space and number of teachers and neglect. This period witnessed the changes occurring in the school structure, manner of financing education, professional and spatial alterations and reforms, which all led to an administrative division of music education into secondary and higher music education (The Mokranjac Music School 1899–1974, 1974).

The school subject Harmony was first mentioned as an important part of music education in the *Rulebook*– the first document of the SSM in Belgrade, devised based on the example of the European music schools curricula, particularly those from the German speaking countries. In the beginning, The Science of Harmony was part of the obligatory school subject The Science of Music Fundamentals, which was taught in the third year of the beginner's level with three classes a week (The Rule-

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<sup>1</sup>Serbian School of Music (SSMin further text), today known as *The Mokranjac Music School*, was founded under the auspices of the First Belgrade Choral Society (1899), which meant that the Serbian music education was “for the first time laid on the professionally stable basis that induced its continuous development” (Marinkovic, 2007, p. 630). The school equaled the education gained at a conservatoire or university. The classes were taught to the students at the beginner's and upper level of knowledge during the period of six academic years, which could be either shortened and/or prolonged depending on the students' talents and diligence. In accordance with the curriculum adopted in 1908, the school had three departments: the beginner's department for the students aged 9 – 14 years of age and lasting for two years, the elementary department and the higher department (each lasting for three years respectively). The major goal was the education of instrumentalists, music conductors, composers, but also music pedagogues that were in great demand at the time. The school saw it as its task to do the following: “1) to cherish our national music as well as the foreign music that will have a positive and sound impact on the development of music culture in our country; 2) to apply theory and practice in teaching in order to educate productive and reproductive artists of various profiles, as well as competent secondary school teachers” (The Mokranjac Music School, 1899–1974, 1974).

<sup>2</sup>The Music school *Stankovic* was founded on the initiative of the Stankovic Singing Society in 1911. Its goal was clearly determined: to cherish the vocal and instrumental music, to educate singers and instrumentalists, as well as the teachers of singing and instrument playing (Fifty Years of the Music School Stankovic in Belgrade, 1961). The beginner's, elementary and higher courses taught in this school became the state music school comprising both elementary and secondary music education, which significantly contributed to the improvement of the quality of music performance by educating teachers at the conservatoire level (1947).

book of the Serbian School of Music, 1899). The new curriculum (1904) established The Science of Harmony as an obligatory school subject (Vasiljevic, 2000) and the major subject for the students of the theory and teaching department.<sup>3</sup> The number of students of music schools increased and they were taught the fundamentals of the chords construction, the principles of connection that govern them, cadences, alternative chords, simple modulations, practical harmonization of simple coded melodies (Marinković, 2007).<sup>4</sup> The teaching methods were based on the combination of theoretical knowledge, the completion of harmonic tasks and practical harmonization on the piano. Harmony was included in the final exam (absolutorium), thus contributing to the full music education accomplishment. The textbooks written by renowned German educators of the time were used in the classes of Harmony.<sup>5</sup> The teachers frequently changed and amended curricula in order to provide adequate music education to their students. The Rulebook from 1923 allowed certain liberalization in the interpretation of the school curricula. The division of the school into grades within each department was abandoned, which led to a more flexible approach to the school curriculum accorded with the students' abilities and the time needed in class. The school Rulebook from 1927 uncovered the initiative of Miloje Milojevic, the professor of theoretical subjects, to form a new department – the composition department. The gifted students who attended this department particularly benefited from the classes of Harmony, since they were taught how to realize their knowledge in practice (The Rulebook, 1927).

The school subject The Science of Harmony is found in the curricula of the education major programs in teacher certification schools that lasted for five years, as part of the school subject Music. The students of the third grade were taught the fundamentals of Harmony that included both theory and practice and was realized by practical harmonization of simple melodies of the marked bass and soprano while remaining in the tonality of four signs (The Prosveta Gazette, 1953). The curriculum was changed a decade later. The school subject Harmony became part of a new school subject Musical Education. The subject content was significantly reduced, preserving only the general principles of the science of music in their simplest form (The Prosveta Gazette, 1963).

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<sup>3</sup>The school Rulebook from 1928 stated that The Science of Harmony was not a major school subject.

<sup>4</sup>The graduates got a degree in the field of teaching – “they were qualified for the teaching profession” (Vasiljevic, 2000, p.228).

<sup>5</sup>The report on the academic achievement of the students of the SSM from 1910/11 states the textbooks used in classes, some of them being the textbooks by Jaddassohn and Thuille, as well as the notes taken down during the lectures of professor Rajnberger (The Mokranjac Music School, 1899–1974, 1974, p.34).

*The School Subject Harmony in Secondary Music Schools (1965–1976)*

The significance of the school subject Harmony in secondary music education is better perceived when analyzed in terms of the period after the Second World War, which was marked by a rapid rise of the number of music schools and a novel educational policy. Teaching of the school subject Harmony, which involved the connection of the basic elements of the classical harmony, completion of the harmonic tasks and an analytical approach to a music piece, was adapted to the students of the second and third grades of the instrumental department (2+2) and of music theory department (4+4+0+1). The focus was primarily on the students of the music theory department and their skills of practical harmonization on the instrument. The prescribed tasks on the piano included the extended and authentic cadence in all positions and tonalities, diatonic figured bass, positioning and arranging the altered chords of the chromatic type, Neapolitan connections, use of non-tonal dominants and all kinds of modulations. The exams were held annually: the written part (the task with the marked bass and soprano), the oral part (the analysis of the written part and questions pertaining to the theory covered in classes) and the practical part (playing the extended cadences and the figured bass) (The Prosveta Gazette, 1965).

The new secondary music education curricula stated that the school subject Harmony should be taught in all departments as a vocational subject. The classes of Harmony qualified students for the development of the sense for the harmonic pitch, individual comprehension of a music piece, a conscious acquisition of musical literacy with the purpose of applying that knowledge in their future work (the music theory department), as well as for individual comprehension of a music composition and application of the obtained knowledge in solving problems they encountered when playing an instrument or singing (the vocal and instrumental department). A shortened, two-year course of School Harmony, taught to the students of the vocal and instrumental department (the second and third grades, 2+2), was enriched by the tasks of doing a harmonic dictation and playing simple cadences, which represented a certain tonal verification of the teaching materials. The students of the music theory department attended Harmony in the course of four grades (3+3+2+1). The teaching materials of Harmony taught in school were designed to be taught in three grades. The fourth-grade curriculum implied Repetitorium – the revision particularly focused on the completion of harmonic tasks. The technique of the practical harmonization on an instrument involved playing children's songs with an improvised harmonic accompaniment, short piano pieces arranged for solo instruments with the piano accompaniment, cadences, sequences, harmonic turnaround, figured bass and all kinds of modulations. The harmonic analysis of compositions by various composers and from various epochs was introduced. The final examina-



tion tested the students' abilities to apply the acquired knowledge of harmony in their written part (musicality in the melodic voice leading, wise and sensible choice of appropriate harmonies) and in playing the piano (modulations and figured bass). Moreover, the students' competence in the logical presentation of the theoretical knowledge was tested. The goals of the school subject Harmony were aimed at qualifying the students for applying the acquired knowledge in their everyday life and in their professional life as musicians, as well as at motivating them to continue their music education at a higher level (The Prosveta Gazette, 1972).

*Transformation of the Harmony Curricula in the Vocational Education  
(1977–1989)*

A well-established and, according to some authors, traditional system of secondary music education was significantly impaired by the substantial organizational and crucial changes due to the introduction of vocational education. The school subject Harmony, being both a vocational and art subject, was adapted to be taught to the students of the music theory department, from the second grade onwards with 3 classes a week. The goals of teaching Harmony included the development of the harmonic pitch and the logic of the harmonic manner of thinking, qualification for a conscious approach to a music piece in order to better understand and interpret it, enrichment and improvement of the individual's emotional life and the development of the abilities to estimate the aesthetic value of a composition. The determined tasks also involved the introduction to Harmony as a stylistic, expressive element in music and to the means of the harmonic expression, the adoption of the principles of the standard, classical harmonic language and the qualification of the students for a practical application of the acquired knowledge of Harmony. In accordance with these goals, the teaching materials were based on a broad diatonic field, from the introduction to the topic and goal of this school subject to the minor septa chords. The aforementioned was accompanied by the appropriate listening examples, harmonic dictations and playing of cadences. The study of the didactic and methodological texts revealed the recommendations that teaching Harmony should not be limited only to the teaching of theory and doing exercises. The student was expected to actually hear harmony, i.e. to form the melodic lines of the soprano musically and to analyze the completed task (The Prosveta Gazette, 1977).

The second stage of the vocational secondary education in music schools was accorded with the Program for the music education for the professions of the third and fourth degree of vocational education. Twenty-two different music professions were defined: A – an instrumentalist (flautist, accordionist, etc.), a piano accompanist, a chorister; B – music assistant in charge of the organization of music events (incipient in music,

archivist-notetaker, editor-note graph taker, music assistant in the sound library, organizer of music events). The students who attended the classes pertaining to the professions at A studied the school subject The Fundamentals of the Science of Music in the third and fourth grades (2 + 3). This new subject integrated the learning materials taught in Harmony, Counterpoint and Musical Forms. The subject aimed at qualifying students for an independent and analytical approach to the structure of a music piece and for the comprehension of its basic components. The students who attended the classes pertaining to the professions at B continued to study the multi-vocational school subject Harmony in the third and fourth grades (3 + 2) (The Prosveta Gazette, 1981). The subject had the following goals: to develop students' abilities to observe and understand complex harmonic flows and to analyze complicated harmonic materials, to develop and improve the harmonic pitch, to qualify students for the practical application of complex harmonic means, particularly for the harmonization of the assigned tune, and to teach students how to obtain sound images of harmonic flows by playing the piano. The school curriculum for the third grade included non-chord tones, alterations, diatonic and chromatic modulation. The novelty was reflected in a more intensive playing of cadences, diatonic and simple chromatic modulations and figured bass, periodical revision of learned materials, the prescribed number of classes for each new teaching section. The annual examination consisted of the written part (harmonization of the assigned soprano and marked bass) and the oral part (two questions from the learned materials, playing one modulation on the piano [diatonic and chromatic] and playing a less complicated figured bass). Conforming to this new concept, the teaching materials for the fourth grade involved the enharmonic modulation. Also, the revision of the learned materials and a review of the harmonic means and procedures from the Baroque to the twentieth century Classics was previewed, together with the analysis of appropriate example pieces. Students were required to do one written school test during two classes in each semester. The examination program included the written part, the oral part, playing of the figured bass and modulations (The Prosveta Gazette, 1981).

*A Thirty-year-long Curricula Stagnation in Secondary Music Education  
(1990–2020)*

The fourth, thirty-year-long stage in the development of secondary music education curricula started in 1990. The school subject Harmony was taught to the students of all departments in music schools: the vocal and instrumental department (musical performer); the jazz department (musical performer of jazz music); the Estrada department (musical performer of the Estrada music); the music theory department (music assistant-theoretician); the ethnomusicology department (music assistant-ethnomusicologist); the

early music department – elective (musical performer of early music). The three-year education started in the second grade (3 + 2 + 2). The goal of teaching Harmony remained the same: the adoption of the principles and logic of the harmonic language, the development of the harmonic pitch and a conscious analysis of the harmonic flow (The Prosveta Gazette, 1996).

The content of the school subject Harmony was changed by the new curriculum. The traditional teaching materials for the second grade included the introduction into the goal of the school subject Harmony, explanation of the strict harmonic movement and a detailed study of non-chord tones. The students of the third grade of secondary music school learned the diatonic and chromatic elements: subordinate tetrachords, pentachords, the system of altered chords, diatonic modulation. Particularly important were the complex and chromatic variants of non-chord tones, especially the concepts re-alteration, cross-relation, open and hidden chromatic relations. The pedal point (on the dominant tone and the tonic tonality, the Mixolydian mode) was recommended in the analytical context. The teaching materials prescribed for the school subject Harmony were completed in the fourth grade by the study of the chromatic and enharmonic modulation (concept, means, classification, practical application in doing harmonic tasks and analyses). It was followed by a review of the development of harmonic styles, illustrated by selected compositions created in the Baroque, Classicism, Romanticism, national schools from the second half of the nineteenth century, Impressionism, the classical period of the twentieth century and by Yugoslav composers from the first half of the twentieth century. The selected compositions were presented using the sound, then visually and analytically. The change in the curriculum was evident in the time prescribed for the revision and the number of classes determined for teaching each section of the materials. Students were required to do one written test in each semester and the final exam (written and oral part) (The Prosveta Gazette, 1996).

A significant novelty of this curriculum was a tendency to make the Harmony classes less theoretical and more practical by encouraging students to consciously analyze harmonic movements and develop their harmonic pitch (doing harmonic dictations). Therefore, each theoretical postulate was illustrated by musical examples and examples from ample reference materials. A gradual recognition of the functions and specific connections enabled students to actually “hear” harmony. The use of the piano was not recommended in the course of doing harmonic exercises but only after their completion so that the results could be checked by pure hearing. This pedagogical procedure created in students an actual sound experience of the harmonic flow by inspecting the melodic line of each voice (The Prosveta Gazette, 1996).

The changes in the structure of this curriculum were evident in the initiatives to open new departments and introduce new school subjects

closely related to Harmony. Hence, the students of the third and fourth grades of the department for cembalo, organ and lute studied the school subject Figured Bass (1 + 1), whereas the students of the third and fourth grades of the department for music production and sound recording attended the school subject Contemporary Harmony with Improvisation and Orchestration (1 + 1). ([www.petarkonjovic.edu.rs](http://www.petarkonjovic.edu.rs)).

*Upgrading of the School Subject Harmony in the Current Curriculum  
(2020–)*

The new curriculum for secondary music and art education was released in the summer of 2020, representing the basics on which to found principles of teaching, annual and operative school programs and preparation teaching materials (The Prosveta Gazette, 2020). The new curriculum defined eight educational profiles within eight departments of secondary music schools: I Classical music department (musical performer of classical music); II Jazz department (musical performer of jazz music); III Department of Serbian traditional singing and playing (musical performer of Serbian traditional singing and playing); IV Church music department – orthodox major (musical performer of church music – orthodox major); V Church music department – catholic and protestant major (musical performer of church music, catholic and protestant major); VI Early music department (musical performer of early music); VII Music theory department (musical assistant); VIII Department of music production and sound design (sound designer). The school subject Harmony belongs to the group of vocational subjects. It is studied by the students of all departments in secondary music schools during the four-year-long education. The number of classes of the school subject Harmony was changed for the students of the departments VII and VIII (2+2+2+2). The students of the departments I – VI had fewer classes weekly (2+2+1+1). This curriculum confirmed the goal of teaching Harmony: mastering the harmonic principles and musical logic when doing homophonic choir factures, harmonic practice and analytical interpretation of the examples from musical reference materials (The Prosveta Gazette, 2020).

The new curriculum is characterized by the presentation of learning outcomes, sections/topics and materials in tables. The outcomes of learning and teaching Harmony combine the musical, perceptive and cognitive activities, which are identical for the students of the first and second grades of all secondary music school departments. The students are expected to relate the acquired theoretical knowledge to practical skills by means of the sound identification, harmonization on the piano, harmonic exercises, harmonic analysis, connection of harmonic exercises with their formal structure and discussion on the quality of the completed exercises. Moreover, the students of the third and fourth grades of the departments VII and VIII are expected to discuss the formal and harmonic

analysis, whereas the students of the departments I – VI are expected to discuss the formal and stylistic characteristics of compositions on the basis of their harmonic analyses.

The teaching and learning materials of the school subject Harmony are identical for the students of all departments. The first-year students of secondary music schools are introduced to Harmony through the basic concepts and tonal system, strict harmonic movement, major and minor triads and their turnarounds. The second-year students learn diatonic relations. The major tetrads (D, II and VII) encompass four-sound arrangements, turnarounds, introduction and resolution of critical tones, leading-note and the seventh chord. The section referring to the non-chord tones teaches division, leading and resolution of non-chord tones in the bass, as well as the multiple non-chord tones. The last section in the second grade teaches diatonic modulation (relatedness and semblance of tonalities, the means of the diatonic modulation, the manners of performing the diatonic modulation in the tonalities of the first, second and third group and by the implicit tonality). The students of the third grade are first introduced into the manners of shaping and binding subordinate tetrads on I, III, S and VI major and minor. This is followed by the introduction into chromatics – alterations, altered chords, creation of chords as non-chord dominants and substitutes (especially DD and VII/D in the diatonic and chromatic variant), N6 and F5/3. This section encompasses a broad field of the chromatic modulation: the concept, the chromatic modulation of the diatonic type obtained by the redefining of the altered chords of the diatonic type. The students of the fourth grade learn chromatic and enharmonic modulations. This extensive section teaches chromatic modulations: the alteration of the chord arrangement, chromatic and ostensible semblance of the third interval, elliptical connections and modulating sequences. The enharmonic modulation teaches the concepts of enharmonic substitution, exchange and redefinition. Finally, this section of Harmony refers to great possibilities of enharmonic substitution of certain tones in the structure of the diminished major seventh chord, excessive triad and the discussion of their being actually multidimensional (The Prosveta Gazette, 2020).

It is obvious that the authors of the current curriculum attempted to create a link between the school subject Harmony and other school subjects – Music Theory, Solfeggio, Musical Forms, Choir, Music History, Comparative Piano (major school subject). The accomplishment of the academic goals and outcomes prescribed for the school subject Harmony indicates teachers' competences and represents the approval of their knowledge, skills, experience and professional perseverance. The curriculum also prescribes certain additional educational activities: annual competitions and examinations, final examination for the students of the theo-

ry of music department (the graduation). All of the mentioned activities consist of the written and oral part.

The curriculum for secondary music and art education was augmented by the guidelines related to the didactic and methodological characteristics of teaching Harmony, comprised of the introduction, planning, realization, monitoring and assessing teaching and learning. The introduction defines teaching as directed towards academic achievement. It also emphasizes the advantages of learning through experience, the inclusion of listening to music classes and the students' musical expression during musical performances. The planning section refers to devising annual and operative programs and class preparation. The methodological framework of the guidelines is reflected in teaching and learning. The authors of this document divide teaching materials of Harmony into segments: music theory, harmonic tasks, harmony on the piano, playing and note taking of harmonic connections and harmonic analysis. The segment of music theory represents the starting point in understanding the content of the school subject Harmony. It is essential to systematize the elements of music theory when teaching each section<sup>6</sup>. Doing harmonic tasks involves the transformation of the assigned tune or piece of music into the four-part choir harmony, i.e. the transformation of the horizontal dimension into the vertical dimension. The teaching practice has proven that those students who play harmonic instruments (accordion, guitar, piano) advance more rapidly and resolve harmonic problems more easily than the students who play melodic instruments (string instruments, wind instruments), study solo singing or attend the classes in the theory of music department (Živković, 1979). Didactic and methodological guidelines recommend a gradual harmonization of the assigned tune: determining the functions, writing down the bass line with a code and emphasizing the logical movement of sections. Establishing the tonal plan, the place of redefinition and the manner of modulation determine the nature of exercises and tasks with the change of tonality. The harmonization of the assigned tunes of the soprano and bass instigates students' creativity, initiative and the practical presentation of the acquired knowledge. The completed exercise should be played on the instrument, sung for the complete sound experience of the harmonic flow and the authentic choir section, analyzed with the purpose of gaining experience in recognizing good harmonic solutions, noticing technical flaws and negative issues of harmonization. The students of the departments I – VI do harmonic exercises only in the first and second grade (The Prosveta Gazette, 2020).

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<sup>6</sup>According to the curriculum from 1990, the school subject Music Theory was taught in the first grade of secondary music schools with one class a week (The Prosveta Gazette, 1996).

Since the moment young people are introduced into the world of music and harmony, as its primary component, they have to be equipped with a firm foundation onto which they upgrade and practically apply the learned harmonic rules to playing simple compositions and doing tasks (Belković, 2009). All segments of teaching are to be enriched and illustrated by melody – to be either played or carefully listened to. The teacher is expected to select playing exercises in accordance with the students' abilities. With a potential students' creativity in mind, the authors of the curriculum recommend improvisation by playing free forms (sentences or periods), which contributes to the development of harmonic and melodic skillfulness and the logic of the harmonic expression.

The harmonic pitch, as a new skill in Harmony, is developed during the first classes through listening, note taking and singing (voicing or vocalizing) of harmonic connections. The students are required to do oral and written harmonic dictations, either individually or in groups, develop memorization and do automatic dictation (note taking after listening to a harmonic turnaround).

Besides instructing students to analyze the harmonic movement consciously, Harmony also includes a systematic introduction into the harmonic analysis with the purpose of practical application of the acquired knowledge, better understanding of the compositions that are played on instruments, easier memorization of the notes and better sight-reading. The recommended materials encompass analyses of completed harmonic exercises, of less complex music pieces by the composers from the Baroque, Classicism and Romanticism, and of the compositions from the obligatory repertory of instrument playing or classes of choir singing.

The students of the departments I – VI are advised to use modern technologies when studying Harmony, and thus be more motivated and interested in learning while simultaneously establishing a link with the digital world of today. It is not clear why the use of modern technologies has not been prescribed for the students of all departments in secondary music schools.

The final part of the didactic and methodological guidelines define monitoring and grading. Students study Harmony in groups of 5 – 8, which provides a good insight into the involvement of each student and monitoring of their musical abilities as the grading criterion. The acquired knowledge is revised by doing written tests, practical activities and oral tests. The report on the academic achievement of students is supplemented by the results achieved in annual competitions, examinations and performances.

The new curriculum particularly emphasizes responsibilities and requirements imposed on teachers of Harmony. They are expected not only to read thoroughly and apply systematically all the instructions stipulated in the curriculum, but also to devise their own programs in accord-

ance with the number of classes. They are also expected to be responsible, creative, inventive and free in the selection of an optimal manner of class organization and teaching. Teachers should monitor student work conscientiously, “insist on crucial points and approach the same problem from various angles, thus encouraging students to think and reason independently” (Živković, 1979, p.5). Teachers are allowed to rearrange their teaching materials and correlate them to other school subjects. The interconnection and correlation of school subjects may initiate numerous activities in which students become researchers, creators and performers. The establishment of the connection between various school subjects facilitates teaching and encourages innovations in teaching (Stojanović & Zdravić Mihailović, 2014; Pavlović, Cicović Sarajlić & Kodela, 2019). The new curriculum does not prescribe a new textbook so the teacher is obliged to recommend an appropriate textbook to their students. This curriculum enables teachers to develop the sense of community among their students through the expression of harmonic and communicative skills with the purpose of transferring and exchanging knowledge and experience.

The curriculum acknowledges the school subjects that are interchangeable with Harmony: Harmonic Accompaniment for the students of the first grade of the department VII (2) as a new school subject and Contemporary Harmony with Improvisation and Orchestration for the students of the third and fourth grades of the department VIII (1+1) as the school subject inherited from the previous curriculum (The Prosveta Gazette, 2020).

### *Harmony in the Curriculum of the School for Music Talents*

The School for Music Talents in Čuprija, established as an eight-year experimental, boarding school under the professional supervision of the Academy of Music in Belgrade, worked according to the experimental curriculum. Harmony was taught to the students of the sixth and seventh grades (2+2), as the theoretical school subject pertaining to the field of general musical education (The Prosveta Gazette, 1984). The curriculum underwent significant changes during 2017. Harmony, as an obligatory school subject, was taught to the students of the eighth, ninth and tenth grades (2+2+1). The goals of this school subject were to teach the strict and free harmonic movement, classical and romantic harmonic means, historical development and significance of harmony in music, and to qualify students for the harmonic analyses of music pieces from ample music reference materials. Teaching starts from the introduction to the basic elements of harmony and directs students towards the recognition and analysis of the compositions of various styles. The new curriculum is particularly significant because of the manner prescribed for accomplishing the teaching goals. The authors started from the distinctiveness of the students of the string department and the linear learning of the musical



notation. Therefore, it was concluded that Harmony should enable students to acquire the basic logic of the musical flow, the harmonic language in general, and to develop the harmonic pitch in order to hear and analyze the harmonic movement consciously (The Prosveta Gazette, 2017).

### *CONCLUSION*

The foundation of the first music school in Serbia (1899) was crucial in further development of music education. Harmony (The Science of Harmony) has been gradually established as the obligatory school subject for students of secondary music schools. The study of the preserved curricula of Harmony defines five stages:

1. The first stage (1899–1964) is related to a rather long period of a gradual introduction of The Science of Harmony into music education. During this stage, learning harmony in music schools and in teacher certification schools was deemed essential part of music literacy.

2. The second stage (1965–1976) refers to the period after the Second World War and is characterized by a rapid progress of society, music education and teaching Harmony. The curriculum from this period prescribed that Harmony be taught to the students of all departments. Also, the basic methodological triangle, comprising theoretical teaching, doing harmonic exercises and practical harmonization on an instrument, was established in that time.

3. The third stage (1977–1989) corresponds to the establishment of vocational education that led to a considerable reform of secondary education, and music education, as well. Two phases in secondary education and identification of 22 musical professions (instrumental (A) and theory (B) departments) prompted the division of the Harmony teaching materials. The students of the second phase of vocational education from group A studied harmony as part of the school subject The Fundamentals of the Science of Music. The students from group B studied the school subject Harmony in the traditional manner, in the course of three years, starting from the second grade.

4. The fourth stage (1990–2020) marked the return to the traditional secondary music education. The identical teaching and learning materials of Harmony were prescribed for the students of all six departments, lasting for three years (the second, third and fourth grades).

5. The beginning of the fifth stage corresponds to the beginning of the new school year of 2020/21. Harmony is taught to the students of all departments in four-year secondary music education. The new curriculum defined the outcomes and content of the school subject Harmony, as well as the introduction of a new school subject in the first grade.

The examination of the previous and contemporary state of affairs proves that Harmony has been traditionally established as the obligatory

vocational school subject (generally vocational, vocational and artistic), present in the continuous education of the secondary music school students. The crucial differences are observed in the number of classes prescribed for Harmony teaching. The teachers have always emphasized the insufficient number of classes and they have struggled for the recognition of Harmony in the context of general music education. The classes of Harmonic Accompaniment and of Contemporary Harmony with Improvisation and Orchestration should be added to the total number of Harmony classes.

The analysis of the curricula demonstrates a constant dilemma regarding the order of the teaching sections, especially of diatonic modulation. The most acceptable solution was offered in the current curriculum (2020) since it recognized the necessity to unite all materials pertaining to diatonic relations into a connected whole, with the diatonic modulation as its final part.

The study of the changes occurring in the Harmony curricula leads to the redefinition of its goals. Chronologically speaking, those goals first aimed at qualifying students for the application of the acquired knowledge in their everyday life and in their professional life as musicians, as well as in their further education (1972). The rest of the documents defined the goals of Harmony as developing the harmonic pitch and the logic of harmonic thinking. The curriculum from 1977 emphasized the necessity to teach students how to approach a music piece consciously and how to analyze simple harmonic movements individually with the purpose of better understanding and interpreting of a composition, as well as enriching their own emotional life. The ability to estimate aesthetic values of a music piece was also one of the goals of teaching Harmony. From 1990 onwards, the goals of teaching Harmony have remained clearly defined: the acquisition of the principles and logic of the harmonic language, development of the harmonic pitch (harmonic practice) and analytical interpretation of the examples from reference materials.

Thus determined, the goals of teaching Harmony in secondary music schools strive to establish *harmony* in the students for whom the development of the harmonic pitch and musicality represents a crucial factor in the development of their own personalities, which enables them to participate in creating, listening to and analyzing a music piece belonging to any genre of art music.

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## СТАТУС И КОНЦЕПЦИЈА НАСТАВНОГ ПРЕДМЕТА ХАРМОНИЈА У СРЕДЊЕМ МУЗИЧКОМ ОБРАЗОВАЊУ

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### Резиме

Радам су обухваћени наставни планови и програми предмета Хармонија (Наука о хармонији) у временском периоду од дванаест деценија (1899–2020), од оснивања прве музичке школе на нашим просторима до данашњих дана. Неопходне и често неминовне промене у њима обухватају пет дефинисаних етапа, пет корака у развоју школског система и концепцији наставног плана и програма предмета Хармонија у оквиру средњег музичког образовања.

У годинама развоја и стручног промишљања, хармонија као музичко-теоријска дисциплина традиционално је позиционирана као обавезни стручни предмет (општестручни, стручно-уметнички), присутан у континуираном образовном циклусу свих ученика средње музичке школе. Уочавају се разлике у сагледавању потребног времена за реализацију наставних садржаја. Свест актера наставе хармо-

није о, још увек, недовољном броју часова, претворила се у борбу за сагледавање широко схваћене улоге хармоније у контексту стицања општег стручног музичког образовања. Прописаним часовима треба додати и часове предмета Хармонска пратња и Савремена хармонија са импровизацијом и оркестрацијом.

Анализа наставних планова и програма указује на константну дилему у погледу редоследа наставних области, нарочито дијатонске модулације. Најприхватљивије решење понуђено је у актуелном плану и програму (2020). Препознаје се потреба за обједињавањем садржаја дијатонике у целину, чиме и дијатонска модулација постаје њен завршни део. Праћење тока промена у наставним плановима и програмима предмета Хармонија води до (ре)дефинисања циљева наставе. Првобитно исказани, општи циљеви наставе полазе од оспособљавања за примену стеченог знања у свакодневном животу и професионалној делатности музичара, до настављања музичког образовања у институцијама вишег ранга (1972). У свим каснијим документима, као основни циљеви наставе хармоније наглашени су развијање хармонског слуха и логике хармонског мишљења. Наставним планом и програмом (1977) наилазимо и на оспособљавање за свесно приступање музичком делу и самостално анализирање једноставнијег хармонског става у циљу правилнијег и обухватнијег разумевања и тумачења музичког дела, као и богаћење и oplemeњивање емоционалног живота ученика. Развијање способности процењивања естетских вредности музичког дела још један је од трајних циљева наставе хармоније. Почев од 1990. године до данашњих дана, циљеви наставе хармоније остају у границама јасно дефинисаних смерница: усвајање законитости и логике хармонског језика, развијање хармонског слуха (звучна хармонска пракса) и аналитичко тумачење примера из литературе.

Свесно трасирање музичког пута уз помоћ хармоније омогућава ученицима средње музичке школе примену стеченог знања у даљој музичкој пракси при савлађивању проблема на инструменту и певању, заједничком музицирању, анализи музичке литературе и испољавању стваралачких потенцијала.



## PESTEL ANALYSIS OF THE HEALTHCARE SYSTEM WITH REFERENCE TO THE RIGHT TO HEALTH DURING A PANDEMIC

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### Abstract

A pandemic caused by the coronavirus affects all aspects of life of an individual and a society as a whole. It is not only a question of the medical profession, but also of other areas, and especially the need for fundamental human rights. The measures adopted by state bodies are primarily aimed at protecting human health, but the effects and implications they cause limit other rights, so it raises the question of their adequacy. The basic and most important question is how to access health care in such conditions. Therefore, the main aim of the paper is to try to answer the question through PESTEL (P-Political, E-Economic, S-Social, T-Technological, E-Environmental, L-Legal) analysis of the healthcare system of the local community of Pale. Thirty factors of PESTEL analysis were quantified by using the Improved Fuzzy Stepwise Weight Assessment Ratio Analysis (IMF SWARA) method. The results obtained through the total of 70 formed models show that the current state of the observed local community is marked by social and legal factors. This analysis should present a diagnostic test of the current situation and provide a good basis for future actions.

**Key words:** PESTEL, Law, IMF SWARA, pandemic, economic factors

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## ПЕСТЕЛ АНАЛИЗА ЗДРАВСТВЕНОГ СИСТЕМА СА ОСВРТОМ НА ПРАВО НА ЗДРАВЉЕ ТОКОМ ПАНДЕМИЈЕ

### Апстракт

Пандемија изазвана присуством корона вируса утиче на све аспекте живота појединца и друштва у целини. То није питање само медицинске струке, већ и других области, а посебно потребе на остварење основних људских права. Мере доносе државни органи усмерене су превасходно на заштиту здравља људи, али ефекти и импликације које оне изазивају ограничавају друга права, па се поставља питање њихове адекватности. Основно и најважније питање је могућност приступа здравственој заштити у таквим условима. Стога, основни циљ рада је покушати дати одговор на постављено питање кроз ПЕСТЕЛ (П– Политички, Е–Економски, С–Социјални, Т–Технолошки, Е–Еколошки, Л–Легислативни) анализу здравственог система локалне заједнице Пале. Извршена је квантификација 30 фактора ПЕСТЕЛ анализе применом Improved Fuzzy Stepwise Weight Assessment Ratio Analysis (IMF SWARA) методе. Добијени резултати кроз укупно 70 формираних модела показују да је тренутно стање посматране локалне заједнице обележено друштвеним и правним факторима. Ова анализа треба да понуди дијагностику тренутног стања и пружи добру подлогу за будућа деловања.

**Кључне речи:** ПЕСТЕЛ, право, IMF SWARA, пандемија, економски фактори

### INTRODUCTION

Human health is of the greatest value to an individual and the community. It is talked about every day, but its importance, unfortunately, is realized only when it is impaired or endangered. Simply put, in layman's terms, health means a condition when a person is not ill, and from the perspective of the medical profession, it is defined as the absence of medically determined and recorded diseases and anomalies. The use of the term health refers to physical, mental, emotional, social and individual health. It is the most important postulate for the individual, but other subjects also have the obligation and interests to deal with the issue of health and exercise the right to health as a fundamental human right. A social community, in local, regional and international frameworks, should take care of people's health and regulate by legal norms the relations that arise or may arise in regular and emergency situations in the field of health and health care. The complexity of health issues, the values that health represents, conflicts of personal, political and general interests have shown that in emergency situations, such as the pandemic, access to health care is called into question.

The subject of this paper is the right to health and health care in Bosnia and Herzegovina during the coronavirus pandemic. The complexity of this issue, in addition to the implications created by the presence of the virus, is influenced by the constitutional, political and social order of life of citizens in this area. The aim is to point out the main aspects of the



right to health of BiH citizens and the problems they face using an example of the local community of Pale. Under the auspices of citizens' health protection activities, individuals and groups satisfy their interest aspirations in ways that are in direct conflict with laws and moral norms. The establishment of the right to health, not only declaratively but also factually, requires the absolute application of all legally defined rules of conduct, and increased ethical and moral responsibility of all those responsible for this issue.

The right to health cannot be observed only as a matter of medical sciences, nor of the field of health care. Likewise, there is not only one field of law and the activity of legislative and executive authorities that regulate the issue of the right to health. The coherence and intertwining of issues in the field of the right to health and general, social and individual interests require coordinated, timely activity of the socio-economic community in order to avoid the consequences of the pandemic. Special attention should be paid to inequalities in the exercise of the right to health care. Health is not just a biological issue. One of the fundamental human rights is freedom of movement, so man is the biggest "culprit" in the process of spreading the virus, and administrative measures at the time of the pandemic relate primarily to this issue. The standard of living, appropriate environment, access to information and the freedom of the media are factors that directly and indirectly affect people's health. It is difficult to clearly determine whether citizens' health depends more on the knowledge and abilities of medical workers or on the structure of the healthcare system. Care for human health should be systematically defined and implemented, and not left to the uncontrolled situation and will of individuals.

The aim of this paper is to analyze the current state of the healthcare system of the local community of Pale through PESTEL analysis. The analysis was formed with the total of 30 factors divided into six groups that were quantified using the Improved fuzzy SWARA method based on the preferences of ten decision-makers from different fields.

In addition to introductory considerations, the paper includes three other standard sections. Section 2 presents materials and methods providing information on the healthcare system of Bosnia and Herzegovina, the right to health in this country, and the steps of the IMF SWARA method and the Bonferroni aggregator used to average the weight values of factors within 70 executed models. Section 3 presents the results, while Section 4 provides a conclusion with model limitations and guidelines for future research.

## MATERIALS AND METHODS

### *Healthcare System of Bosnia and Herzegovina*

The political, economic and social organization of Bosnia and Herzegovina has its foundation in the Constitution. Bosnia and Herzegovina is a community of constituent peoples “consisting of two entities: the Federation of Bosnia and Herzegovina and the Republika Srpska” (The Constitution of Bosnia and Herzegovina, 2009, art. 1., item 3.). As a state, the actions of which are based on the principles of democracy, “Bosnia and Herzegovina and both Entities shall ensure the highest level of internationally recognized human rights and fundamental freedoms” (The Constitution of Bosnia and Herzegovina, 2009, art. 2., item 1.). However, the Constitution of Bosnia and Herzegovina does not contain provisions on health and health care. Neighboring countries provide other solutions. In the Republic of Serbia, “Everyone shall have the right to protection of their physical and mental health” (The Constitution of the Republic of Serbia, 2006, art. 68.), and in the Republic of Croatia, “Everyone shall be guaranteed the right to health care in conformity with law” (The Constitution of the Republic of Croatia, 2010, consolidated text, art. 59.). Attempts have been made to compensate the vagueness of constitutional solutions by granting rights to entities that “shall provide a safe and secure environment for all persons in their respective jurisdiction, by maintaining civilian law enforcement agencies operating in accordance with internationally recognized standards and with respect for the internationally recognized human rights and fundamental freedoms” (The Constitution of Bosnia and Herzegovina, 2009, art. 3, item 2.). Currently, three laws on health care are in force in Bosnia and Herzegovina. The Republic of Srpska, the Federation of Bosnia and Herzegovina and the Brčko District have the Law on Health Care. The Laws are entirely symmetrical in terms of their normative provisions, and even certain articles are identical.

There is no administrative regulation of internal relations in health care within Bosnia and Herzegovina, nor at the international level, so, in the 2020 Report on Bosnia and Herzegovina, the European Commission stated the following: “Bosnia and Herzegovina is at an early stage of preparation in the field of consumer protection and public health. No progress was made in the area of consumer protection and public health during the reporting period. The legislation on serious cross-border health threats including communicable diseases is not yet aligned with the EU *acquis* at all levels of government. In the coming year, Bosnia and Herzegovina should do the following in particular:

- adopt legislation at all levels prohibiting smoking in public places in line with the EU *acquis* and ratify the protocol to eliminate illicit trade in tobacco, and start to enforce both measures;
- conduct an assessment on the status of communicable diseases,

- further align its legislation with the EU acquis on substances of human origin and on medicines for human use and establish an oversight system in this field with a view to ensuring efficient coordination in the whole country” (Bosnia and Herzegovina 2020 Report accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 350, 2020).

The Law on Health Care defines the principles and measures of organizing and conducting health care, entities responsible for the healthcare of citizens, the rights and obligations of patients in achieving health care, financing health care institutions, and the content and manner of supervising health care institutions. “Health care of citizens is implemented on the principles of equality, accessibility, comprehensiveness, continuity and coordination” (Law on Health Care of the Republic of Srpska, 2009, 2015, art.11.). The laws clearly define human rights and values in health care. “Every citizen has the right to health care with respect for the highest possible standard of human rights and values, i.e. the right to physical and mental integrity and security of their personality, as well as respect for their moral, cultural, religious and philosophical beliefs” (Law on Health Care of the Federation of Bosnia and Herzegovina, 2010, 2013, art. 26.). Entities and districts organize and implement health care in their administrative territories, although “there shall be freedom of movement throughout Bosnia and Herzegovina” (The Constitution of Bosnia and Herzegovina, 2009, art. 1., para. 4). The Bosnia and Herzegovina health care system, organizationally observed, is constituted according to the constitutional and political system of the country, and as such shows considerable shortcomings in its functionality. “The legislative and institutional framework of the healthcare sector in Bosnia and Herzegovina reflects the constitutional order of the country, which is characterized by a complex administrative and territorial organization and a fragmented system of creating and implementing policies” (Analysis of the Legislative and Institutional Framework and Policy on the Prevention of Corruption in Healthcare Sector in BiH, 2019, p. 33).

In the Republic of Srpska, “the Ministry of Health and Social Welfare performs administrative and other professional tasks related to the control and protection of the health of the population” (Law on the Health Care of the Republic of Srpska, Official Gazette of the RS, no. 106, 2009, and no. 44, 2015). In Bosnia and Herzegovina, the Federal Ministry of Health has the same duties and tasks, while in the Brčko District, there is the Department of Health and Other Services. “Therefore, Bosnia and Herzegovina has 13 ministries of health: one in the Republic of Srpska (RS) entity, one in the Brčko

District, one in the Federation of Bosnia and Herzegovina and one in each of ten cantons” (BiH is a country with 13 ministries of health<sup>1</sup>). The heterogeneity of the healthcare system in such a small area and the multitude of laws and bylaws lead to different levels of quality of healthcare services, and even different treatment of patients. Declaratively, legal solutions state the principle of accessibility, fairness, solidarity, equality, comprehensiveness, continuity, specialized approach, continuous improvement of quality and efficiency. Theoretically, the institutional framework of the healthcare system is well established, but practice reveals the other side of readiness of the system to respond to challenges. The question is whether everything is set according to given standards since “the COVID-19 pandemic in our country revealed the real state of the healthcare system in Bosnia and Herzegovina. In the Federation, there is an evident lack of human resources both in certain clinical disciplines and in the field of public healthcare, especially in the field of epidemiology” (The voice of public health, 2021). The causes of such a situation are inadequate relationships between professional and administrative workers. “Too much attention is placed on isolated administration and service delivery functions with no link to policy formation/implementation, decision-making and establishment of incentives that could provide for cohesiveness of the health system” (Functional Review of the Health Sector in Bosnia and Herzegovina, 2016, p. 51).

Since the establishment of Bosnia and Herzegovina as a state, there have been no changes in the organization of health care, although in 2005 it was pointed out that “analyses, research and reports show that health care is at a poor level” (Brkić et al. 2005), and later in the media the same statements that instead of patients, health care is on life support. Such a healthcare system needs to undergo changes and its reform is being discussed both in professional circles and in the public.

The general conclusion is that every year more and more money is being allocated to finance growing needs, but that citizens are dissatisfied with the services provided. The system is designed to actually maintain the existing situation and finance the bulky apparatus, without providing services to citizens in the right way (A systemic approach to health care reform, 2020).

So far, the most significant reform attempt is certainly the implementation of the family medicine system since “one of the goals of health care reform in the FB&H is to provide health care to the population as close as possible” (Strategy for the Development of Primary Health Care, 2014, p. 6). The main problem “the healthcare system of Bosnia and Herzegovina is how to improve accessibility, quality, efficiency and sustainability for all citizens, in the context of population decline and aging, ex-

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<sup>1</sup> (<https://www.slobodnaevropa.org/a/bih-zdravstveni-sistem-organizacija/30942802.html>)

tremely fragmented insurance and service delivery system, poor financial management, and exodus of healthcare workers” (World Bank Group 2019, Health Care Report).

The healthcare system is a crucial segment of every society, including communities in Bosnia and Herzegovina, but it must be emphasized that it is not autarchic. Its dependence on economic and political or politico-economic factors has given rise to organizational and functional problems due to the political and institutional system of Bosnia and Herzegovina as a state, the unfavorable level of economic development, territorial organization of the healthcare system and uncontrolled personal commercial interest of individuals and parties (political or, it can be said, nationalistic). Healthcare improvement projects in Bosnia and Herzegovina that have been implemented and that are still being implemented have not been sufficiently incorporated into practical application in health care, so it is necessary to intensify the activities of the responsible ones in this sector, so that the right to health takes root not only declaratively, but also effectively. Monitoring, control and audit of the healthcare system, which is particularly dysfunctional and burdened with organizational, financial and personnel problems, should detect the causes that have led to this situation in order to eliminate them in the future and improve the healthcare system. Dealing only with the consequences, which is the case here, and empty politicians’ promises will not bring benefits. Consistency of legal and economic aspects of healthcare development should be a priority in planning and implementing reforms in this sector. This is especially important for emergencies, such as a virus pandemic, which, besides human health and life, destroys the entire system of social values in the present and future, leaving consequences that are hard to ignore. Preventive and proactive actions in building a healthcare system with a legal logistics and economic basis will mitigate or eliminate risks in regular and emergency circumstances.

### *The Right to Health in B&H*

Health as a term is defined in different ways by theorists, practitioners, individuals, society, medical professionals, lawyers, engineers, so, we can say, by every citizen. Everyone approaches this issue in their own way, depending on their knowledge and needs, and its significance undoubtedly comes to the fore only when it is impaired or endangered.

Health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition” (Trgovčić, 2018).

In everyday life, health is said to be the greatest wealth and that a healthy person has a thousand wishes, and a sick person only one. The

right to health does not only mean the right of a person to be healthy. It is an inclusive right that includes the right to a healthy environment, social security, work and economic independence, health care, education, information, freedom of speech, freedom of movement, personal integrity, healthy food and water. The scope of the right to health does not concern exclusively biological and social aspects of the individual. Man is a social being who builds a social community with his personal values, and in return, society should preventively and permanently take care of the health of the individual and the health of society as a whole. “Governments have a responsibility for the health of their peoples which they can be fulfilled only by the provision of adequate health and social measures” (Trgovčić, 2018). This right is provided by national, regional and international legal acts<sup>2</sup>.

Bosnia and Herzegovina has accepted international standards related to health and health care, thus undertaking the obligation of equal access to the coverage of health care of the population, without any form of discrimination on any grounds. These are: the Convention on the Rights of Persons with Disabilities, the Convention on Preventing and Combating Violence against Women and Domestic Violence in B&H, the Convention on the Elimination of All Forms of Discrimination against Women and the Convention on the Rights of the Child in B&H.

The Decision on the procedures and the process of harmonizing the legislation with *acquis communautaire*, adopted by the Council of Ministers in 2003, is the beginning of the synchronization of Bosnia and Herzegovina and the regulations of the European Union. In 2008, the Presidency of Bosnia and Herzegovina ratified the revised European Social Charter. Thus, Bosnia and Herzegovina is obliged as a social community “to provide advisory and educational facilities for the promotion of health and the encouragement of individual responsibility in matters of health; to prevent as far as possible epidemic, endemic and other diseases, as well as accidents” (European Social Charter, 1996, art. 11.).

What needs to be emphasized, regarding the low standard of living (poverty) and the economic situation, is that the Charter contains a provision whereby States parties undertake to “ensure that any person who is

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<sup>2</sup> There are numerous Laws of Bosnia and Herzegovina that directly and indirectly protect the right to health: Law on Health Care, Law on Health Insurance, Law on Rights, Obligations and Responsibilities of Patients, Law on the Protection of the Population from Infectious Diseases, Law on Pharmacy, Law on Medicines and Medical devices, Law on Radiation and Nuclear Safety in Bosnia and Herzegovina, Law on Waste Management, Law on Transplantation of Organs and Tissues for Medical Purposes, Law on Protection of Persons with Mental Disorders, Law on Environmental Protection, Law on Water Protection, Law on Forests, Law on Air Protection, Law on Communal Activities, Law on Consumer Protection, Law on Food, Law on Genetically Modified Organisms, Law on the Right to Access Information

without adequate resources and who is unable to secure such resources either by his own efforts or from other sources, in particular by benefits under a social security scheme, be granted adequate assistance, and, in case of sickness, the care necessitated by his condition” (European Social Charter, 1996, art. 13.).

It is clear that the right to health is not only a matter of legal and medical fields, but also a crucial issue of socio-economic relations in Bosnia and Herzegovina. In the Republic of Srpska “Everyone has the right to health care” (The Constitution of the Republic of Srpska, 2005, art. 37.), and in the Federation of Bosnia and Herzegovina, “All persons within the territory of the Federation shall enjoy the right to health care” (The Constitution of the Federation of Bosnia and Herzegovina, 2008, II, art. 2. item 1.), while in the Brčko District, health care is “the competence of the public authorities in the District” (Statute of the Brčko District of Bosnia and Herzegovina, 2010, art. 8.).

Human health, individually and collectively, is most endangered at the time of the emergence of viral infectious diseases, such as the COVID-19 pandemic. The right to health in such situations has a dominant position. The question is whether the healthcare system of Bosnia and Herzegovina can provide timely and sufficient protection with the institutional and legal framework in which it now operates. The activities of all political factors in Bosnia and Herzegovina (they are still the creators of all events in this area) are evident, but the question is whether they are effective and efficient. Since the outbreak of the pandemic until today, about seventy laws, decrees, decisions, orders, instructions, conclusions, manuals and solutions have been passed in order to prevent the spread of the disease (Order on mandatory implementation of measures to respond to the occurrence of diseases caused by the new coronavirus (COVID-19) in local self-government units in the Republic of Srpska, Official Gazette of the RS, no. 23, 2020). All subjects of socio-political life are included. Various restrictions and measures have been imposed, which have even violated other human rights and changed the way of life. Is that pragmatic? We tried to get an answer from professional, responsible persons who are, regarding their education and work tasks, directly involved in creating and implementing the healthcare system. The research was conducted by a survey conceived according to the structure of Pestel analysis.

#### *IMF SWARA Method*

The Improved fuzzy SWARA method was developed this year by Vrtagić et al. (2021) and consists of the following steps:

Step 1: After defining all the criteria on the basis of which the decision was made, it is necessary to arrange them in descending order based on their expected significance. For example, the most significant

criterion is placed in the first position and the least significant criterion is in the last position.

Step 2: Starting from the previously determined rank, the relatively smaller significance of the criterion (criterion  $C_j$ ) was determined in relation to the previous one ( $C_{j-1}$ ), and this was repeated for each subsequent criterion. This relation, i.e. comparative significance of the average value, is denoted with  $\bar{s}_j$ . An adequate TFN scale that enables the precise and good quality determination of the significance of criteria using IMF SWARA is shown in Table 1.

Table 1. Linguistics and the TFN scale for the evaluation of the criteria in the improved IMF SWARA method

Linguistic Variable	Abbreviation	TFN Scale		
Absolutely less significant	ALS	1.000	1.000	1.000
Dominantly less significant	DLS	1/2	2/3	1.000
Much less significant	MLS	2/5	1/2	2/3
Really less significant	RLS	1/3	2/5	1/2
Less significant	LS	2/7	1/3	2/5
Moderately less significant	MDLS	1/4	2/7	1/3
Weakly less significant	WLS	2/9	1/4	2/7
Equally significant	ES	0.000	0.000	0.000

Step 3: Determining the fuzzy coefficient  $\bar{k}_j$  (1):

$$\bar{k}_j = \begin{cases} \bar{1} & j = 1 \\ \bar{s}_j & j > 1 \end{cases} \quad (1)$$

Step 4: Determining the calculated weights  $\bar{q}_j$  (2):

$$\bar{q}_j = \begin{cases} \bar{1} & j = 1 \\ \frac{\bar{q}_{j-1}}{\bar{k}_j} & j > 1 \end{cases} \quad (2)$$

Step 5: Calculation of the fuzzy weight coefficients using the following Equation (3):

$$\bar{w}_j = \frac{\bar{q}_j}{\sum_{j=1}^m \bar{q}_j} \quad (3)$$

where  $w_j$  represents the fuzzy relative weight of the criteria  $j$ , and  $m$  represents the total number of criteria.



### Bonferroni Aggregator

The Bonferroni aggregator was used (Yager, 2009; Pamučar, 2020; Nedeljković et al., 2021).

$$a_j = \left( \frac{1}{e(e-1)} \sum_{\substack{i,j=1 \\ i \neq j}}^e a_i^p \otimes a_j^q \right)^{\frac{1}{p+q}} \quad (4)$$

In this research,  $e$  represents the number of decision-makers, while  $p, q \geq 0$  are a set of non-negative numbers.

### PESTEL analysis

Further in the paper, the factors of PESTEL (political, economic, socio-cultural, technological, environmental and legal factors) (Yüksel, 2012; Thakur, 2021) in the analysis of the healthcare system of the local community of Pale with reference to the emergency situation caused by the COVID-19 pandemic. The analysis was formed with the total of 30 factors classified into the given six main groups. Table 2 shows all PESTEL analysis factors. These factors affect the functionality of the healthcare system with varying intensity. They are defined according to the organization of the healthcare system in Bosnia and Herzegovina, the environment in which health care takes place, economic trends, legislation and the application of technology.

In conducting the research, medical workers (doctors and nurses), directors of healthcare institutions, secretaries and heads of healthcare services, heads of the Civil Protection Sector, members of the crisis management team of the Municipality for emergency situations, lawyers and social workers were interviewed. In terms of education, they are persons with higher education and specializations in medical, legal, security and organizational sciences. They perform their duties on the territory of the Municipality of Pale, which has 20,000 inhabitants and is territorially located in the central part of Bosnia and Herzegovina, i.e. it borders the FB&H. The citizens receive health care in the Republic of Srpska (Municipality of Pale) and in the Federation of Bosnia and Herzegovina (Sarajevo), and also citizens of one part of the Federation receive health care in the Municipality of Pale. We believe that due to such circumstances, the analysis conducted in this area is representative.

Table 2. Factors of PESTEL analysis

Political factors – P	Economic factors – E	Social factors – S
<b>P1</b> -Political instability	<b>E1</b> -Healthcare financing system	<b>S1</b> -Education, healthcare habits and lifestyle of the population
<b>P2</b> -Corruption and political influence in the healthcare system	<b>E2</b> - Population living standard	<b>S2</b> -Age of the population
<b>P3</b> -Organization, insurance and comprehensiveness of health care	<b>E3</b> -Investing in healthcare improvement	<b>S3</b> -Demographic changes and migrations
<b>P4</b> -Social and healthcare policy of the executive	<b>E4</b> -Economic crises (national and international)	<b>S4</b> -Social health care
<b>P5</b> -Healthcare quality and safety policy	<b>E5</b> -Healthcare service prices	<b>S5</b> -Public opinion and the media in health promotion
Technological factors – T	Environmental factors – EN	Legal factors – L
<b>T1</b> -Application of technology in the diagnosis and treatment of diseases	<b>EN1</b> -Healthy environment	<b>L1</b> -Legal and institutional framework of health care
<b>T2</b> -Negative impact of technology on health (mobile telephony, Internet, social networks)	<b>EN2</b> -Competitiveness of the public and private health sector	<b>L2</b> -Healthcare quality control
<b>T3</b> -Development and application of new medicines and methods in the treatment of diseases	<b>EN3</b> -Education, training and expertise of healthcare professionals	<b>L3</b> -Legal protection of users of healthcare services
<b>T4</b> -Automation of records of healthcare users and diseases	<b>EN4</b> -Population awareness of the importance of health and self-care	<b>L4</b> -Implementation and application of international legal norms
<b>T5</b> - Electronic communication in accessing health care and providing information about health hazards and measures taken	<b>EN5</b> - Population healthcare and health improvement projects	<b>L5</b> - The role and activity of national and international regulatory bodies

## RESULTS

This section of the paper presents the results of PESTEL analysis based on the preferences of 10 decision-makers who participated in the research, and these are described in detail above. It is necessary to create 10 special models (for each DM separately) since there are differences in

their preferences. An example of the quantified values of the main factors of PESTEL analysis for the first DM is shown in Table 3.

Table 3. Quantified values of the main factors of PESTEL analysis by IMF SWARA for DM1

	$\bar{s}_j$			$\bar{k}_j$			$\bar{q}_j$			$\bar{w}_j$			Crisp Value
E				1.000	1.000	1.000	1.000	1.000	1.000	0.234	0.243	0.255	0.243
S	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	0.234	0.243	0.255	0.243
P	2/9	1/4	2/7	1.222	1.250	1.286	0.778	0.800	0.818	0.182	0.194	0.208	0.195
L	2/7	1/3	2/5	1.286	1.333	1.400	0.556	0.600	0.636	0.130	0.146	0.162	0.146
EN	1/3	2/5	1/2	1.333	1.400	1.500	0.370	0.429	0.477	0.087	0.104	0.122	0.104
T	2/5	1/2	2/3	1.400	1.500	1.667	0.222	0.286	0.341	0.052	0.069	0.087	0.069
	SUM						3.926	4.114	4.273				

Based on the results shown in Table 3, it can be noticed that DM1 assigned the greatest importance to the economic and social group of parameters, while e.g. DM2 and DM3 marked a group of legal factors as the most significant and dominant within the healthcare system of the local community of Pale. For the other nine decision-makers, the calculation was performed in the same way based on their assessment of the main factors of PESTEL analysis. After defuzzification and obtaining real values for all factors of PESTEL analysis, the Bonferroni aggregator was applied in order to average the values obtained through 10 different models. After its application, the results are as follows: group of political factors has a value of 0.163, economic 0.220, social 0.143, technological 0.150, environmental factors 0.115 and legal factors 0.190, which is shown in Figure 1.

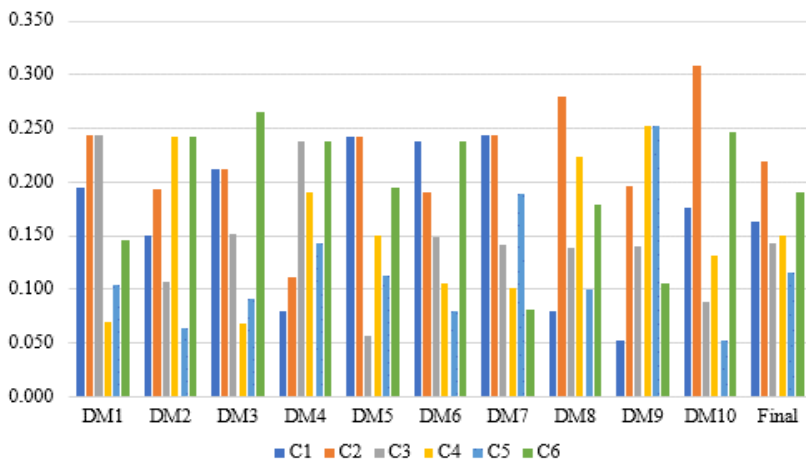


Figure 1. Results of the main PESTEL analysis factors for all 10 DM and their final values

Based on the obtained results shown in Figure 1, it can be noticed that social and legal factors are the most significant within the PESTEL analysis of the Pale healthcare system with values of 0.220 and 0.190, respectively. Environmental factors are the least valuable factors, which means not enough attention has been paid to these factors, although they are very important in every system and an increasing focus is being placed on them. Models for sub-factors are created in the same way, which means that another 60 models were formed, and, within each group, averaging was performed using the Bonferroni aggregator and the results shown in Table 4 were obtained.

*Table 4. Results of PESTEL analysis by factors individually*

Political			Economic			Social		
C11	0.028	4	C21	0.052	1	C31	0.037	2
C12	0.035	3	C22	0.046	3	C32	0.025	3
C13	0.035	2	C23	0.048	2	C33	0.018	5
C14	0.026	5	C24	0.029	5	C34	0.039	1
C15	0.036	1	C25	0.043	4	C35	0.024	4
Technical			Environmental			Legal		
C41	0.041	1	C51	0.028	2	C61	0.045	3
C42	0.019	5	C52	0.017	5	C62	0.046	2
C43	0.038	2	C53	0.028	1	C63	0.046	1
C44	0.025	3	C54	0.024	3	C64	0.028	4
C45	0.025	4	C55	0.017	4	C65	0.023	5

Table 4 shows that the fifth sub-criterion has the highest value within the group of political factors: healthcare quality and safety policy, while the fourth sub-criterion of social and healthcare policy of the executive has the lowest value. It is important to emphasize that there are nuances in difference in terms of rank for the first three sub-criteria. When it comes to economic factors, the most significant is the healthcare financing system, while the least significant is the economic crises (national and international). From the aspect of social factors, the fourth sub-criterion related to social health care has the highest value, and demographic changes and migrations have the lowest value. The application of technology in the diagnosis and treatment of diseases is the most important technological factor. Education, training and expertise of healthcare professionals is the most significant environmental factor, and three sub-criteria within the group of legal factors have almost identical values: legal and institutional framework of health care, healthcare quality control, legal protection of users of healthcare services.

Figure 2 presents all the criteria of PESTEL analysis, their values and ranks, which show that the highest quantitative value considering all 30 factors belongs to three criteria from the economic group of factors: E1-Healthcare financing system, E3-Investing in healthcare improvement

and E2-Population living standard. In addition, the following the most important factors belong to the group of legal factors and relate to L3-Legal protection of healthcare users, L2-Healthcare quality control and L1-Legal and institutional framework of health care.

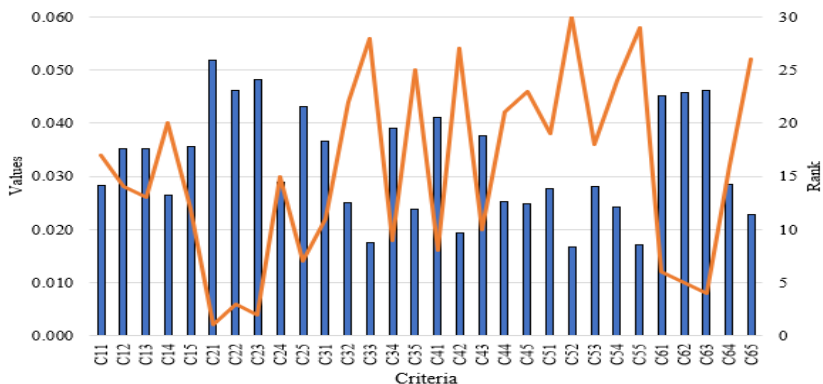


Figure 2. Results of PESTEL analysis with ranks

## CONCLUSION

The right to health in local, regional and international frameworks is one of the fundamental human rights since health is of immeasurable value both for an individual and a society as a whole. The terms of health, the right to health and the care of society and community for the health of citizens is defined by legal norms. However, the efficiency of health care is not only in the domain of medical areas, but also depends on economic circumstances/troubles, environment, political events, institutional organization of the healthcare system and emergencies caused by pandemics. The complexity of the social organization of Bosnia and Herzegovina, as a state, is reflected in the complexity of relations in its healthcare system, which has not reached a certain level of development in accordance with international standards nor is it effective in fighting the pandemic. Theoretically, the healthcare system in Bosnia and Herzegovina is well declared, but its pragmatism has been called into question due to the confusion and inconsistency of constitutional and legal solutions. Laws are enacted at the level of BiH, as a state, at the level of entities and at the level of the Brčko District. According to the BiH Constitution, citizens exercise their rights within the entities, even though there is a freedom of movement for persons throughout the country. The COVID-19 pandemic showed all the shortcomings in the functionality of the healthcare system and relations in such a community, which has been currently mitigated by creating over seventy decisions, orders, instructions, conclusions, manuals and solutions. Whether the bodies that enacted these acts have been

authorized and with professional personnel is a question addressed by individuals, medical experts and the media. The measures imposed violated other human rights. It is certain that the right to health and health care is the foundation of the survival of a society, but it is not autarchic and its functionality depends on other factors. By surveying responsible and professional persons in the Municipality of Pale, using PESTEL analysis, the research attempted to detect the causes of this situation and find possible solutions to overcome it. The Municipality of Pale territorially "borders" with the Federation of Bosnia and Herzegovina, so citizens of both territories use the healthcare services of the healthcare system of RS and FBiH. Therefore, we believe that this area is representative for the research and that the results obtained can be evaluated and used within Bosnia and Herzegovina.

The contribution of the conducted research can be observed from at least two aspects: primarily through the analysis of the current state of the healthcare system of the local community of Pale with reference to the overall healthcare system in Bosnia and Herzegovina. Using the PESTEL analysis, it is possible to find out how important and influential these factors are in the current situation. In addition, the integration of PESTEL analysis with the IMF SWARA method has been performed for the first time in the literature, so it can be a significant contribution from a methodological point of view. The results obtained, i.e. the application of the PESTEL-IMF SWARA model has shown that the most influential factors belong to the groups of economic and legal factors. The limitations of this model may be the narrow geographical area of the analysis, the total number of decision-makers, which can be closely related to the directions of future research. They refer to considering a wider geographical area, considering preferences of a larger number of decision-makers, execution of a SWOT analysis, etc. It is clear that health care should be a task for all entities that create a socio-political environment since its value is difficult to measure in material terms, but the consequences of inefficiency of the healthcare system are morally, materially and in the long term huge.

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## ПЕСТЕЛ АНАЛИЗА ЗДРАВСТВЕНОГ СИСТЕМА СА ОСВРТОМ НА ПРАВО НА ЗДРАВЉЕ ТОКОМ ПАНДЕМИЈЕ

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### Резиме

Велике светске кризе носе неизвесности у оквиру свих сфера функционисања, како пословног, тако и приватног карактера. Услови неизвесности су нарочито изражени у здравственим кризама односно пандемијама. С обзиром да пандемија која траје утиче на све аспекте живота појединца и друштва у целини, потребно је константно вршити одређене анализе. То није питање само медицинске струке, већ и других области, а посебно потребе за остварење основних људских права. Мере које се доносе од стране државних органа усмерене су преваходно на заштиту здравља људи, али ефекти и импликације које оне изазивају ограничавају друга права, па се поставља питање њихове адекватности, а самим тим у ефикасности у управљању кризним ситуацијама. Свакако једно од основних и најважнијих питања за сваког појединца је могућност приступа здравственој заштити у таквим условима. Узимајући у обзир све претходно наведено, чињенично стање, поставља се основни циљ овог рада који се односи на анализу тренутног стања локалне самоуправе са претходно наведених аспеката. Спроведена је ПЕСТЕЛ (П–Политички, Е–Економски, С–Социјални, Т–Технолошки, Е–Еколошки, Л–Легислативни) анализа здравственог система локалне заједнице Пале. Формирани су фактори ПЕСТЕЛ анализе са уравнотеженом хијерархијском структуром, која подразумева шест главних фактора и по пет подфактора у оквиру сваке групе. Консултована је група доносиоца одлука различите структуре која је извршила оцењивање.



вање свих фактора у односу на познавање функционисања датог здравственог система и окружења уопште. Извршена је квантификација 30 фактора ПЕСТЕЛ анализе применом Improved Fuzzy Stepwise Weight Assessment Ratio Analysis (IMF SWARA) методе, која представља нов приступ вишекритеријумског одлучивања. Добијени резултати кроз укупно 70 формираних модела показују да је тренутно стање посматране локалне заједнице обележено друштвеним и правним факторима. Ова анализа треба да покаже дијагностику тренутног стања и пружи добру подлогу за будућа деловања.



## AWARENESS CONTEXTS OF ONLINE INTERACTIONS AT THE CANNIBAL CAFÉ FORUM

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### Abstract

This paper demonstrates how Glaser and Strauss's procedural guidelines on awareness contexts can be utilised to study interactions in online deviant communities. This is, to our knowledge, the first time their awareness context paradigm has been used to examine the interactions of online communities of deviants. The research is based on a qualitative content analysis of Cannibal Café members' discussions. By analysing the relationship between the Cannibal Café members' identities, their awareness, and their interactions, our study has shown that the open awareness context, which is one of the four awareness contexts identified by Glaser and Strauss, was dominant within this online community of cannibals. However, although most of the interaction unfolded under the awareness context, this context actually coexisted with the suspicion context. One context did not transform into another: they simply coexisted, but the open awareness context prevailed, which proved crucial for the unconstrained expression of deviance.

**Key words:** awareness contexts, online interaction, online deviant community, cannibalism

## КОНТЕКСТИ СВЕСНОСТИ У ОНЛАЈН КОМУНИКАЦИЈИ НА КАНИБАЛ КАФЕ ФОРУМУ

### Апстракт

У раду се бавимо испитивањем могућности за примену процедуралних правила која су осмислили Глејзер и Штраус, за разумевање контекста свесности у онлајн интеракцији. Колико је нама познато, ово је прва примена ове парадигме за проучавање интеракција у оквиру девијантних заједница на интернету. Истраживање је базирано на квалитативној анализи садржаја дискусија чланова форума Канибал Кафе (енгл. Cannibal Café). Успостављањем везе између њихо-

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вог идентитета, свесности и интеракције наше истраживање је показало да је отворени контекст свесности, који је један од четири основна контекста које су идентификовали Глејзер и Штарус, онај који доминира у овој заједници девијаната. Међутим, иако доминантан, он није и једини који се овде може идентификовати будући да је и контекст сумње, иако у мањој мери, ипак јасно заступљен. Важно је додати и то да се ови контексти не преливају један у други већ једноставно коегзистирају, на крају, дозвољавајући неспутано испољавање девијантности љубитеља канибализма.

**Кључне речи:** контексти свесности, онлајн интеракција, онлајн девијантност, канибализам

## INTRODUCTION

In recent years, there has been growing interest in studying deviant communities in virtual settings (Deshotels and Forsyth, "Conjuring, Expanding"; Sandler; Kavanaugh and Maratea; Maratea and Kavanaugh). Since the interaction among deviants in virtual environments is mainly anonymous, members of these online communities are less concerned about stigma or legal penalties. On the other hand, this may encourage communal efforts at rationalization (Durkin et al.).

The virtual space of the Internet makes an ideal setting for the creation of Goffman's "back places" (*Stigma*), where individuals do not feel forced to conceal their stigmatising characteristics and need not worry about the tense consequential communication with others due to their stigma. Whether individuals appear in these "back places" voluntarily or not makes no difference: these places provide an atmosphere of special intimacy. Their visitors come across other persons who suffer similar stigmas and may feel relaxed enough to discuss this candidly. For this reason, the back places on the Internet are so precious to extreme deviants such as the cannibalism lovers' community examined herein, whose social stigma impedes any reasonable attempt to create a subculture in a physical space (Maratea and Kavanaugh; Durkin et al.).

Another significant aspect of the study of deviant communities on the Internet is that virtual spaces present a unique opportunity to analyse the interaction among forum users in the process of the development of online identities and during role play, which yields important insights into the social organisation of deviant online communities and the interactions within them. The relationship between identity, interaction and self-presentation in the online context has been examined in the past few decades from various perspectives, including Erving Goffman's social dramaturgy (*The Presentation; Behavior; Interaction Ritual*). The key assumption is that the communication of digital platform users is understood and interpreted by means of an interaction model which exists between actors and their audiences (e.g., Miller; Ellison et al.; Bullingham and Vasconcelos; Pejković). In this sense, visitors to digital platforms use expressive

resources (text, audio-visual content, etc.) to present themselves to other visitors (their audience) by assuming a desired role, thus forming their online identities.

Our study is based on the context analysis of online interaction among the Cannibal Café forum participants within the theoretical framework of symbolic interactionism, and relies chiefly on Glaser and Strauss's approach to awareness contexts (Glaser and Strauss, "Awareness Contexts") They assumed that when men confront each other, neither can at all times be certain that they know the other's identity or the way in which their own identity is perceived by the other. We argue that interaction context in online communities of deviants is a paradigmatic example of this hide-and-seek identity interplay which inspired us to use Glaser and Strauss's approach to awareness contexts.

Although Glaser and Strauss's grounded theory has been applied to studying a community of online deviants, this is, to our knowledge, the first time their awareness context paradigm has been utilised to examine the interactions of online communities of deviants (see Sandler). Therefore, this study demonstrates the heuristic potential of the awareness contexts paradigm in studying online interactions. In addition, this paradigm is expected to help us establish the dominant awareness context in the Cannibal Café forum and ascertain if awareness contexts transform during the interaction.

The rest of the paper is divided into several sections. In the first section, we explain the approach based on the study of awareness contexts. In the second section, we explore the application of this paradigm for the awareness context examination to the online communities of deviants. The section titled *Methods and Materials* explains the procedural guidelines for the awareness context study. We then move on to discuss the findings of our research and to reflect on the final considerations.

### *AWARENESS CONTEXTS IN SOCIOLOGICAL LITERATURE*

According to Anselm Strauss and Barney Glaser, awareness contexts are a central concept in the study of human interaction (Glaser and Strauss, "Awareness Contexts", *Awareness of Dying, Time for Dying*). Their study of awareness contexts took shape after years of research of interactions in US hospitals, focusing primarily on the relationship between the medical staff and the dying patients.

Based on this, they defined the awareness contexts, and offered their typology and guidelines for studies in various social settings. These guidelines, in their opinion, constitute the paradigm components for exploration of awareness contexts (Glaser and Strauss, "Awareness Contexts" 669).

This theory has been broadly applied in the studies of social interactions, identity and awareness (Schmid and Jones; Schou; Timmermans; Seale et al.; Richards et al.; Harrop et al.; Albas and Albas; Muzzin).

While observing the process of dying (the organisation and structural conditions for secrecy, the course of interactions, etc.) in hospitals outside San Francisco, Glaser and Strauss learnt that terminally ill patients, unlike the medical staff who tended to them, were mostly unaware of their coming death (Timmermans). They assumed that the phenomenon of awareness in the interaction process can be quite complex because every interaction involves two or more persons and each person has their unique way of managing their own identity and the identity of the person they are interacting with (Glaser and Strauss, "Awareness Contexts"). From there on, they produced the theory of awareness contexts, which, in the broadest terms, encompass everything a person, a group of people or a community know about a specific issue. Consequently, the awareness context concept, as a unit of analysis, may apply to any social situation which involves interaction and includes all that the interactants know of the others' identities and their own identity as perceived by others. They constitute authentic structural units rather than mere attributes of structural units (role, group, organisation, community, etc). By "context," they mean a structural unit of an encompassing order larger than the other unit under focus: interaction. Awareness context is a structural unit "which exceeds" and "surrounds and affects" the units of analysis (Lee).

Glaser and Strauss ("Awareness Contexts" 678) identified four types of awareness contexts to be given special consideration since they proved useful in accounting for different types of interaction:

(1) **Open** awareness context refers to any situation in which each interactant is aware of the other's true identity and his/her own identity as perceived by others;

(2) **Closed** awareness context denotes a situation in which one interactant does not know either the other's identity or the other's view of his identity;

(3) **Suspicion** context is a modification of the closed awareness context. In this situation, one interactant doubts the other's true identity, or the other's view of his own identity, or both;

(4) **Pretence** context is a modification of the open awareness context, and it denotes a situation in which both interactants are fully aware of each other's identities, but pretend they are not.

This typology hinges on the consideration of two dichotomous variables, or awareness (pretence and non-pretence) and two interactants, and the consideration of two trichotomous variables: awareness degree (awareness, suspicion, and unawareness) and identity (own identity, and own identity as seen by the other and the other's identity) (Glaser and Strauss, "Awareness Contexts" 678).

The concept of awareness contexts and the paradigm for their study are useful for understanding different approaches to exploring awareness and interaction in various social settings. To demonstrate this, Glaser and Strauss made an overview of works of the precursors to the interactionist perspective, which contained the roots of their theory.

Goffman (*The Presentation*), for instance, speaks of closed awareness contexts and pretence contexts because people tend to manage their impressions by performing the desired identity. However, unlike Glaser and Strauss, who focused on the structural conditions imposed by social organisation, Goffman was more centred on situational conditions. He did not explore the consequences of interactions or their development.

On the other hand, Mead's interactionist theory revolved around the open awareness context (see Mead). Mead believed that the awareness of a person's gestures (speech, nonverbal gestures) affected one's definition of others and their future behaviour. According to Glaser and Strauss, he assumed that the consequential interaction would be open and sincere, with the exception of certain situations he mentioned, such as acting ("Awareness Contexts" 674).

The sociology of dying and social activism centred on these issues has greatly benefited from Glaser and Strauss's theory of awareness contexts in hospitals. It is also a product of the grounded theory as a qualitative method based on coding, which aims to form a theory (see Glaser and Strauss, *The Discovery*; Timmermans).

#### *THE APPLICATION OF THE PARADIGM FOR AWARENESS CONTEXT STUDY TO ONLINE DEVIANT COMMUNITIES*

The awareness context study paradigm is applicable to various social units, especially to the development and course of social interaction. Glaser and Strauss particularly encouraged its application to "deviant communities whose actions are visible to 'squares'" ("Awareness Contexts"). An important novelty in our research is that it deals with awareness contexts in a virtual environment, whereas Glaser and Strauss's paradigm of awareness contexts is commonly applied to the physical world. This, of course, may be challenging given the fact that the identities created in virtual settings are far more flexible than those developed in the "offline" reality, and they are not necessarily based on the real identities of Internet users (Turkle "Cyberspace and Identity"). Communication on the earliest digital networking platforms and chat rooms, such as forums, involved "interplay between anonymity and fantasy, versus honesty" (Marneweck 249). At the very beginning of research into identity in cyberspace, e.g. in multi-player games and forums, Sherry Turkle realised that the virtual identity, personality and even the body may be constructed merely by textual description ("Cyberspace and Identity"). Furthermore,

the construction of multiple identities is an option as well, and Turkle claims that life in a number of different virtual worlds and playing with identities also has a mild therapeutic effect – from resolving certain conflicts originating in the real world to facilitating self-knowledge (Turkle, "Constructions and Reconstructions").

As we see deviance as a relational category rather than as a substantive attribute of individuals and groups (Goffman, *The Presentation; Stigma*), we argue that the open awareness context is crucial for the unconstrained expression of deviance. Cannibalism is a taboo thing, often associated with horror stigma and monstrous behaviour which makes people restrained in expressing their interest in cannibalism in offline settings. However, virtual communities allow deviants to experiment with their preferences freely, without the constraints of stigmatization (Jenkins; Quinn and Forsyth; Deshotels and Forsyth, "Postmodern Masculinities"), and thus they offer a fruitful research landscape for understanding deviant behaviour.

The interaction designed by the Cannibal Café forum (CCF) organisation, which is the subject of our study, created a space in which participants assumed roles and thereby created their online identities. CCF has been inactive since 2002, when the last message was posted. The content of the forum was intended for users with cannibalistic fantasies and desires<sup>1</sup>. Forum participants discussed and shared pictures, photos, stories and advice on cannibalism. Some even appear to have been intent on meeting other users in the physical world. According to the forum's home page, the CCF represents an *UnderNet* channel for *snuff sex*, accessible from any *UnderNet* server in the world. The forum, it claimed, intended to facilitate sharing stories, fantasies and photos among adults concerning such topics as sex and death as a result of sex, and encouraged the members to post comments, impressions and suggestions in the designated section. An adult was defined as a person recognized in his or her geopolitical reality as such, but the forum would respect a member's wish to misrepresent his/her age, this being attributable to role playing.

Role playing is quite common in digital culture: participants may engage in pretence, making things up and sharing their fantasies (for more information, see Brown). Participants who pursued hobbies such as role play have a notable propensity for self-concealment since their activities tend to deviate from a broader social context and from what is understood to be "normal behaviour". An important effect of the forums in which sexual context is shared through role play designated as deviant is that individuals who are ostracized in the real world establish strong collective bonds based on the same interests (Brown 5). This results in social

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<sup>1</sup> All information cited herein as the content of the forum was downloaded from *archive.org*.



recognition, a subtle expression of affinities, a stronger identity and relaxed tension caused by stigma suffered in reality.

Despite the CCF's proclaimed intention to enable role play and sharing cannibalistic fantasies and content, it can be reasonably assumed that some members were serious about their cannibalistic intentions.<sup>2</sup> German Armin Meiwes, for example, murdered and ate his willing partner, videotaped the whole process and posted the recording. Meiwes had profiles in the CCF and similar websites. The forum was suspended after the event (Lykins and Cantor 181).

From a legal point of view, cannibalism is definable as an "act of one individual of a species consuming all or part of another individual of the same species" (Schutt 7). Human cannibalism is an exceedingly rare occurrence in today's society, perceived as an extreme act of violence. Of the three broadest categories of cannibalism: ritual, survival, and pathological, the last is the least common. Pathological cannibalism is a deviant type of behaviour, harshly condemned by the community at large and often connected with different kinds of paraphilia and psychotic disorders (see Raymond et al.).

The relational characteristic of deviance may be the most notable one from several aspects. The first aspect is that the CCF was meant to facilitate content sharing and role play which are problematic in relation to normative normality predominant in the real world. In this aspect, the interplay of reality and virtuality as a specific setting in which deviance is defined is quite significant (Boellstorff; Adler and Adler; Bullingham and Vasconcelos). Therefore, the norms of normality originating from the physical world, and the fluidity and anonymity of the virtual environment produce a field in which users may seek interaction on the Internet where they would not be forced to conceal their deviance, otherwise stigmatised offline.

The second aspect is the atmosphere in the forum, where the idea of deviance is disregarded because participants of similar disposition are expected to bond. The forum participants disclose their fantasies and thus produce the intended impression of cannibals. Nevertheless, regarding the

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<sup>2</sup> The American Psychiatric Association defines many of the fantasies and desires described by the CCF members as paraphilic disorders, so collectively they may be qualified as a deviant community. These fantasies indicate sadistic, masochistic and fetishist disorders, which are common paraphilias by comparison, but may have harmful consequences, including injuries, murder, and inflicting damage to others, so some qualify as criminal offences (American Psychiatric Association 685). Relatively often, the forum discussions would involve paraphilias like necrophilia, zoophilia (705) and vorarephilia, defined as erotic desire to consume or be consumed by another human being (see Lykins and Cantor). Due to physical and legal constraints, illustrations, photos, and audio-visual content displaying elements of these paraphilic affinities are frequently shared by and among members of various online subcultures or digital communities such as CCF (Lykins and Cantor 181).

second aspect, it is important to bear in mind the variability of roles played in relation to the context of interaction. Even though the CCF is clearly supportive of people's cannibalistic urges, it is still important to ascertain how the infusion of non-deviant opinions in the CCF changes the role play mode (Goffman, *Stigma*). In other words, we wish to problematize the question of whether the cannibalistic preference discourse changes when the discourse which disapproves or condemns cannibalistic urges infuses the interaction. Would users share their fantasies differently and would communication move towards self-stigmatisation, and therefore towards the "attenuation" of deviance, which would be an expected reaction in the offline settings, or would an altogether different scenario emerge? The last aspect of deviance we consider here is whether the virtual spaces designed especially for users most often designated as deviants imply a *sui generis* discursive organisation of areas of perversion (Foucault) in conformance with strict criteria. More specifically, is this a new area in which types of perversion are delineated through interaction?

### MATERIALS AND METHODS

An attempt at a qualitative analysis of textual content generated through interactions in the CCF and its examination by applying the Glaser-Strauss's paradigm of awareness contexts constitute the methodological basis of this research ("Awareness Contexts"). The paradigm consist of six procedural directives: (1) the description of awareness context(s) in the given interaction; (2) the structural conditions under which these contexts appear; structural conditions refer to the units of analysis which may vary from simple (role, status, relationship) to more complex (group, community, organisation); (3) the resultant interaction; (4) changes of interaction which correlate with the transformation of awareness contexts, as well as the structural conditions for such transformation; (5) tactics used by interactants as they attempt to manage the changes of the awareness context; and (6) the consequences of the original awareness context, its transformation and associated interactions for interactants and the affected organisations or institutions (Glaser and Strauss "Awareness Contexts" 671). And yet, the above guidelines need not be followed to the letter if the specificities of certain social phenomena require a somewhat modified approach (Glaser and Strauss, "Awareness Contexts" 678).

The unit of analysis includes members' posts/correspondence visible to other users. CCF's content (posts/correspondence) was archived in a special file for safety reasons, as the disappearance of data from the In-

ternet can never be completely excluded.<sup>3</sup> The sample consists of the longest 30 posts/correspondence in the CCF to provide full insight into the course of conversation and potential transformation of awareness contexts.

Research data was coded by using a method which is the most similar to the grounded theory. Coding was concept-based and involved three stages: open, axial and selective (Babbie 423). At the first stage, conceptually similar events or actions in online interactions were grouped into separate categories. During axial coding, we analysed the codes produced in the process of open coding in order to identify more general concepts. In the last phase, the results of the two earlier processes were categorised so as to come up with the codes related to the central concept of the study, i.e. awareness contexts. QDA Miner software<sup>4</sup> was used at all stages of data analysis.

*Table 1. Examples of code development*

Open coding	Axial coding	Selective coding
Sharing a fantasy of being eaten	Disclosing a fantasy	Open awareness context
Looking for a girl who wants to be eaten	Wants a real manifestation	Open awareness context
Asking where he can find stories about cannibalism	Asking a question	Open awareness context
Asking how realistic girls are when it comes to the desire to be eaten	Asking a question	Suspicion context

All registered forum members and the administrator used nicknames in their communication. Users' privacy is protected in this paper by concealing their nicknames since some participants in the digital world are easily recognisable by their nicknames and avatars (Petrović; Petrović et al.; Varis). Users' identity is thus protected.

## *RESULTS AND DISCUSSION*

### *Awareness Context Relative to Interactions*

CCF is a digital community whose members partook in interactions by mutual correspondence, and by posting and sharing content related to cannibalism and similar subjects. They started the posts/correspondence by presenting themselves, disclosing their fantasies, posting stories, posing ques-

<sup>3</sup> Retrieved from *archive.org*. This website is a digital library created to store old, inactive websites and other digital phenomena. Scientists, journalists and researchers may find it useful.

<sup>4</sup> For more information about the software, visit: <https://provalisresearch.com/products/qualitative-data-analysis-software/>

tions to other users and the administrator, etc. At the point of self-presentation, the users stated what they were after in order to satisfy their fantasies or urges (e.g. *seeking a female who wishes to be eaten, offering their body up for sexual slavery* and the like). The most frequently asked questions were about where they could find films, photos and illustrations with cannibalistic motifs, and questions about the website directed to the administrator. The forum also included an app for a kind of cannibalistic auction. Members could use this app to put themselves (and their bodies) up for “sale” while the others made bids. Those who wanted to be sold were required to fill in a form and send their photos. In the form, they listed the kinds of (sexual) acts they were trained for and what could be done with them, which was the major expression of their masochistic, suicidal and submissive tendencies. They would also indicate if their participation in the auction was voluntary or not; ergo, being “sold” by somebody was also an option. The auctioned off participants were often discussed by other participants, who debated their price and profile, reducing them to meat and referring to them symbolically as “cows” and “pigs”. The forum administrator participated in the communication among the members. His profile on the app featured a photo apparently of himself and his daughter. He also took part in some interactions involving role play in the forum. Judging by the content of his posts and replies to other participants, he was a connoisseur of arts, the erotic role play subculture and cannibalistic fantasy sharing.

The openness of communication which was meant to create an impression of a person with cannibalistic urges appears to support the assumption that the CCF was a space in which the self could be realised through virtual identity. This identity in the forum settings was free of the usual stigma suffered by deviants in their daily offline reality. Furthermore, the anonymity of their virtual identities granted them a non-discredited status in interactions, while the participants’ unification ensured more spontaneous interaction and lower probability of judgment.

### *Structural Conditions for the Emergence of Contexts*

The organisation of communication in the forum (see Turkle, “Constructions and reconstructions”; Marneweck) facilitated structural conditions which favoured the development of the open awareness context. They included: (1) accessibility of expressive resources and visibility of actions in one place; (2) anonymity and unlimited freedom in the creation of virtual identity, and (3) “situation definition” i.e., the concept of a community which encourages fantasy sharing and role play.

(1) By a mere textual description, participants could create their virtual identity and develop further communication. As in other forums, there was a designated space where all participants could see others’ posts and correspondence, whereby their actions became visible to all. Expressive resources available to them for the creation of virtual identity were

nicknames and the content they would post. For example, of the 220 randomly selected nicknames, 46 included connotations which served the participants' self-presentations. The words *hungry*, *meat*, *vore* and *cannibal* as part of the nicknames indicated cannibalistic urges; *sir*, *master*, *dom* indicated the urge to dominate; *slave*, *boy* referred to submissiveness, etc. Other nicknames did not feature any special connotations. Therefore, much of the participants' self-presentations consisted of their posts and the ability to share hyperlinks, photos, illustrations and graphs, which were also an indication of their tendencies and fantasies in the mentioned app.

(2) As in the forums, participants were anonymous and presented themselves by their nicknames. They did not have to state their real names or present any other information that could reveal their everyday identity. Although the participants assumed certain roles by using the available expressive resources in an effort to manage the other members' impressions of them, this represents the very nature of virtual identities, so it cannot be interpreted as the pretence context.

(3) The forum's concept and apps are intended for role play, especially for erotic role play, during which the focus is on the narrative and the characters (virtual identities), and during which the narratives are developed through communication in relation to the overall story, participants' interactions and characters' features (Brown 4). Such a concept strengthened the open awareness context because it was understood that the participants were free to create their own roles and, therefore, to design their communication with others.

### *Consequential Interactions*

Consequential interaction in the forum was very brief, with the tendency to switch to private communication. Public correspondence was often interrupted and presumably continued privately since the participants, in many cases, wrote their emails and then stopped communicating with each other publicly in the forum. This is why the sample included the longest 30 threads, each of which consisted of 8 to 33 posts/replies within the correspondence. The analysis of the longest threads singled out three categories of user interaction: (1) sharing fantasies; (2) role playing, and (3) ridiculing the forum's concept and other users' fantasies.

(1) When participants only shared their fantasies, these were described verbally or by means of artistic content, such as stories. Further interaction tended to develop into the exchange of fantasies or discussion about them. The following discussion in the forum illustrates this well:

Participant 1: I've been into the idea of being a willing live roaster, or sushi for years now. It's my biggest sexual fantasy. It's purely fantasy for me, but i do sometimes think it would be really sexy to meet a guy in real life who is into the same kind of fantasy, to be

able to just talk freely about it, maybe even roleplaying things etc - so far i've only ever shared my fantasies with people over the internet - never face to face. I just wondered - have any of you ever shared your fantasies with partners? I love the idea of playing out fantasies with a guy, rather than having to keep it all purely on the internet. I'd be genuinely interested to hear if anyone out there is able to share these fantasies with rl partners, and what it's been like. I can't help feeling that if i did tell a guy in rl that i fantasise about him roasting me alive, he just might think i'm a bit weird.

Participant 2: Yes, there are most certainly those who have shared their fantasies with their lovers and whose relationships subsequently 'lived' to tell the tale.... My personal kink isn't quite live-roasting, but it's close enough to the ballpark for my experiences to be able to perhaps shed some light. It is not everyone who will be able to handle the truth but many people, if they love and respect you, will. I'm not sure just how you could roleplay live-roast, but the sushi thing would be a snap. Eating sushi from the body of a naked lady stretched before one has long been available in Japan. Check out the stories I mentioned above. You can reach me after by Email if you'd like to correspond about anything.

Participant 3: I dont think its weird at all. I think, acting it out in real life is more of a rush and yes i have fantasied it with a prior girlfriend :)

(2) The difference between role play interactions and fantasy sharing interactions is that the former focuses on the characters. Although role play interactions often included sharing fantasies, the focus was not on the fantasies themselves but rather on the communication between participants through their created characters or roles:

Participant 1: Your work is so great that it makes one hunger, makes one a slut for more. Your approach, your creativity makes your work unique, in the same light as one would look at works by Dolcett and some of the other famous snuff artists and writers. Only you have taken it one more step farther, a gigantic step forward as you have taken your unique style and applied it to the creation of a site like non other, one that we all cherish and enjoy. You are a master among masters and mistresses (Doms), you are a great one. Your Cow (mmmmooooo)

Participant 2: You are too kind. But in all modesty... I have to say that I am but a follower of the master, Dolcett. However... I will be happy to use you as a 'Dolcett Girl" .. just say the word.

(3) In five threads, the discussion progressed through derision of other participants' fantasies and of the very concept of the forum. The basis of communication in these threads was the argument between the mockers and the mocked. The example below is a part of one such thread,

in which one participant mocked another, who fantasized about being eaten by a man:

Participant 1: Go to northern shores of Australia, you could either get eaten by a great white sharks or choose to get eaten by large saltwater crocodiles.

Participant 2: It doesn't appeal I'm afraid. South America on the other hand would be great, to get eaten by a hidden tribe! Now you're talking!

Participant 1: Well I don't know, you had said that you wanted to be eaten, and if a shark eats you or anything eats you it's all the same being eaten is being eaten isn't it?

Despite the predominance of an open awareness context throughout most of the communication in the forum, this research has found that the suspicion context emerged as well, depending on the participants' definition of the purpose of the forum. Participants were mostly uncertain about how serious others were about living out their fantasies, which were themselves taboos. One participant named a thread *How real is this?* His truncated post was as follows:

Participant 1: Hello, I am wondering just how real these girls are about becoming meat. Has anyone actually spit-roasted, or been to a real spit-roasting of a female human? How does one get invited to one of these? Please ladies, if you are for real respond, I would love to hear just how willing you are to self terminate in this manner. Responses by lurkers are welcome as well. Please I really want to hear from you.

In many cases, participants insisted they were really intent on playing out their fantasies and welcomed only the responses from those who were serious about their cannibalistic intentions. Some of their truncated posts are listed below:

Participant 1: I'm a Oriental 19 Year Old Female Prime Meat. Looking for a serious Male Cannibal to eat me. Write to me and tell me how serious you are about eating me and tell me just how you plan to do it and ask for my pics and anything else and I will send them to you. I really am serious about wanting to be eaten up.

Participant 2: please tell me more. if really serious send more info.

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Participant 1: i am looking for a man who would love me in his belly, i have a beautiful delicious figure and i'm deadly serious about being eaten, please reply so we can arrange ur feast.

Participant 2: if your really serious and not playing. Drop me a line. Lets o dinner

Participant 3: i would love to eat u and have u in my belly. i am also deadly serious, very serious. if you want to know more e-mail me... what is your age where do u live and do you have any pics.

These posts illustrate the participants' uncertainty about the actual intentions of other forum members and about the general purpose of the forum. Some believed the forum was intended for real cannibals, and some that it was all about sharing fantasies and role playing. This gave rise to the development of a suspicion context with some participants. Some of them doubted the virtual identities of others, depending on their subjective definition of the purpose of the forum. Out of the 30 analysed threads, 29 began with an open awareness context, and only 1 with a suspicion context. The suspicion context was noticed in 5 threads.

### *The Connection between Interaction Changes and Awareness Context Changes*

Contrary to what occurs to the open awareness context in interactions in the physical world, the open awareness context in online interaction does not get transformed into a suspicion context. Instead, the open awareness context and the suspicion context appear to coexist from time to time. The structural condition which enabled this coexistence is the very nature of communications in forums, which is asynchronous and does not depend on time or space.

All instances of a noticeable suspicion context were related to the subjective definition of the forum's purpose, which in turn made some participants doubt the virtual identities of others. Three categories of such participants were identified: (1) those who suspected that some of the participants were too serious about their cannibalistic intentions or overly determined to realise them, (2) those who doubted that the participants who claimed to be eager to live out their fantasies were actually serious about it, and (3) those who expressed general suspicion that some participants could not be trusted with their fantasies for fear of abuse.

(1) Two examples below illustrate the suspicion context with the first group of participants. In the first, a participant shared her fantasy of being eaten and played a role in the forum the whole time. Having exchanged messages with another participant, she claimed the correspondence had scared her and that he was, in fact, a sadist. Other participants, including the administrator, replied to her post in a role play mode. She then wrote that the administrator was a sadist too and left the forum shortly afterwards.

In another case, a participant became suspicious of the true intentions of a member who described his cannibalistic fantasies in a post. In her reply, she condemned his post and suggested that the moderators should remove it because the forum was actually about role play and fan-



tasies. Her reaction reveals her suspicion that he was too serious about his fantasy and that his post alone could qualify as a criminal offence. She referred to him in offensive terms and described him as a deviant person. He then remarked that her reaction was absurd because the forum was intended for cannibals. Several participants joined the discussion. One of them also voiced suspicion and asked: *“Isn't the keyword here fantasy? roleplay? Is someone gonna tell me that girls are really being spitted, roasted & eaten? I tend to think NOT! If I'm wrong, please fill me in.”* Yet another member ignored the questions and the outrage altogether, and continued playing the part of a cannibal and describing his cannibalistic fantasies. In the end, the participant whose fantasy was called into question in the first place decided to justify himself and replied: *“Yes It is just fantasy and roleplay. No, no girls are being harmed! I did take the post to to much of an extream. I apologize for that.”* He apologised and admitted to having crossed the line with the description of his fantasy.

In this part of the interactions, the relational characteristic of deviance category is notable. Participants' posts include information on the concealment of the discrediting element of the self (cannibalistic urges) in offline interactions, even in communication with the people with whom they are closest. On the other hand, the specific setting in which the interaction takes place allows the members to not only openly manifest the self but also to use a richer repertoire of techniques in communication with outsiders (the mockers) than the ones deviants usually activate in face-to-face interactions. Instead of resorting to the adaptation strategy<sup>5</sup> directed at non-deviant practices, the participants actually go on playing their roles and deepen the communication from the position of deviants who control the meanings, or word connotations, thus reflecting arousal.

In addition, it is interesting to mention that the principal boundaries of perversion moved towards the discourse level. In their interactions, participants obviously tried to determine acceptable perversion practices. There were those for whom sharing fantasies and role playing were acceptable perversions, and those whose expressions of fantasies were too serious and who wished to live out their sexual fantasies. In other words, in their interaction, the members and the administrator attempted to establish a typical and clear identity of a cannibal. This is a clear reflection of the deviant virtual community members' urge to push interaction towards the open awareness context, or in Glaser and Strauss' words “to know of the others' identities and their own identity in the eyes of others”.

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<sup>5</sup> This mainly refers to the attributes of a person's identity that can be controlled by will. These attributes include a discrediting characteristic, but they may be concealed so that the actor can avoid stigmatization. Otherwise, they are intentionally expressed (activated) so that the actor can assert his/her identity (Goffman *Interaction Ritual*).

(2) The following examples, unlike the previous ones, illustrate the suspicion context with the participants who maintained that the others were just pretending to be serious about their intentions, when in fact they only wanted to play roles and share fantasies.

In the first example, a participant who fantasized about being devoured claimed that nobody she communicated with was serious about realising her fantasy and that they were only into erotic role play. Once it was over, they would back out. She thereby expressed doubt over the identities of the participants who claimed to be serious about their cannibalistic intentions. Her post elicited two types of reactions. Some members replied in the role playing mode and tried to convince her they were serious. Two participants, however, wrote they doubted her intentions, referring to their previous communication with her. One of them had the impression that she was only interested in sharing fantasies and photos, whereas the other claimed that all her suggestions for real manifestations involved excessive legal risk, and that she was reluctant to accept any of his ideas.

The second example refers to a post written by a participant who also shared a fantasy of being devoured. A few participants replied, expressing interest in making her fantasy come true, but they complained the emails they had sent her could not get through. Another participant then expressed doubt in her identity, claiming she was not serious about her plans, that she only wanted to play with their fantasies and desires, that he had seen such things happen before in other forums, and that she had probably already deactivated her email address. She did not respond, and several more replies ensued before the correspondence under this thread died out.

(3) The third category includes the participants who expressed a general suspicion about other forum members. One participant, for instance, responded to a post by a member who had a fantasy of being eaten and claimed to be serious about it. He was one of the members who expressed interest in helping her play out her fantasy. They agreed to meet offline, but then he refused to go on making arrangements or to outline his plan for the realisation of the fantasy because it was too risky for him. This was an expression of his suspicion that some participants could use his posts against him. He insisted on arranging the offline meeting through private communication only. After that, he posted his email address and all further communication under the thread stopped.

*The Tactics of Awareness Context Management, and the Consequences and Transformations of the Initial Awareness Context*

The open awareness context produced an ambivalent situation: the participants' awareness of their freedom to create their virtual identities made some of them doubt these identities, which was further spurred on

by the forum's controversial subject. Whenever a participant expressed doubt, communication would either continue as before or come to an end. No special tactics of awareness context management have been identified in the cases in which the suspicion context emerged. The only reaction was registered in the first example, when the participant admitted that everything he posted was a fantasy and that he had not really hurt anyone.

In this case, the suspicion context in the CCF was based on awareness of the consequences of switching from the virtual to the offline world. Participants indulged in role play, leaving the legal sanctions against such practices in reality as an implicit interaction framework. CCF also appears as an appropriate (safe) space for playing cannibalistic games for another reason. Fantasizing about being devoured in the virtual space may be a source of constant (sexual) arousal, whereas in real life such a perversion may end fatally. This means that the barriers between the online and the offline worlds are not impassable, and that such interactions are essentially bound by the aspects of the offline reality.

### *CONCLUSION*

This research aimed to examine whether Glaser and Strauss's paradigm of awareness contexts as units of analysis is applicable to online communication. The use of the paradigm was also expected to help determine the dominant awareness context in the Cannibal Café Forum and whether the awareness contexts transformed one into another during the interaction.

The application of the Glaser-Strauss paradigm to the interaction in an online community of deviants was fraught with challenges as a consequence of online communication and the flexibility of virtual identities. Still, adherence to the procedural guidelines for the analysis of awareness contexts helped us get a clearer view of the openness in deviants' online interactions.

Our research has shown that the open awareness context was dominant in the CCF. However, although most of the interactions unfolded under this awareness context, it actually coexisted with the suspicion context. One context did not transform into another: they simply coexisted, but the open awareness context prevailed.

In this case, the influence of the context of digital communication and the specificity of the very platform for communication was also notable. CCF's concept and topics are controversial for the previously explained reasons. They produced an ambivalent situation in which communication revolved around sharing fantasies and role play on the one hand, and curiosity and the desire to live out those fantasies on the other hand. Forums with a similar purpose surely have members who wish to turn their fantasies into reality. In the case at hand, the problem is in the

nature of these fantasies: if realised, the participants would risk criminal charges. Such a complex situation gave rise to the emergence of the suspicion context, especially because some members fuelled it by insisting on the real manifestation of their fantasies.

With regard to the specific consequences of the interactions among the CCF members for the purpose of expressing deviant identities, we might say that CCF mostly helped the participants suspend the stigma of offline reality and freely indulge in sharing cannibalistic fantasies and role play. Their self in the CCF was not under threat of being discredited by non-deviants. It just opened new options to resume the interaction, which would be unimaginable in the offline reality. CCF, however, also harboured the tendency to codify and typify perversion practices. Participants in the discussions attempted to classify perversion practices through discourse, delineating strict boundaries between the acceptable and unacceptable perversions. Declaring oneself a cannibal was not enough. He or she had to exhibit acceptable attributes – to express himself/herself in a certain way and not to cross the line of fantasy. In broader terms, an assumption worth further examination is that in such virtual spaces the field of perversion is organized by defining clear, non-problematic, coherent identities of perverts. Virtual spaces would therefore turn into places where deviants could become normal, but where their identities would also be forced to conform to certain norms in order to make the interactions more predictable and the expectations of each role clearer. Additionally, virtual spaces turned into places where a new differentiation between the normal and the deviant took place.

Finally, the studies of cyber-deviance have some inherent limitations, and our paper is no exception. One of its limitations results from the nature of the communication in forums and on other digital platforms. Such communication is asynchronous, and independent from time and space, which makes tracking its course, and therefore identifying important transformations, quite challenging. The second limitation arises from the fact that this research involves the examination of secondary data, from forums or chat-room discussions. This data provides little insight into the specific motivations or intentions of the participants (Maratea and Kavanaugh). The third limitation is that CCF is no longer active, so we cannot observe or analyse interactions in real time. This would have allowed us to gain better insight into the course of interactions and the potential transformations of awareness contexts.

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## КОНТЕКСТИ СВЕСНОСТИ У ОНЛАЈН КОМУНИКАЦИЈИ НА КАНИБАЛ КАФЕ ФОРУМУ

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### Резиме

Виртуелни постори нуде јединствену могућност за проучавање интеракције у процесу њеног одвијања. Ово је посебно важно када говоримо о проучавању онлајн заједница девијаната у тренутку док преузимају улоге чланова ових заједница. Наиме, ови простори су заправо идеалан оквир за формирање Гофманових *back places* где појединци не морају да скривају своја стигматизујућа обележја, нити да се оптерећују око напете комуникације са другима као последица њихове стигме. Због тога су ова места посебно драгоцене за екстремне девијанте попут заједница љубитеља канибализма којима се у овом раду бавимо, јер је за њих практично немогуће, због друштвене стигматизације, стварање поткултуре у реалном простору. Њиховим посматрањем у процесу креирања онлине идентитета добијају се важни увиди о социјалној организацији девијантних онлине заједница и интеракцији у њима.

У складу са тим, у раду се бавимо испитивањем могућности за примену процедуралних правила која су осмислили Глејзер и Штраус, за разумевање контекста свесности. На основу емпиријског истраживања интеракције у шест болница, издвојена су четири типа контекста свесности који се могу применити и на друге структурне јединице: (1) Отворени контекст где је сваки учесник интеракције свестан идентитета других и свог идентитета у очима других; (2) Затворени контекст где један учесник није свестан идентитета других, нити свог идентитета у очима других; (3) Контекст сумње где један учесник сумња у идентитете других или у свој идентитет у очима других, или у оба; (4) Контекст претварања где су учесници свесни идентитета других, али се претварају да нису (Glaser & Strauss, “Awareness Contexts”). Колико је нама познато ово је прва примена парадигме контекста свесности за проучавање интеракције у оквиру девијантних заједница на интернету.

Истраживање је базирано на квалитативној анализи садржаја дискусија чланова форума Cannibal Cafe. Јединицу анализе представљају објаве/преписке корисника које су видљиве свим корисницима. Садржај са CCF (објаве/преписке) архивиран је у посебан документ због сигурности јер је увек могућ нестанак података са интернета.

Иако смо се током примене ове парадигме на интеракцију у онлине заједници девијаната сусрели са изазовима који су последица онлајн комуникације и флексибилности виртуелних идентитета, праћење процедуралних упустава за анализу

контекста свесности нам је помогло да стекнемо јаснију слику о отворености он-лине интеракције девијаната.

Успостављањем везе између њиховог идентитета, свесности и интеракције наше истраживање је показало да је отворени контекст свесности, који је један од четири основана контекста који су идентификовали Глејзер и Штраус, онај који доминира у овој заједници девијаната. Међутим иако доминантан, он није и једини који се овде може идентификовати будући да је и контекст сумње, иако у мањој мери, ипак јасно заступљен. Важно је додати и то да се ови контексти не преливају један у други већ једноставно коегзистирају, на крају, дозвољавајући неспутано испољавање девијантности љубитеља канибализма.



## REGIONAL DEVELOPMENT OF THE REPUBLIC OF SERBIA IN THE LIGHT OF KEY MESSAGES OF ENDOGENOUS THEORY OF GROWTH AND IMPERATIVES FOR IMPROVING COMPETITIVENESS

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### Abstract

At the end of the twentieth century, a qualitatively new concept of regional development policies appeared, and was affirmed, in many world economies. In short, at its center, there is the imperative to improve the region's competitiveness. The focus of new regional development policies is on initiatives that favor networking, the development of cooperative relationships, and the growth of confidence in regional economic actors. In these circumstances, people's readiness for new business ideas and organizational solutions have become far more important drivers of regional development than the number of businesses located in the region. The new concept of regional development policy is predominantly based on the postulates of endogenous growth theory. The imperative to improve the region's competitiveness is at its epicenter. Starting from such prominent theoretical explanations, our own composite index was constructed by analyzing the achieved level of development of individual regions of the Republic of Serbia in 2008 and 2018. The analysis showed that all regions in Serbia have development potentials, but that they manage to increase their level of development to a different extent, both in relation to the previous period and in relation to other regions in the country.

**Key words:** economic growth, regional development policy, endogenous development, regional competitiveness, the Republic of Serbia

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## РЕГИОНАЛНИ РАЗВОЈ РЕПУБЛИКЕ СРБИЈЕ У СВЕТЛУ ПОРУКА ЕНДОГЕНЕ ТЕОРИЈЕ РАСТА И ИМПЕРАТИВА УНАПРЕЂЕЊА КОНКУРЕНТНОСТИ

### Апстракт

У годинама с краја другог миленијума у многим светским економијама појавио се потпуно нови концепт политика регионалног развоја. Најкраће, у његовом центру налази се императив унапређења конкурентности региона. Тежиште нових политика регионалног развоја је на иницијативама које фаворизују мрежну повезаност, кооперативне односе, као и поверење регионалних економских актера. У таквим околностима, спремност људи за нове пословне идеје и организациона решења су неупоредиво важнији покретачи регионалног развоја у односу на број предузећа лоцираних на одређеном простору. Нови концепт политике регионалног развоја се доминантно темељи на постулатима теорије ендеогеног раста. У његовом епицентру се налази императив унапређења конкурентности региона. Полазећи од тако истакнутих теоријских експликација, конструисан је властити композитни индекс путем кога је анализиран достигнути ниво развијености појединих региона Републике Србије. Анализа је показала да сви региони у Србији располажу развојним потенцијалима, али да у различитој мери успевају да повећају свој ниво развоја, како у односу на претходни период, тако и у односу на друге регионе у земљи.

**Кључне речи:** економски раст, политика регионалног развоја, ендеогени развој, регионална конкурентност, Република Србија

### 1. INTRODUCTION

The economic development policies of countries and regions have always been predominantly based on the most important messages of current growth theories. However, despite the great challenges that the phenomena of economic growth and development impose with their actuality, it is evident that there is still no generally accepted theory of economic growth and development. The basic goals of economic growth and development are well known and relate to increasing the quantity and quality of production, and increasing the standard of living of the population, as well as reducing inequality in the distribution of value created over the long term. Some economies and regions are underdeveloped either because they lack economic growth factors or because they lack the knowledge and ability to use those factors effectively. Despite this fact, the explanations for the causes of economic underdevelopment in countries and regions, as well as the recommendations offered by economic researchers to overcome the underdevelopment situation, differ depending on the theoretical explanations for growth which they directly rely on (Dragutinović, Filipović, & Cvetanović, 2015). For example, a number of economists and policy makers emphasize the importance of investing in physical capital. Others point to the importance of human capital in accelerating the rate of economic growth. Also, they play a decisive role in

increasing the value of production at the national level concerning the knowledge of innovation (Cvetanović, & Mladenović, 2015; Dragutinović, et al., 2015).

Towards the end of the twentieth century, new explanations for the importance of key drivers of economic development began to emerge as a result of the impact of globalization on the dynamics of production and spatial systems and the growing use of information and communication technologies in the production process in almost all areas of social life. One of the manifestations of these transformations is certainly the emergence of new regional development policies, at the epicenter of which is an effort to improve its competitiveness as much as possible.

Having in mind the previously stated, the aims of the paper are: a) the explanation of the essence of the concept of modern regional development policy whose main goal is to improve competitiveness and b) the construction of our own composite index of individual region development in the Republic of Serbia that takes into account the messages of endogenous theory of growth.

The structure of the work, the four sections, relates to the defined goal of the research. After the introductory notes, the second section presents a review of significant theoretical explanations of the factors of economic growth of countries and development of the region, ranging from neoclassicists to a wide range of endogenous theories of growth. The third section discusses the essence, purpose, models, as well as the key drivers of improving the competitiveness of the region. Finally, in the fourth section, the analysis of the regional development of Serbia is presented based on the created composite index of regional development.

## *2. SIGNIFICANT THEORIES OF ECONOMIC GROWTH OF COUNTRIES AND REGIONS*

There is no consensus in the literature on the most significant theoretical explanations for the economic development of countries and their regions. This is, among other things, a result of the fact that the classification of certain studies into specific theories of economic development of countries and regions is to a considerable degree arbitrary and depends largely on the specific attitudes of researchers regarding the most important drivers of economic growth at a given time. Despite this, we believe that by elementary reproduction of significant growth theories, it can be observed that at times some economic growth analysts insist that only their approaches are relevant to the conception of appropriate policies, while other opinions regarding explanations of growth factors are generally incorrect. It should be noted that such claims are fundamentally wrong. Because, with a more careful and impartial analysis, it is possible to note in each of the theories some contribution to the study of the

complex problems of economic growth and development (Cvetanović, & Mladenović, 2015).

Throughout history, many theories of economic growth have evolved with the aim of exploring and defining the path of stable and long-term growth. Thus, for example, Mervar (1999; 2003) believes that historical retrospective theory of economic growth goes from classical growth theory, Schumpeter growth theory, Keynesian theory to neoclassical theory and endogenous explanations of key drivers of growth. Smith and Todaro (2015) divide all theories of economic development into two major groups: conventional (old) and endogenous (new). According to the opinion of these authors, there are four most important directions within the first group of theories: the theory of stages of economic growth, the theory of structural changes, theories of dependence, the theory of neoclassical counterrevolution (Smith, & Todaro, 2015).

A number of researchers are of the opinion that we should make difference between the neoclassical, one the one hand, and the so-called alternative explanations of economic growth, on the other, where the emergence of the latter marked a break with neoclassical orthodoxy (Schwartz, 2009). As two directions of alternative growth theories, endogenous and Schumpetrian explanations for the growth of countries and regions should be singled out (Schwartz, 2009). Both theories seek to overcome the simple approach of neoclassical economists who view technological change as a phenomenon that is independent of the nature of the economic and social environment in which it emerges and expands. The situation is identical when considering the theoretical explication of the essence and the most important factors of economic development, viewed exclusively at the regional level. In short, the opinions of relevant researchers are divided here as well. For example, Armstrong (2002) highlights seven regional growth theories that play an important role in shaping regional development policy: neoclassical economic growth theory, endogenous economic growth theory, post-Fordist and other radical regional development theories, social capital theories, new economic model geography, a model of evolutionary economic geography, a theory of innovative, or *self-learning* regions, and demand-driven models of export competition. Puljiz (2011) is of the opinion that the following theories of economic growth are the most important for regional development policy: classical economic growth theory, neoclassical economic growth theory, endogenous economic growth theory, access to new economic geography and spatial innovation systems approach.

Starting from the view that the key issue of regional development policy is the manifestation of large regional inequalities, Vuković (2013) distinguishes two different approaches to the problem of overcoming uneven regional development. The first approach is interventionist, while the starting point is the position on the primary role of the market and the

confidence in the forces of its laws in the economy. Both approaches share a common top-down approach and confidence in instruments and measures that can be applied uniquely and as a recipe to all regions, regardless of their specific characteristics and causes of uneven regional development (Amin, 1998, p. 365). The top-down approach starts from the hypothesis that economic success is based on a number of common factors, such as: rational individual, profit maximizing entrepreneur, firm as a basic economic unit, free market. However, analyzing the domains of both doctrines, Amin (1998, p. 366) concludes that they are modest in terms of stimulating sustainable improvement of the economic competitiveness of lagging regions. In addition to the top-down approach, various modalities of the opposite, that is, the bottom-up approach, have been considered in the economic literature, in which the centralist and decentralist models differ. Centralist means the intervention of regional authorities and redistributive measures at the local level, while decentralist is related to the affirmation of market laws at the local level (Shankar, & Shah, 2009, p. 10).

### *2.1. The Scope and Limitations of Neoclassical Growth Theory for Regional Development*

Neoclassical explanations of the physiology of economic growth in countries and regions emerged with the discovery of technological change as a key driver of economic growth by Robert Solow (1956). Solow found that other factors had a far greater impact on economic growth than standard productive factors (capital accumulation and increase in labor force), marking them as residual. In short, residual is a term for technological change, the content of which includes all growth factors except fixed assets and employment. Technological change has a stimulating effect on the growth of relative marginal productivity of capital on the basis of education and training of the workforce, the knowledge gained by investing in research and development, as well as other forms of investment in intangible capital. This is the fact that can be labeled as a radical theoretical novelty in economic science.

All of the above characteristics of the Solow model are essentially not debated from a theoretical point of view, but the main problem arises in the empirical confirmation of the whole theory. The basic question that arises is whether the model can account for the large differences in the development of countries in the world, as well as differences in growth rates. If we want to answer the question of why some countries have high growth rates, while others stagnate, the model could not provide satisfactory answers.

This limitation of the model is a direct consequence of declining returns on capital. Large differences in the technical equipment of labor (the ratio of physical capital to labor) lead to small differences in output per capita (due to the low rate of productivity elasticity in relation to the

coefficient of technical equipment of labor). Because of this fact, differences in the accumulation of physical capital cannot be the basis for explaining the large differences in per capita output between countries and the region (Lukas, 1988).

The neoclassical growth model focuses on the accumulation of physical and human capital, while economic growth is generated exogenously by a given rate of technological change. While such a model provides a good starting point for observing differences in production between countries that have access to the same technology, it does not explain how to generate sustainable long-term growth. Also, the neoclassical model says very little about the sources of technological differences between countries (Acemoglu, 2009).

The neoclassical literature binds the process of economic growth to an adequate coefficient of technical equipment of work and the process of establishing long-term equilibrium. In the absence of radical technological change, all economies will strive for zero growth. Therefore, an increase in GDP per capita is considered to be a temporary phenomenon resulting from changes in technology or a short-term balanced process in which the economy approaches its long-run equilibrium.

Neoclassical theory has failed to provide a satisfactory explanation for the incredibly consistent pace of economic growth in most economically advanced countries today. Any increase in gross domestic product that cannot be attributed to short-term adjustments in labor or equity funds is attributed to a third category, most commonly called the Solou residual. This residual is, despite its name, responsible for, roughly speaking, 50% of the historical growth in industrialized nations. In an ad-hoc way, neoclassical theory attributes much of economic growth to an exogenous or completely independent complex of technological change. Although logically possible, this approach has at least two insurmountable disadvantages. By using the neoclassical framework, the first disadvantage makes it impossible to analyze the determinants of technological change, because it is completely independent of the decisions of economic actors. The second disadvantage relates to the fact that the theory fails to account for the large differences in the residuals of many countries with similar technologies (Sredojević, Cvetanović, & Bošković, 2016).

## *2.2. Endogenous Explanations for the Economic Growth of Countries and Regions*

The modest capabilities of neoclassical theory in discovering the sources of long-term economic growth led to the emergence of endogenous growth theories in the years of the last decade of the twentieth century. Depending on the underlying assumptions that seek to eliminate the limitations of neoclassical access, endogenous growth theories can be roughly divided into three categories.

The first group presents models whose primary objective is to eliminate the assumption of declining returns on capital. A number of models in this group take the broader concept of capital, which includes other forms of capital in addition to physical capital. Among the most well-known approaches in this group of models is the Rebelo model (1991), which treats capital in addition to physical and human capital. In other models of this category, declining returns are eliminated through physical capital itself (Jones, & Manuelli, 1990).

The second group presents models that take, as their starting point, the accumulation of human capital as the main driver of economic growth in the long run. Here, Lucas (1988) is the most significant.

The third group are the endogenous growth models which are based on ideas, i.e. on research and development (such as the Romer model (1990; 1986); Grossman, & Helpman model (1991) and the Aghion & Howitt model (1992)). In these models, human capital is essential. The category of technological change is the key driver of economic growth, and it is endogenous as the result of the activities of companies and individuals, or inventions that lead to technological improvements. The level of the technological advancement can be influenced by investing in education to improve the quality of growth. Education can intensify growth by improving the quality of work and the quality of physical capital through the use of knowledge, as well as acting on the spillover effect of knowledge and technology on other parts of society that offset declining returns on capital. The endogenous theory is also criticized for having paid great attention to the determinants of long-term growth, while the short- and medium-term aspects have not been considered. Finally, in some opinions, empirical studies of endogenous growth theories today have limited support. However, it is an indisputable fact that endogenous growth theory contributes to a better theoretical understanding of the different experiences of long-term growth in developed and developing countries, so its messages are crucial for determining regional development policy (Cvetanović et al., 2015).

Models of endogenous growth have some structural similarities with the neoclassical equivalent, but differ substantially in their important assumptions and conclusions. First, endogenous growth models reject the neoclassical assumption that marginal returns on capital are reduced, assuming that a situation of declining returns is possible. Second, they also emphasize the role of externalities in determining the rate of return on new capital investments. Assuming that public and private investment in human capital generates externalities and productivity gains that offset the declining trend of factor returns, endogenous growth theory looks for a way to explain the existence of yield growth and divergent models of long-term growth across countries. Third, in most endogenous theories,

the category of technological change plays an important role in explaining long-term economic growth.

An important conclusion of the new growth theory is that it remains dependent on a number of traditional neoclassical assumptions, which are often inappropriate for developing countries. Economic growth in countries and regions is often hampered by the underdevelopment of infrastructure, the inadequacy of institutional arrangements, and the imperfection of the capital and commodities, and service markets. Because endogenous growth theory does not take these highly influential factors into account, its applicability to economic development theory is, however, limited, especially when comparing the two countries. For example, the current theory fails to explain the low rates of utilization of production capacity in countries with low gross domestic product per capita, where capital is an insufficient factor of production. In fact, non-incentive structures can be responsible for slow economic growth, as well as low savings rates and inadequate human capital ratios. This theory is not supported because it has paid great attention to the determinants of long-term growth, while the short- and medium-term aspects have not been considered. Finally, according to some opinions, empirical studies of endogenous growth theories have limited support today. However, endogenous growth theory contributes to a better theoretical understanding of the different long-term growth experiences of developed and developing countries. Although endogenous growth models come from neoclassical theoretical postulates, they modify the broader assumptions of traditional growth theory and function as a deeper explanation of key growth patterns of individual countries.

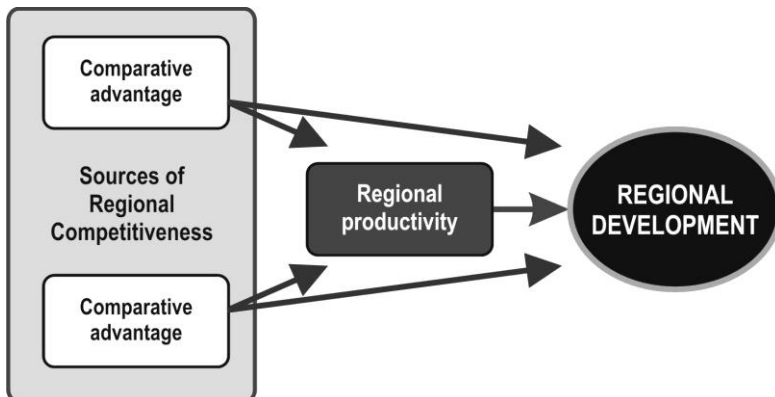
### *3. IMPROVING COMPETITIVENESS AS A KEY OBJECTIVE OF NEW REGIONAL DEVELOPMENT POLICIES*

At the end of the twentieth century, a new concept of regional development policies began to emerge, both in developed and developing countries. Vazquez-Barquero (2002) refers to this concept as the third generation of regional development policies. In doing so, the author, as the primary goal of the first generation of the development policies of the region, created in the 1950s, signifies the construction of infrastructure and the attraction of huge investments through a number of economic and non-economic instruments. The second generation of regional policies has emphasized the importance of initiatives to improve the intangible resources of development by building business incubators, innovation centers, training centers and the like. This generation of regional policies is tied to the 1980s.

Finally, since the late twentieth and early twenty-first century, the third generation development policies of the region have dominated. In



short, the primary goal of a new generation of regional development policies is to improve the competitiveness of the region (Fig. 1) (Vazquez-Barquero, 2002). There is agreement that the endogenous development approach is the theoretical basis of a new generation of regional development policy, conceptually and functionally (Capello, & Nijkamp, 2009).



*Figure 1. Regional development through competitiveness*

*Source: Author, according to the Santoso, et al., 2013.*

There are two basic trends that have decisively influenced the design of regional development policy in this period: the need for more realism and the need for a dynamic instead of a statistical approach.

The need for more realism involves:

- appreciation of the drivers of endogenous growth,
- appreciation of the importance that interactive behaviors have in growth models, as well as processes that take place in space: both have, as an effect, increasing returns to scale,
- determinants of success for small, medium-sized enterprise clusters, local agglomerations,
- respect for imperfect competition in growth models,
- the active role of the region in the process of knowledge creation,
- growth as a long-term competitiveness-based process,
- the endogenous nature of technological change as a growth factor (Capello, & Nijkamp, 2011, 306).

The new regional development policy emphasizes the importance of local actors in creating the potential to stimulate productive restructuring, increase employment and provide social assistance at the regional level. By taking the initiative to drive structural change, regional authorities are involved in finding solutions to problems caused by the restructuring of the international production system in the economies of local areas and territories (Vazquez-Barquero, 2002).

Current regional economic development strategies highlight the role of local initiatives in development processes. However, they also underscore the importance of unifying the strengths of local initiatives of each region and those of other administrations and organizations that promote structural change. However, it is only possible to coordinate local initiatives with the sectoral and regional policies of other administrations and organizations in places where there are joint projects supported by civil society and social and political actors.

Globalization has created a new scenario for regions that compete directly with one another to attract investment. In this context, regions that seek to increase the standard of living of their residents and improve their position in relation to competitors must find an effective way of attracting foreign direct investment. If they fail to do so, the competitive position of the observed regions will deteriorate in the long run, which will certainly affect the reduction of well-being.

New approaches to regional development are encouraging the formation of networks. Globalization has also stimulated new aspects of the organization of production activities and new entrepreneurial strategies. Informal relationships between companies are increasing, as are direct contacts between companies and company executives, the number of cooperation agreements and strategic alliances of companies is increasing. Globalization has stimulated the creation of numerous links between companies and participants in different environments, linking market success to the efficiency of production and institutional networks. This implies fundamental changes in the development strategy.

Improving competitiveness is undoubtedly one of the primary objectives of new regional development policies. The competitiveness of the region speaks of the ability of the region's economy to optimize the resources available, in order to better adapt to the opportunities that prevail in national and global markets (Skokan & Rumpel, 2007). More specifically, it speaks of a region's ability to accelerate the economic activity of business entities in a particular location so that its residents have a high level of economic well-being (Alanen, Huovari & Kangasharju, 2001). In other words, it is about the ability of the region to "produce while simultaneously being exposed to external competition, with relatively high levels of income and employment" (Vuković, 2013).

There is an opinion in the literature that a distinction needs to be made between three basic concepts of regional competitiveness: regions as places of export specialization, regions as sources of income increase, and regions as a core of knowledge (Andersson & Karlsson, 2006; Martin & Simmie, 2008).

There are a number of factors for improving the competitiveness of the region, among which are:

- the possibility of structural transformation of the economy, in particular by increasing the share of industries that have high added value with a multiplier effect on other economic sectors,
- high share of the service sector contributing to the creation of added value (research and development, higher education, culture and business services),
- production based on knowledge,
- decentralization of the decision-making system,
- numerous and successful middle class,
- urban policy of high standards, availability of quality public utilities, quality regional government and environmental protection,
- the achieved level of business networking of economic factors of the observed sector.

In the view of many theorists, the dominance in the creation and application of product, service and process innovations has enabled individual regions to become a symbol of economic power worldwide. In the strategy of enhancing the competitive advantage of the region, spatial innovation systems have a threefold role:

- to increase productivity, since specialization in a particular industry allows productivity to grow,
- to specify long-term directions of development, thereby directing investments and innovation activities,
- to stimulate the development of new business forms and act on the expansion of the existing economic structure.

The two best known models of improving regional competitiveness are the so-called cylinder model and competitive tree model.

The cylindrical model of regional competitiveness was promoted by the European Commission in 2004. The determinants of regional competitiveness can be found at the bottom of the cylinder, and in various rings around the productive cylinder. These guidelines are either on national, regional level or local level, depending on their characteristics. Production factors (labor, capital and land) are in the base ring. Labor and land are less mobile than other factors of production and are therefore more determined by regional factors. These determinants are related to the basic conception of regional competitiveness as a place of production. These are determinants of competitiveness, such as institutions, technology, innovation, entrepreneurship, internationalization, social capital, knowledge infrastructure, culture, demographics and migration, as well as the quality of geographical location. It is necessary that all drivers of economic growth be placed in the function of increasing regional productivity for a given region to be able to grow and develop in a contemporary context, or to improve its own competitiveness.

The competitiveness tree model illustrates the complex factors that affect competitiveness in collaboration with positive outcomes, such as

social inclusion, social protection and sustainability. The organic nature of wood emphasizes the cyclical character of the concept of competitiveness. The quality of the soil and the effective functioning of the root system, tree and branches determine the strength of the tree and the ability to give birth. Tree root is made up of human resources, innovation, connectivity and industrial structure, while tree stands for productivity. The tree expands into branches that work to shape competitiveness: employment and income, profits and investments, taxes and contributions. Taxes yield the fruits of the tree canopy, and the fruits of the tree are prosperity, sustainability and social inclusion, consumables, housing, health, culture, mobility. The synergy of these components forms the concept of competitiveness.

The contemporary regional development policy marks a shift in the treatment of drivers of economic growth from functional to cognitive. The cognitive approach involves a fundamental change in the importance of certain factors for improving the competitiveness of a region: a) from developmental to innovative factors, and b) from "hard", i.e. tangible to "soft", i.e. intangible competitiveness factors (Stimson, Stough & Nijkamp, 2011, 125).

The cognitive approach to enhancing regional competitiveness emphasizes the importance of region-specific factors. These factors enable regions to attract private and public investors through various incentives, which enhance their competitiveness. Regional competitiveness, in modern economic conditions, is based on the cooperation, trust and connection to the relevant actors. It is based more on creativity than on the availability of manpower and the abundance of natural resources. In these circumstances, people's readiness for new business ideas and organizational solutions is far more important than the presence of a number of small and medium-sized enterprises. Also, the improvement of regional competitiveness is related to factors related to networking, cooperation, regional identity, quality of life.

#### *4. ANALYSIS OF REGIONAL DEVELOPMENT OF THE REPUBLIC OF SERBIA BASED ON THE COMPOSITE INDEX OF REGIONAL DEVELOPMENT*

The following two hypotheses were set in the research:

X1: Regional development in the Republic of Serbia in the period 2008-2018 did not follow the messages of endogenous growth theory and the imperative of improving competitiveness.

H2: Regions in the Republic of Serbia in the period 2008-2018 did not reduce the lag behind the most competitive region.

Hypotheses will be tested by constructing a composite index by which the achieved level of development of individual regions will be quantified, on the basis of which the development lag of individual regions of the Republic

of Serbia in the appropriate years will be established behind the most developed and most competitive region in the country.

Starting from the previously stated theoretical reflections, the subject of research in this paper is the analysis of the development lag of individual regions in the Republic of Serbia behind the best region in the period 2008-2018. For this purpose, we constructed our own composite index of regional development, the value of which also speaks of regional competitiveness.

Dynamic, sustainable and balanced regional development is an imperative of any development policy. Measuring the development of individual regions or areas requires the construction of complex, composite indicators consisting of several individual derived development indicators that measure different aspects of the achieved level of development of a particular territorial unit (region or area).

Derived indicators were used to build a composite indicator of regional development: GVA per capita (one thousand RSD), number of employees per 1,000 inhabitants, average salary per employee and new investments per capita. Based on the standardization of the values of these individual development indicators (using the MIN / MAX method to reduce heterogeneous data to the same unit of measure on a scale from 0 to 1) a unique, composite indicator was defined, on the basis of which an overview of the situation and the relative level of development of individual areas in the Republic of Serbia was obtained. Regional ranking and grouping of areas in Serbia according to the level of development (I - relatively most developed area; V - relatively least developed area) enables the perception of differences between developed areas, available development opportunities and their utilization (Table 1).

The analysis of the regional development of the Republic of Serbia based on the regional development index, indicates large differences in the level of development between the areas of the Republic of Serbia. According to the data from the Table 2, in 2018, the most developed area in Serbia is the City of Belgrade (Belgrade area), followed by South Bačka, South Banat, Bor and Braničevo areas, which form a group of the most developed areas in the Republic of Serbia according to the values of the Regional Development Index. In the second group of development are: Srem, North Bačka, Central Banat, Moravica and North Banat area, and in the third group of development are: Šumadija, Pirot, Colubara, Nišava and the Zlatibor area. Areas which belong to the fourth group of development are: West Bačka, the Danube region, Mačva, Rasina and the Toplica area, and in the fifth, least developed group are: Pomoravlje, Zaječar, Jablanica, Raška and the Pčinja area.

Compared to 2008, the rank of development in four areas remained unchanged (Belgrade, South Bačka, North Banat and Zlatibor areas), in 9 areas it was reduced, and in 12 areas they improved their development position (Table 3).

Table 1. Indicator of the level of regional development of Serbia

Area	Regional development index*		Area ranking**			Level of development***		
	2008	2018	2008	2018	Rank change	2008	2018	Level change
Belgrade	1.0	1.0	1	1	0	I	I	0
West Bačka	0.3	0.2	6	16	-10	II	IV	-2
South Banat	0.4	0.5	4	3	1	I	I	0
South Bačka	0.6	0.6	2	2	0	I	I	0
North Banat	0.3	0.3	10	10	0	II	II	-1
North Bačka	0.4	0.4	3	7	-4	I	II	0
Central Banat	0.3	0.3	11	8	3	III	II	0
Srem	0.2	0.4	14	6	8	III	II	2
Zlatibor	0.2	0.2	15	15	0	III	III	0
Kolubara	0.2	0.3	18	13	5	IV	III	1
Mačva	0.2	0.2	20	18	2	IV	IV	1
Moravica	0.3	0.3	7	9	-2	II	II	0
Pomoravlje	0.2	0.1	16	21	-5	IV	V	-1
Rasina	0.2	0.1	21	19	2	V	IV	0
Raška	0.2	0.1	19	24	-5	IV	V	-1
Šumadija	0.3	0.3	8	11	-3	II	III	0
Bor	0.2	0.4	12	4	8	III	I	1
Brančevo	0.3	0.4	9	5	4	II	I	0
Zaječar	0.1	0.1	23	22	1	V	V	0
Jablanica	0.0	0.1	24	23	1	V	V	0
Nišava	0.2	0.3	13	14	-1	III	III	0
Pirot	0.2	0.3	17	12	5	IV	III	2
Podunavlje	0.3	0.2	5	17	-12	I	IV	-3
Pčinja	0.1	0.0	22	25	-3	V	V	0
Toplica	0.0	0.1	25	20	5	V	IV	1

\*Normalized value in the range from 0 to 1

\*\*The ranking of development is done by sorting the districts according to the value of the regional development index (1 to 25)

\*\*\*The level of development is determined by grouping the normalized values of the index of regional development, so that each area is classified into one of five groups of regional development

Source: Calculation of the author, according to the data from Statistical Office of the Republic of Serbia

*Table 2. Regional development index in 2018*

Area	GVA per capita	Number of employees per thousand inhabitants	Average salary per employee	New investment per capita	Value of the Regional Development Index*
Belgrade	1.0	1.0	1.0	0.8	1.0
West Bačka	0.2	0.3	0.2	0.1	0.2
South Banat	0.4	0.4	0.4	1.0	0.5
South Bačka	0.6	0.8	0.5	0.5	0.6
North Banat	0.3	0.4	0.3	0.4	0.3
North Bačka	0.3	0.6	0.3	0.3	0.4
Central Banat	0.3	0.5	0.4	0.2	0.3
Srem	0.4	0.6	0.2	0.4	0.4
Zlatibor	0.2	0.4	0.2	0.1	0.2
Kolubara	0.2	0.6	0.3	0.1	0.3
Mačva	0.1	0.3	0.1	0.2	0.2
Moravica	0.3	0.6	0.2	0.2	0.3
Pomoravlje	0.1	0.1	0.1	0.1	0.1
Rasina	0.1	0.3	0.1	0.1	0.1
Raška	0.0	0.0	0.1	0.1	0.1
Šumadija	0.2	0.5	0.3	0.2	0.3
Bor	0.4	0.3	0.4	0.7	0.4
Braničevo	0.3	0.2	0.4	0.9	0.4
Zaječar	0.1	0.1	0.1	0.0	0.1
Jablanica	0.0	0.1	0.0	0.2	0.1
Nišava	0.2	0.5	0.3	0.1	0.3
Pirot	0.3	0.4	0.4	0.0	0.3
Podunavlje	0.1	0.3	0.3	0.2	0.2
Pčinja	0.0	0.0	0.1	0.0	0.0
Toplica	0.1	0.2	0.1	0.1	0.1

\* Normalized value in the range from 0 to 1

Source: Calculation of the author, according to the data from Statistical Office of the Republic of Serbia

Table 3. Regional development index in 2008

Area	GVA per capita	Number of employees per thousand inhabitants	Average salary per employee	New investments per capita	Value of the Regional Development Index*
Belgrade	1.0	1.0	1.0	1.0	1.0
West Bačka	0.2	0.3	0.5	0.3	0.3
South Banat	0.2	0.3	0.8	0.3	0.4
South Bačka	0.6	0.7	0.7	0.6	0.6
North Banat	0.2	0.3	0.4	0.2	0.3
North Bačka	0.3	0.5	0.3	0.3	0.4
Central Banat	0.2	0.3	0.4	0.2	0.3
Srem	0.2	0.2	0.3	0.2	0.2
Zlatibor	0.2	0.3	0.3	0.1	0.2
Kolubara	0.1	0.2	0.3	0.3	0.2
Mačva	0.1	0.2	0.3	0.2	0.2
Moravica	0.3	0.5	0.3	0.2	0.3
Pomoravlje	0.2	0.3	0.3	0.2	0.2
Rasina	0.1	0.3	0.2	0.1	0.2
Raška	0.1	0.2	0.3	0.1	0.2
Šumadija	0.2	0.4	0.4	0.3	0.3
Bor	0.2	0.3	0.5	0.1	0.2
Braničevo	0.2	0.2	0.5	0.4	0.3
Zaječar	0.0	0.2	0.1	0.1	0.1
Jablanica	0.0	0.1	0.0	0.0	0.0
Nišava	0.2	0.3	0.3	0.2	0.2
Pirot	0.1	0.3	0.3	0.2	0.2
Podunavlje	0.2	0.3	0.7	0.2	0.3
Pčinja	0.0	0.1	0.2	0.0	0.1
Toplica	0.0	0.0	0.0	0.0	0.0

\*Normalized value in the range from 0 to 1

Source: Calculation of the author, according to the data from Statistical Office of the Republic of Serbia

The largest improvement in the level of development was recorded in the region of Bor and Srem (compared to 2008, it was improved by 8 positions) and the Colubara, Pirot and Toplica regions (by 5 positions), and the largest deterioration in the level of development compared to other areas in Serbia was recorded in the Danube region and West Bačka (compared to 2008, there was a decrease of 12 and 10 positions, respectively), as well as Pomoravlje and Raška, which worsened their ranking compared to 2008 by 5 positions.

In the observed period, 11 areas changed the development group and 6 areas moved to a higher development group (Srem and Pirot areas for two development groups, and Colubara, Mačva, Bor and Toplica areas



for one development group), while 5 areas moved to the lower development group (the Danube region for three development groups, West Bačka region for two development groups and North Banat, Pomoravlje and the Raška region for one development group).

The previous analysis shows that all regions in Serbia have development potentials, but that the regions manage to use their development potentials and increase their level of development differently, both in relation to the previous period and in relation to other areas in Serbia (Fig. 2).

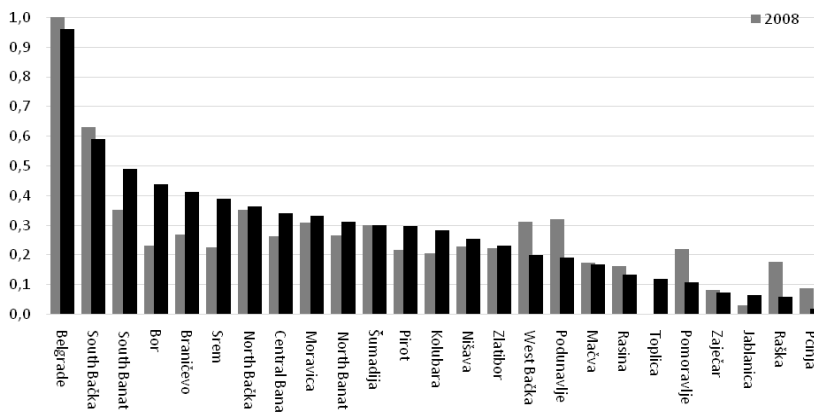


Figure 2. Values of the Regional Development Index in 2008 and 2018

Source: Calculation of the author, according to the data from Statistical Office of the Republic of Serbia

## CONCLUSION

The theoretical concepts of regional development policy have always largely reflected the essence of dominant directions in economic growth theory. In the last decade of the previous century, a new generation of regional development policies emerged. In formal terms, it is based on the rejection of the key premise of neoclassical orthodoxy, which refers to the view of the existence of perfect competition and the manifestation of declining factor returns. The introduction of the assumption of declining yields and monopolistic competition is theoretically related to the emergence of endogenous growth theory and the so-called new economic geographies.

Roughly speaking, the key objective of regional development policy, in line with the tradition of the new growth theory, is to improve the competitiveness of the region. At the same time, the competitiveness of the region implies that in the competitive environment, the products of enterprises from the area of the observed region place products and ser-

vices on the market, with relatively high levels of per capita income and high labor force employment.

The modern policy of improving the competitiveness of the region entails a fundamental change in the importance of certain factors of improving the competitiveness of the region. It is largely based on the cooperation, trust and connection of the relevant regional actors. Its effectiveness is predominantly determined by factors related to networking, cooperation, regional identity and quality of life.

The following indicators were used for its construction: gross value added (GVA) per capita in thousands of RSD, number of employees per 1,000 inhabitants, average salary per employee and new investments per capita. Based on the standardization of the values of these individual development indicators, a unique, composite indicator, the Regional Development Index, was defined, on the basis of which an overview of the situation and the relative level of development of individual areas in the Republic of Serbia was obtained.

The results of the research confirmed hypothesis H1 according to which regional development in the Republic of Serbia in the period 2008-2018 did not proceed in accordance with the messages of endogenous growth theory and respect for the imperative of improving competitiveness. Also, the results of the analysis of the regional development in the Republic of Serbia in this period confirmed the validity of hypothesis H2 that there was no reduction in the lag of certain regions in the country behind the region of Belgrade, as the most developed and most competitive region.

Compared to 2008, the rank of development in 2018 in four areas remained unchanged (Belgrade, South Bačka, North Banat and Zlatibor area), in 9 areas it was reduced, and 12 areas improved their development position. The largest improvement in the level of development was recorded in the regions of Bor and Srem (compared to 2008 by 8 positions) and the regions of Colubara, Pirot and Toplica (by 5 positions), and the largest deterioration in the level of development compared to other areas in Serbia was recorded in the Danube and West Bačka region (compared to 2008, a decrease of 12 and 10 positions, respectively), as well as the Pomoravlje and Raška areas, which worsened their rank compared to 2008 by 5 positions.

Improving the competitive position of individual regions in the future should be based on factors of economic development of endogenous nature. In other words, the growth of the region's competitiveness must be based, to a far greater extent, on initiatives that favor network connectivity, cooperative relations, as well as the trust of regional economic actors, than it has been the case so far. In such circumstances, people's readiness for new business ideas and organizational solutions are incomparably more important drivers of regional development compared to the number of companies located in a given area.

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## РЕГИОНАЛНИ РАЗВОЈ РЕПУБЛИКЕ СРБИЈЕ У СВЕТЛУ ПОРУКА ЕНДОГЕНЕ ТЕОРИЈЕ РАСТА И ИМПЕРАТИВА УНАПРЕЂЕЊА КОНКУРЕНТНОСТИ

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### Резиме

Концепти политика регионалног развоја су се временом мењали верно одражавајући кључне ставове доминантних теорија економског раста земаља и региона. Крајем двадесетог века почеле су да се појављују политике регионалног развоја чију теоријску основу концептуално и функционално чине поруке ендогене

теорије раста. У епицентру ових политика регионалног развоја налази се императив унапређења конкурентности.

Регионална конкурентност, у савременим условима привређивања, заснива се на кооперацији, поверењу и повезаности релевантних актера, она се наслања више на креативност становништва, него на расположивости радне снаге и богатству природним ресурсима. У таквим околностима, спремност људи за нове пословне идеје и организациона решења је неупоредиво важнија у односу на присутност одређеног броја предузећа на територији конкретног региона.

Унапређење регионалне конкурентности је повезано са факторима који се одnose на умрежавање, кооперацију, регионални идентитет, квалитет живота. Региони који настоје да повећају животни стандард својих становника и побољшају властиту позицију у односу на конкуренте морају такође наћи ефикасан начин привлачења страних директних инвестиција. Уколико то не учине, конкурентски положај посматраних региона ће се дугорочно гледајући погоршавати, што ће свакако деловати на погоршање животног стандарда.

Бројни су фактори унапређења конкурентности региона. Својим значајем се истичу: могућност структурних трансформација привреде, посебно повећањем удела индустрија које остварују високе нивое додате вредности са мултипликативним ефектом на остале привредне секторе, високи удео услужног сектора који доприноси стварању додате вредности (истраживање и развој, високо образовање, култура и пословни сервиси), производња утемељена на знању, децентрализација система одлучивања, бројна и успешна средња класа, урбана политика високих стандарда, доступност квалитетне комуналне службе, квалитетна регионална власт и очување животне средине, достигнути ниво пословне умрежености економских актера посматраног сектора.

Полазећи од претходно експлицираних констатација, у раду је презентована анализа регионалног развоја Републике Србије на основу креираног композитног индекса регионалног развоја, чија вредност у овом раду истовремено говори и о конкурентности појединих региона. За његово конструисање коришћени су изведени индикатори: бруто додата вредност (БДВ) по становнику у хиљадама РСД, број запослених на 1.000 становника, просечна зарада по запосленом и нове инвестиције по становнику. На основу стандардизације вредности ових појединачних развојних индикатора дефинисан је јединствени, композитни индикатор Индекс регионалног развоја, на основу којег је добијен преглед стања и релативни ниво развијености појединачних области у Републици Србији. Регионално рангирање и груписање области у Србији према нивоу развијености (I – релативно најразвијенија област; V – релативно најмање развијена област) омогућава сагледавање разлика између развијености области, расположивих развојних могућности и њихове искоришћености. Анализа путем овог композитног индекса је потврдила постојање великих разлика у нивоу развијености између региона у Србији у 2018. години. У односу на 2008. годину, ранг развијености код четири области остао је непромењен (Београдска, Јужнобачка, Севернобанатска и Златиборска област), код 9 области је смањен, док су 12 области су побољшале свој развојни и самим тим конкурентски положај.



## THE CHALLENGES OF UNIVERSAL POSTAL SERVICE COST MANAGEMENT

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### Abstract

The provision of information with an accurate and timely description of all business processes holds a prominent position among various activities for enhancing the operations of network industries. Since price pressure is the primary consequence of competition in network industries, it is necessary to perform a cost analysis of the business processes of the industry's monopolists. The realisation of all business activities that make up a production chain at as low a cost as possible, without affecting the quality of products and services, is the main issue of concern to network industry management. A key problem of cost management in network industries is their specific structure characterised, *inter alia*, by high participation, rapid growth and diversification of overhead costs.

The research subject of this paper is the theoretical identification and understanding of the basis of a potential Universal Postal Service (UPS) cost accounting model of the Public Postal Operator (PPO) in Serbia. EU Directive 97/67 represents the starting point for providing the guidelines for the development of this model, such as separate internal accounting for several PPO service segments. The existing legislative framework which defines the relations on the national postal service market pays special attention to the cost of UPS, which provides the basis for service pricing. The relevant result of this research, which has a significant practical application, is the basis of the model for calculating the cost of universal postal service, designed to provide informational support to management in the process of service pricing.

**Key words:** Public postal operator, universal postal service, cost accounting, ABC approach, overhead costs

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## ИЗАЗОВИ УПРАВЉАЊА ТРОШКОВИМА УНИВЕРЗАЛНЕ ПОШТАНСКЕ УСЛУГЕ

### Апстракт

Међу бројним активностима за унапређење пословања мрежних индустрија, посебно место заузима обезбеђивање информација са тачним и правовременим описом свих њихових пословних процеса. С обзиром на то да се примарна последица конкуренције у мрежним индустријама манифестује у форми ценовног притиска, неопходна је анализа трошкова пословних процеса доскорашњих монополиста. Питање реализације свих пословних активности које чине производни ланац уз што ниже трошкове, а да се при томе не угрози квалитет производа и услуга, у фокусу је посматрања менаџмента мрежних индустрија. Основни проблем управљања трошковима мрежних индустрија представља њихова специфична структура коју карактерише, између осталог, високо учешће, убрзан раст и диверсификовање општих трошкова. Предмет овог истраживања је теоријско идентификовање и разумевање основе могућег модела обрачуна трошкова универзалне поштанске услуге (УПУ) јавног поштанског оператора (ЈПО) у Србији. Полазну основу чини Директива ЕУ 97/67 у којој су дате основне смернице развоја овог модела, као што је вођење одвојеног интерног рачуноводства за неколико сегмената услуге ЈПО. Актуелни законодавни оквир којим се уређују односи на националном тржишту поштанских услуга посебну пажњу посвећује питању трошкова УПУ, који представљају основу за формирање цена овог сервиса. Релевантан резултат истраживања, који има значајну практичну примену, је основа модела обрачуна трошкова универзалне поштанске услуге, осмишљен као информациона подршка менаџменту у одлучивању о ценама.

**Кључне речи:** Јавни поштански оператор, универзална поштанска услуга, обрачун трошкова, АБЦ приступ, општи трошкови

### INTRODUCTION

Network industries comprise economic activities in which people, products and information are transported from one place to another via a certain physical network. As such, network industries are of particular economic and social importance, which reinforces the long-established opinion about the need for maintaining one's monopoly status on the market. However, at the beginning of the 1990s, the EU initiated network industry reforms since the negative consequences of the dominant market position became too great an obstacle to faster economic development. The main objective of these reforms was to create conditions to set up new companies in the competitive segments of the network industry, while the non-competitive segments were allowed to continue functioning as they had been before the reforms.

Postal services, from the aspect of the existence of competition, consist of two parts: universal and commercial services. The Universal Postal Service (UPS) segment is further divided into two subgroups: reserved services (RS monopoly – reserved for public postal operator) and part of non-reserved services (PPO enjoys a de facto monopoly). Com-



mercial services are fully open to competition. In Serbia, UPS includes posting letter-post items weighing up to 2 kg and packages weighing up to 10 kg, which is almost identical to the solutions applied in the national legislation of EU countries. The UPS is one of the basic achievements of civilization, which is why the state is ready to take the appropriate steps to ensure its general availability. The first step involves the appointment of a UPS provider, and the second step is the creation of an environment in which the UPS provider, as well as all other postal service providers, enjoy conditions that guarantee unhindered market competition with benefits for users.

The independent regulatory body has the obligation to establish a control system which will prevent the abuse of the position of the PPO. It is allowed, with the income generated in the monopoly segment, to cover only the costs of UPU and nothing else. The regulator must have accurate, realistic, transparent, an objectively presented UPS costs in order to create an adequate pricing policy (Official Journal L 125, 2001, *Deutsche Post AG*).

Cost accounting and cost management of postal services have become topics of interest to public postal operators (henceforth PPO) in the European Union only in the last decade. Unfortunately, owing to the relatively protected market position, the importance of comprehensive cost accounting has been greatly overlooked. Only external pressure, exerted by the regulatory body in charge of, among other things, promoting fair market competition rules, has forced PPO to further improve the traditional approach to costs by focusing on issues such as the costs of a particular stage of the provision of services, or group of services a group of services. The PPO in Serbia faces the very same task. The successful completion of this task will be a response to the demands of the regulatory body on the one hand, and it will contribute to the qualitative and quantitative improvement of the decision-making system on the other. Given the tendencies on the national postal service market, the effects of the application of cost accounting and management may go beyond merely satisfying the requirements of the regulatory body. Having in mind the legal and other requirements of the regulatory body, the aim of this research is to trace the basis of the model of monitoring and managing the costs of the Serbian PPO's universal postal service. The goal is to consult the theoretical and practical achievements in the field of cost management and to initiate the continuous improvement of the methodology of cost calculation in order to provide informational support to management.

The difficulty in calculating the costs of the national PPO, the Post of Serbia, is a result of the fact that, in addition to the market of postal services, this company also operates within the markets of telecommunications, printing services, maintenance of facilities, equipment and vehicles, and the like. Postal services are not homogeneous either, and many of them share the same production resources, which makes it difficult to

determine the cost of each individual service. Most of the costs of PPO, including the Post of Serbia, can be marked as indirect or common.

The research process began with observing the existing organization of PPO in Serbia, and analysing the process of providing postal and other services. The second stage of the research process consisted of comparing the manner of providing services and monitoring the costs of the PPO in Serbia with PPOs in EU countries. The results of research in cost management literature, legal requirements, and the practices of PPO indicate that the integrated application of the ABC approach and elements of the current practice of cost tracking can be a solution to the problem of universal postal service pricing.

The main problem of the cost management of network industries is their specific structure, which is characterized, among other things, by high participation, rapid growth and the diversification of overhead costs. The accuracy of cost information is conditioned by finding an adequate relation between overhead costs and cost objects, identifying and tracing cost drivers and output measures of activities, as well as by monitoring the cost behavior of different levels of a product. Considering that it implements new and accurate techniques, activity-based costing (ABC) presents a sophisticated way of overhead cost allocation, consistent with the cause and effect principle.

#### *THE CHARACTERISTICS OF THE MODERN BUSINESS CONDITIONS OF THE POSTAL SECTOR*

Network industries comprise those economic activities whose role in the process chain is being part of the network infrastructure. Delivery of services, i.e. products, to consumers in such industries is highly unlikely unless it involves various elements that form a network. Furthermore, the development of products and services is not feasible without a coordinated and interactive operation of a number of factors of production in geographically different locations. The components of the network infrastructure link the units in which one or more products or services are formed for the purpose of being delivered to or provided for users. Each network industry is made up of three components: the core product (service), network infrastructure, and product delivery or service provision to the final consumer (Hrivnak, Križanova, 2006, p. 32).

Network industries bring together companies active in the transport sector (road, rail, water and air transport) and the flow of information (mail, telecommunications). Additionally, network industries comprise utility networks (electricity, gas, water), which undoubtedly leads to the conclusion that a significant part of the world economy belongs to exactly this segment. Network industries account for 9% of the European Union

GDP, while their share in employment is 6.5%, or 13 million people (Belgian Federal Planning Bureau, 2006, p. 28).

Due to their great importance, expressed not only via their share in the total economy but also by being the basic prerequisite to any economic activity, network industries have long enjoyed a monopoly status. Besides, they often serve public interests, which is the main reason why the companies belonging to network industries have until recently been exclusively state-owned businesses. Their economic strength, measured in terms of a multiplier effect on both economic and social relations, has widely been used by states as a powerful tool (Tsai, Lin, Chou, 2010, p. 190).

The provision of products, i.e. services, of public interest is under the purview of network industries, which means that they have a significant economic and social impact. Network industries are not only a prerequisite for economic efficiency and competitiveness. In many areas, their outputs satisfy basic human needs as well. During the 1990s, a process of network industry deregulation was initiated in the European Union. The main objective of this process was creating conditions for setting up new companies in the competitive segments of the network industry, while the non-competitive segments were allowed to continue functioning as they had been before the reforms (Postal User's Group, 2006). The expected effects of the regulatory reform of network industries are observable on both sides: the supply and demand for network industry products and services. In regards to supply, the competition against natural monopolies focuses its market position on new products and services. Simultaneously, innovations in supply lead to a rise in demand, which, in turn, lowers the prices.

The specific characteristics of network industries imply that the deregulation of this economic segment is not an easy task. The course of influencing industry conditions in order to introduce competition is a process which occurs together with a number of specificities absent from other fields of economy. One of these specificities is the fact that businesses and companies within the network industry retain the obligation of universal service provision, whose basic characteristics are general geographic availability, and general affordability. Then, deregulation has to solve the problem of accessing the natural monopolist network through competition, primarily from the aspect of price. In addition, there is the issue of cross-subsidisation between the competitive activities of the natural monopolist and the non-competitive ones. The network industry regulatory reform in the EU, therefore, should essentially achieve the following three goals: stimulate competition in the segments where it is still lacking, guarantee a minimum level of public service, and ensure the efficient use of the network infrastructure (Magli et al., 2010, p. 3).

The deregulation of the postal service markets, as a part of the EU network industries, has fallen behind the markets of other products or

services belonging to this economic sector. The reasons for this primarily lie in the characteristics of this sector, such as the following: the output of the postal industry is service; natural monopoly occurs in the postal network segment; this is a labour-intensive network industry; the postal market is discernibly affected by the economies of scale and economies of scope; there is a simultaneous production of a wide range of services (Bradley, 2003). Postal service providers cannot produce supply services. The production and consumption of postal services occurs simultaneously, which in turn means that postal operators always need to be available to satisfy demand. Availability is particularly noticeable in the public postal operator (PPO) as a natural monopolist. The natural monopoly of the PPO is the result of defining the range and characteristics of the universal postal service, the term derived from the issue of the deregulation of this sector in the EU (Directive 97/67/EC).

Companies active in the postal sector cannot function without a corresponding network. When it comes to the PPO network, it should be emphasised that it was not established as a consequence of market demands. On the contrary, both its current and potential dimensions are mostly determined by non-market factors, such as the already mentioned universal postal service. Unlike other network industries, the postal sector is markedly labour-intensive. This characteristic should be viewed from two aspects. The first aspect focuses on the issues which may arise from fast market liberalisation, i.e. the transfer of the PPO users to other providers. Hence the deregulation of this sector needs to have a social dimension, too. The second aspect, which is the dominant share of staff costs, affects the process of cost accounting and management.

Similarly to other network industries, the effects of the economies of scale and economies of scope are evident in the postal sector as well. The economies of scale result from the postal network infrastructure whose capacities are fixed – the increase in services provided leads to a decrease in cost per service. Effects of the economies of scope in the postal sector arise from the simultaneous production of several different services. The costs of such joint production per service unit are lower than would be the case if each service was produced separately.

According to statistics, the postal sector accounts for a significant part of the EU economy. Letter, parcel and express mail deliveries in the EU generated an income of 79 billion euros in 2017. There were 1.8 million people employed as PPO. According to some studies, it is estimated that the indirect effect of the postal sector on the EU economy amounts to 203 billion euros (Copenhagen Economics, *Postal services in the EU*, 2019).

The value of the world parcel market, in which numerous private companies besides PPO are also active, reached 70 billion EUR in 2019. As a result of current epidemiological developments, it is anticipated that the parcel market will grow by 20% during 2020. For example, the Italian

PPO (Poste Italiane) has already recorded a growth of 53.9%, the PPO of Great Britain (Royal Mail) has recorded a growth of 38%, and the French PPO (La Poste) has recorded a growth of 33.2% (Apex Insight, European Parcels Market Insight Report 2020).

The effects of postal market liberalisation are expected in several areas, among which tariffs are the first area expected to reveal changes. The gradual emergence of competition on the market which had until just recently had completely monopolistic characteristics resulted in pressure being exerted on the PPO's prices. There is also a significant need to create accounting information in an effort to meet the request of new stakeholders (Khlif, Hussainey, 2016, p. 184). As a monopolist, a state-owned company is not forced to maximise its profit, but it sets prices driven by average costs. The price data shows that in more than half of the EU Member States, the postage for the most frequent postal service (delivery of letters up to 20 grams) has not risen in real terms. Productivity is the next area where positive effects of liberalisation are expected to occur. Competition pressure inevitably imposes a need for the improvement of the PPO's business processes, which results in a more rational use of the available resources. This affects the reduction in costs which consequently has an impact on the price policy (Ruiz de Arbuló Lopez, et al., 2013).

Additionally, the price structure of the postal services is changing. During the monopoly of PPO, the basic characteristic of the tariff policy is uniformity, i.e. there is no sufficient correlation with costs. The deregulation of the privileged PPO position sets the conditions for the arrival of the new postal service providers, who act in market segments with the highest price margin. These tendencies will lead to a gradual adjustment of prices in relation to costs, i.e. to a reduction of prices. The deregulation of postal service markets is an impulse for ultimately introducing innovations. The postal sector is the embodiment of an economic activity that has been functioning for decades, even centuries, in the same way. With the emergence of new participants on the market, innovation has become one of the ways of boosting competitiveness. Private providers taking over a part of the market is a strong incentive for the PPO to not only improve the existing processes and quality of services but also to introduce new ones. Due to the deregulation process, quality of services also shows positive tendencies. Innovations in the production process, prompted by competition pressure, have resulted in the shorter transfer time of mail, an increased level of the postal service availability, the enhanced reliability of these services, improved relationships with the clients, modification of traditional postal services, etc.

The characteristics of the postal sector have a dominant influence on the nature of costs. More precisely, they make monitoring costs a very complex process. Some of the problems that stem from the cost monitoring and management of PPO are: cost accounting and management when

the provision of some service is prescribed by law, cost accounting of cost centres, criteria for overhead cost allocation, costing per service, etc.

The necessary provision of the universal service, prescribed by law as a continual and mandatory activity for the whole national territory, is only one of the problems in the field of cost management (Postal Law of the Republic of Serbia). Its fulfilment requires the use of substantial resources, which results in high costs, making the disparity between installed and used capacities more complicated. How to transfer to services a part of the costs arisen from the provision of the universal service? The PPO network is not formed on the basis of the perceived market demands. Instead, it is a consequence of its historical development. Yet, due to the regulation of postal services, PPO has the obligation to practically maintain the given situation, which considerably restricts the possibility of adjustment to market demands, and rational cost management.

To do costing according to cost centres (which represent the particular organizational segments within the organizational PPO scheme), is yet another problem which occurs during the cost monitoring and management of PPO. The postal services are produced through an interaction a of smaller or greater number of the postal network units, i.e. cost centres. Given the complexity of the service process chain formation, this means that costs relating to one service arise in more cost centres. One of the perhaps most important elements of an adequate approach to cost management is based on an analysis of cost per every cost centre.

The PPO cost structure is yet another of the factors which make the process of cost management in these companies complex. As regards every postal company, direct costs are rare, i.e. their share in the total costs is frequently very low. Therefore, costs that can be called indirect, i.e. overhead costs, are predominant. Their allocation to groups of services, i.e. a particular service, is a new challenge to cost accounting and cost management.

A wide range of postal services which are simultaneously produced by frequently using the same resources is a new problem to the PPO cost accounting and management. Universal services, as well as those from the commercial segment (available to the competition) result as a consequence of using the same resources. There are no separate service lines, not even on the level of groups of services, and most frequently there is no time distance during service provision. This situation additionally aggravates costing per each individual service.

Basically, a key problem which, if left unresolved, prevents the quality cost management of the postal operator, is the choice of the proper approach to cost accounting and analysis. Assuming that a data collection process on cost amount is adequately organized, the PPO faces a dilemma about the way cost should be allocated so as to, eventually, enable costing per specific service. It is only then that it becomes possible to analyse cost amount, cost structure and other aspects of adequate cost management.

*THE SPECIFIC PROBLEMS OF COST ACCOUNTING  
METHODOLOGY IN NETWORK INDUSTRIES*

An approach to cost accounting adjusted to the specific situations of the postal activity should also evaluate the costs caused by providing a specific service in situations when several services are simultaneously provided, all while using the same resources. While identifying a particular methodology of cost accounting (<https://posta.rs/lat/o-nama/menadzment.aspx#izacionaStruktura>), the initial step is to discern two different categories of costs:

- costs completely attributed to the production of specific services,
- costs incurred regardless of whether a specific service is produced or not.

The first group of costs refers to direct costs definitively related to specific services, wherein one cost is attributed to one service. Conversely, the second group of costs refers to indirect costs, which demand the application of certain criteria (keys) for allocating them to specific services.

The allocation of indirect costs is one of the biggest challenges to regulators and bodies responsible for determining the conditions for fair competition (Dragendorf, 2019, p. 18). A separate act of the European Commission emphasises the importance of problems caused by a complex process of allocation of costs incurred during simultaneous provision of different services. According to Article 14 of Directive 97/67/EC, costs which cannot be directly assigned to a particular service shall be allocated, whenever possible, on the basis of direct analysis of the origin of the costs themselves. The following principles of cost allocation need to be considered (Directive 97/67/EC):

- Allocation of all costs incurred – all costs directly or indirectly assigned to postal service provision shall be so assigned;
- Causality – costs shall be allocated in accordance with the activities that caused them to be incurred;
- Objectivity – costs are allocated on the basis of an objective analysis, avoiding unjustifiable treatment of the company subject to regulation, or any other company;
- Transparency – a method of cost allocation needs to be transparent;
- Comparability – the criteria for cost allocation should be such as to provide comparability of cost data at regular intervals;
- Elasticity – cost allocation methodology needs to be responsive to changes in operator functioning;
- Consistency – cost allocation needs to be in compliance with the regulator's stated objectives (e.g. economic efficiency, fair

distribution) and legal obligations (respecting the user's interest, guaranteeing provision of the specific set of services, etc.); and

- Feasibility – cost allocation methodology needs to be feasible.

Upon considering the specific character of companies active in the postal sector, the importance of selecting an approach to cost accounting and management, as well as different allocation principles, it has become evident that cost allocation for the purpose of calculating the real cost price of postal services is a very complex task. This is likewise emphasised in Directive 97/67/EC, in Article 14 which thoroughly describes costs, their classification into direct and common costs, and their allocation to services. Serbia's Law on Postal Services deals with this issue in Article 24, using terms such as internal accounting, direct analysis of cost drivers, indirect measure of costing, etc (Law on Postal Services of the Republic of Serbia).

Both of the above mentioned documents, i.e. the sections dealing with costs, unambiguously point to Activity Based Costing (henceforth ABC) as an accounting approach which may be applied to the costing of postal services. Cost allocation to cost units according to the ABC postulates is based on an analysis of the microstructure of their (cost) drivers (Horngren et al., 2003, pp. 136-156). An equation connecting cost drivers and output (of products or services) is often used with certain approaches, but it is not valid in the ABC approach. When the same resources are component parts of the production process of different goods or services, direct cost allocation is not likely. It is necessary to separate each of the cost objects into components: it is true that certain resources must be mobilised to create a product or service, but in the production chain, however, various activities are realised. As a rule, performing several different activities contributes to the development of one product or service, which implies that all costs need to be allocated to specific activities (Everaert, Bruggeman, 2007, p. 19). In the next step of the research, each activity is connected with the final product or service.

As for the elements necessary for postal service cost accounting and management, financial accounting is the main data source of expenses and revenues. Yet, this data is not analytical enough for cost allocation, since various services frequently use the same resources. Noticeable deficiencies of the financial accounting data call for tailor-made PPO internal accounting which would provide detailed data, particularly on costs. As regards cost accounting, objectivity and accuracy of cost allocation is provided at the level of narrower organizational units – cost centres (henceforth CC). Implementing activity-based costing is in direct relationship with the existence, i.e. the quality, of internal accounting, whose structure is adjusted to, above all, the accounting needs of PPO management. The quality of management's decision-making depends on, *inter alia*, the level of detailed data on costs.



As regards cost accounting, objectivity and accuracy of cost allocation is provided at the level of narrower organizational units, which are in the public postal operator's case, cost centres (CC). If this lower organizational level can be described in terms of not only costs but also parameters which define the activities performed, then there are prerequisites for the application of the ABC approach (Jablan Stefanović, 2019, pp. 442-445).

Although the number of CCs has a direct influence on the cost allocation results, the internal accounting structure which identifies several cost systems need not indicate the quality and availability of data at the same time. As regards costing, a separate CC hierarchy will not be fully effective unless internal accounting strictly complies with the following principles (Directive 97/67/EC):

- *Cost centre structure elasticity*: organizational changes, such as opening new postal network units, must necessarily be reflected on the change of CC structure in internal accounting;
- *Organization plus*: the number, structure and interrelationship of cost centres is determined by the company's organizational structure; however, in internal accounting there should also be the possibility for a more detailed presentation of costs of the organizational parts that have not been mentioned in the organizational scheme, complying with the principle of cost-effectiveness;
- *Necessary book entry on CC accounts*: by booking all costs according to their origin one of the allocation principles is obeyed, that of causality, which means that costs are entered in centres where activities that drive them have been realised.

As regards the specificity of every CC, in relation to the character of processes that take place in them, one can differentiate between *production* and *non-production* cost centres. The production CC category is not homogeneous: a part of the centers is active in the core activity, while the other part is active in non-core activities.

All CC which comprise activities included in the production chain belong to production cost centres. Costs of these cost centres are always a part of the company product or service cost, irrespective of their being allocated in a direct or indirect way.

Non-production cost centres are a support to production organizational units. By indirect allocation, their costs become a part of the total cost of the final products or services, but only after an analysis of the nature and effects of their activities has been performed. This group of costs reaches up to 20% of the total costs of PPO (Dragendorf et al., 2019, 18).

The next aspect of CC focuses on an analysis of the effects of engaging production CCs. Nowadays, postal companies are characterised by a diversified service program, which means that they appear on the market not only as service providers from the core postal activity but also as

providers of other similar services. Hence a difference is made between production CCs in the postal operator *core activity* and production CCs in the postal operator *non-core activity*.

In both categories of CC attention should be paid to the so-called internal transfers, i.e. interrelated, intracompany service exchange. Comprehensiveness, as one of the principles of cost accounting, asks for a careful monitoring of the interdependency of all CCs, precisely by including and monitoring these internal effects.

Eventually, as for the functioning of ABC, it is necessary to differentiate between non-production CCs of *the specific character* and non-production CCs of *the general character*.

The first group comprises those cost centres whose activities are related to either the postal operator CC in the core activity or the postal operator CC in the non-core activity. Their costs are allocated to the results of the work process of one of these two groups of cost centres, in accordance with the parameters set for the activities performed in them.

For the general non-production CCs, the rule is that their operation provides support to all production units, both to segments in the core activity and those in non-core activities. According to the general allocation criteria, allocation of these costs is made to all CCs of the postal operators, irrespective of the production chain to which they belong.

Generally speaking, according to the previously defined accounting information system of the postal service provider we can discern three data driven, closely related areas: *financial accounting*, which monitors and sends data on costs according to cost types; *internal accounting* which monitors and sends data on costs according to cost centres; and *activity-based costing*, which should enable an adequate cost allocation to postal services.

Public Postal Operators need to allocate total costs to all products or services on which they earn income, so the focus is on the *Fully Distributed Costs* approach (henceforth FDC), (Directive 97/67/EC). Its application is relatively straightforward concerning PPOs who have not significantly entered the process of diversification. However, these examples are rare today, which is why the FDC approach requires a careful analysis of the organizational parts of PPOs, i.e. of each cost centre.

The complexity of the postal operators' cost accounting results from the fact that, apart from the postal service market, these companies also operate on the market of telecommunications, graphic services, and services of maintaining facilities, equipment and vehicles, etc. Postal services are not homogeneous either, and many of them *share* the same production resources, which makes costing per specific service very difficult. Most costs of these companies may be termed indirect, or common costs.

A key prerequisite for applying the ABC approach is a careful classification of all costs into four groups, taking into consideration their

drivers and the possibility of allocation to cost units. These are as follows: *direct costs*, *direct production costs*, *indirect production costs* and *indirect central costs* (ERPG, Costing access to the postal network, services and elements of infrastructure, 2017, p. 6).

A global cost data analysis needs to recognise *direct costs* in the first step of allocation (Maher et al., 2017, pp. 234-242). Direct costs are generated in the production chain, or in the part of it which relates to only one service or a group of them, which is why they are directly allocated. Allocation is made in accordance with the level of employment of resources which caused the costs to be incurred.

*Direct production costs* arise in those organizational units (cost centres) whose activities directly participate in the development of one or several different products or services. As regards the postal operator, these are the costs of the postal network units (PNU) which simultaneously produce different services, some of which are postal services. Because of the specificity of postal service production, direct production costs are allocated in compliance with the ABC approach (Drury, 2013, pp. 372-377).

A part of the postal operators' costs has the character of indirect (common) costs, as regards allocation to cost units of all services produced. These are the costs of organizational units which are not directly included in the postal operator's production chain, but whose activities are described as a support to the process of product or service development. The impossibility of a direct analysis of the causes of their origin is solved by the principle applied to previously allocated costs. This category of costs is not uniform. Thus, considering their relationship with direct production costs, a difference is made between *indirect (common) production costs* and *indirect (common) central costs* (ERPG, Costing access to the postal network, services and elements of infrastructure, 2017, p. 6).

The first group comprises the costs of cost centres whose activities are a direct support to the functioning of the production cost centres which are not directly included in the production chain of services. However, a link between these centers and concrete production cost centres may be clearly established. One of the examples of such cost centres is the territorial or functionally structured management of production cost centres. Their costs are allocated to the postal operator's services either from the core (postal) activity or from other, non-core activities. Since the direct analysis of the causes of their origin is not possible, they will be allocated according to the *cost-to-cost* method, which means that allocation to cost units is to be performed in the same way as in the case of allocating the same costs or group of costs at the level of production CCs.

*Indirect central costs*, the second sub-category of common costs, are also attributable to activity-based support to the core activity. These are the costs of cost centres (e.g. boards) which supervise all cost centres directly involved in the production of all services. Each of the boards

should be separately monitored so as to single out those which exclusively support postal activity. For other boards with multifunctional authority, a part of the costs is assigned as a consequence of support to the operations of the cost centre's postal activity. The final stage of the board cost allocation to postal services is not feasible on the basis of direct allocation alone, but the *cost-to-cost* allocation principle is applied (ERPG, Costing access to the postal network, services and elements of infrastructure, 2017, p. 6).

Allocation of all PPO costs to all their products and services (the FDC approach) is a starting point for defining the procedure, and it encompasses postal service costing. Therefore, it is necessary to perform an analysis of the functioning and interrelationships of the PPO organizational parts which can deal with: providing only postal services; providing other services in addition to the postal ones, using the same resources; and providing services in support of the core activity, outside the postal service chain.

The object of allocation in the first case are total costs of PPOs whose cost units represent each of the postal services produced. All costs, direct or indirect, in line with the defined parameters, are objects of allocation. The current development of the EU public postal sector indicates that the dominant trend is horizontal and vertical diversification of the production program. A diversified production and service program need not be an obstacle from the aspect of cost accounting, if every organizational unit represents a vertically complete system which functions independently of others.

However, the provision of only postal services is not characteristic of the postal sector. On the contrary, economic reasons, primarily obeying the principles of the economies of scale and scope, direct PPO operations toward the rational use of all resources available, from technical to human, which implies raising the level of capacity utilisation. Public postal operators are the typical example of companies whose cost structure is dominated by fixed costs incurred as a consequence of building and maintaining the network capable of satisfying the high standards of the universal postal service prescribed by law. Production possibilities of the installed capacities, primarily those in the network, are greater than the level of demand for universal service, which forces PPOs to use the declared surplus in the production of other services. Cost allocation in such cases depends on application of objective and verifiable criteria which express the level of resource utilisation during the production of every group of services, i.e. a specific service.

The third case exists when PPOs themselves perform activities which are not a part of the production chain of any service, spending specific resources accordingly. Say, instead of hiring an external contractor, one organizational unit within the PPO will renovate the facility of the postal network unit. In this case, cost is incurred by service provision in

the postal network unit, since renovation is necessary for a free flow of activities in that PPO functional unit. This means that in accordance with the causality principle, renovation costs must be recorded in the total amount of the activity costs realised in the postal network unit, and thereby in the cost price of its services as well. In other words, the costs of the internal realisation of products and services are part of the total costs of corresponding organizational parts of the postal operator (<https://posta.rs>).

The starting point for the grouping of costs for allocation purposes is the analysis of the nature of costs according to types described in financial accounting. As regards adequate cost allocation, it is necessary to respect the specific character of the postal activity and the basic principles of the ABC approach. With that in mind, while classifying costs of postal operators it is necessary to pay attention to: *quality of allocation parameters, allocation feasibility, importance of associated costs and possibility for identifying cost drivers* (Official Journal L 125, 2001, *Deutsche Post AG*).

The significance of costs is primarily determined by their share in the total costs. Allocation focuses on costs which account for the greatest part of the company's total costs which need to be as objectively allocated to final cost units as possible. Special treatment of low costs reduces costing feasibility and has, at the same time, an insignificant influence on the accuracy of the cost price.

Defining the types of costs is also possible by identifying parameters which will objectively describe their connection to activities. If such parameters do not exist or can be only theoretically defined, the identification of certain types of costs is unnecessary. Cost grouping for the purpose of adequate allocation is performed on the basis of costs calculated on the level of the postal operator production cost centres, specifically those directly included in the postal service production chain. Cost grouping on that level will reflect on other cost centres in which cost allocation to services will follow the *cost-to-cost* principle.

Costs incurred at the level of cost centres directly included in the postal service production chain may be *production* or *non-production* costs. Production costs arise as a direct consequence of work processes in the production cost centres, i.e., production process of all services provided at cost centers from that group. Non-production costs are only indirectly related to activities performed at the level of production cost centres. These are financial and other expenses which are not directly related to activities in production cost centres. The drivers of these costs are numerous and very complicated to identify, so that allocation is frequently made on the basis of the amount of previously allocated costs.

According to monitoring and their adequate allocation, *production costs* may be divided into: staff costs, depreciation costs, facility costs, equipment costs, vehicle costs and other production costs. This classifica-

tion of costs is determined by a tendency to allocate costs to cost units in compliance with the causality principle.

Costs booked in the production cost centre accounts are to be allocated to all PPO services. A part of these costs, or a rather small number of them, will be directly allocated to final units because of the specific character of the PPO production process. Conversely, allocation of most costs will be indirectly made, on the basis of identified activities which make up a specific service.

Before describing the allocation process, let us go back to direct costs which need to be further classified as:

- direct costs of postal service provision, and
- direct costs of the PPO postal and other services.

According to ABC, direct costs that refer to only one phase of the postal process chain are viewed as separate (direct) costs. In order to allocate them to a specific postal service, it is necessary to separate their allocation to the phase level by applying different criteria (parameters). Unlike direct costs at the phase level, the service direct costs (postal and other) skip the first step of allocation (costing of phases) and are allocated to a specific service or a group of services. According to ABC, allocation of all other types of costs called direct production costs (the biggest part of the PPO costs), is made in two steps: *allocation of CC costs to activities* and *allocation of activity costs to postal services*. Allocation is based on the identification and careful analysis of Resource Drivers and Activity Drivers, which are specific parameters that describe the interrelationship between costs and specific activity or service (Ostrenga, Probst, 1992, pp. 5-9). Data on using specific resources is booked in cost centre accounts. Among the group of all PPO cost centres, we used data from the accounts of those CCs which are directly included in production processes of postal or other services.

Upon direct cost allocation to a part of the postal production process or a service, the parameters which objectively indicate specific resource drivers are defined. Parameters for resource mobilisation will be defined for each of the identified type of costs separately (section 6.4), by answering the following questions: In what part of the service production chain (or the postal service phase) are resources mobilised? Which factors affect the emergence and intensity of resource mobilisation?

### *THE IMPLEMENTATION OF A POSSIBLE MODEL OF COST ACCOUNTING IN THE POSTAL SERVICES SECTOR*

According to the ABC model, in order to adequately allocate costs to units, costs are attributable to separate phases of the postal service *production process*. As regards Serbia's PPO there are four stages to this process: *reception, sorting, transport and delivery*.<sup>1</sup>

The allocation of staff costs to the service production process phases is based on a *realised minute standard* as an indicator of the work load of the staff in the postal network units. Allocation of depreciation costs basically has the PPO resource structure. A share of each of the four groups of resources in the total depreciation costs is to be determined (facilities, equipment, vehicles, etc.). Facility costs are allocated according to their use, so that in the total area of each postal network unit there is a section for reception (front-office), sorting, delivery, transport and other jobs. The determined percentage structure of the total area of the facility represents a parameter for all cost classifications included in this category of costs. Equipment costs are also allocated according to their use, so that the equipment structure of each postal network unit differentiates the following groups: for reception sorting, delivery and other activities. Vehicle costs are allocated according to their number and the structure of their use which serve as parameters for determining the costs of vehicles used during reception, transport, delivery, i.e. vehicle costs for specific services and non-technological purposes. The group *Other production costs* comprises a heterogeneous category of costs booked at the level of the postal network unit for which allocation parameters cannot be identified. The allocation of these costs is based on information about realised minute standard at the level of a specific postal network unit, according to service types.

In the continuation of the paper, we will focus on postal activity, a segment which is still the most important to every PPO despite deregulation. Taking staff costs as an example, we will show a model of the choice and use of resource allocation parameters. To allocate this category of costs, it is necessary to observe the amount of these costs realised at post offices and postal centres as production cost centres. The key to allocation is the number of realised minute standard of the staff employed in different jobs, which need to be grouped in two steps so as to recognise the adequate allocation parameters:

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<sup>1</sup> The specification of the phases of the process of providing postal services and the graphic illustration of the allocation of costs in the following text was created on the basis of insight into the organizational scheme of PPO and detailed monitoring of the actual functioning of the process of providing services in PPO in Serbia (<https://posta.rs/lat/o-nama/menadzment.aspx#izacionaStruktura>).

- the classification of all minute standard items into postal services, and
- the classification of all minute standard items into one of the four phases of the postal service production chain (reception, sorting, transport, delivery).

The fact is that, for a smaller number of jobs, which in turn means fewer staff at post offices and postal centres, time standards setting is hard to perform. Staff costs in non-standardisation jobs will be dealt with in the allocation process as costs of staff directly engaged in the realisation of some of the phases of the postal service production chain, i.e. some of the services. Because of that, staff costs, at the level of the *Post office* and *Postal centres* cost centres will be the object of allocation, which is, in a simplified manner, illustrated in Figure 1.

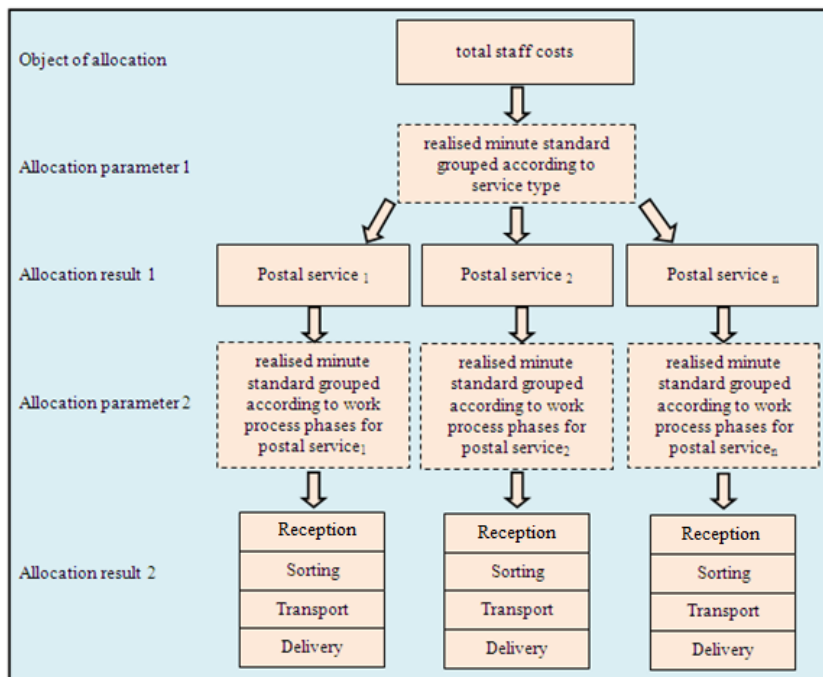


Figure 1. Allocation of staff costs

The next step in postal service costing requires the identification of parameters which describe the extent to which specific services need the realisation of certain activities. The allocation result of the defined types of costs (costs of staff, facility, equipment, vehicles, other production costs) is the postal service costs according to the work process phases, illustrated in Figure 2.



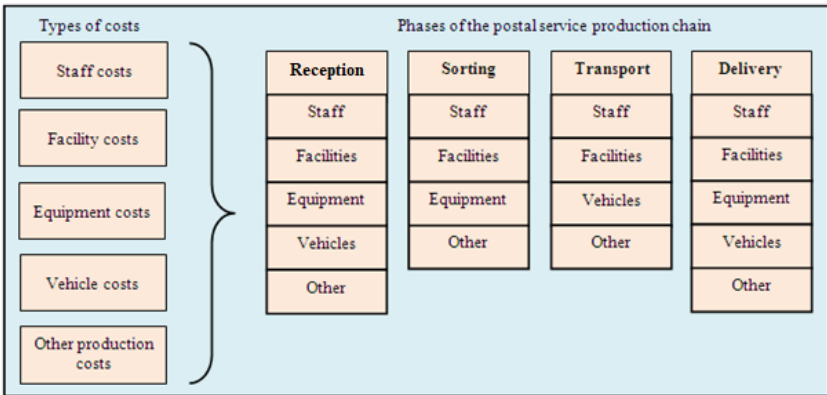


Figure 2. Results of allocation according to resources

The goal of allocation of activity-based costs is to do costing per specific postal service. To reach this goal, it is necessary to identify parameters which describe what services and to what extent some activities need to be realised. Figure 3 is a simplified general representation of cost allocation from the phases of the postal service production chain to a specific postal service.

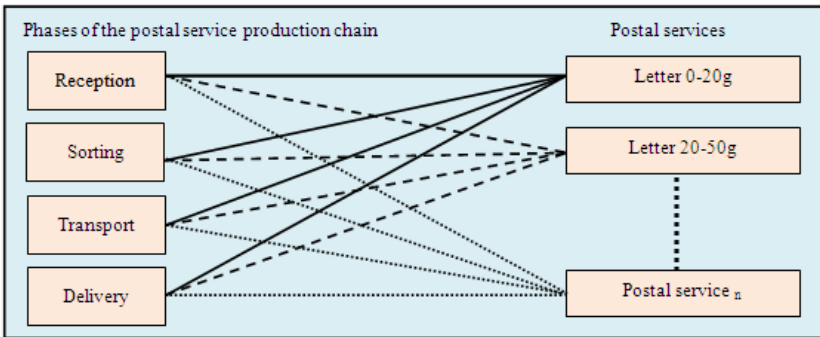


Figure 3. Goal of activity-based allocation

We will show the procedure of cost allocation from the described phases to a specific postal service using the first phase of the postal service production process, *reception*, as an example. As a result of cost allocation of post offices and postal centres, the staff, facility, equipment, vehicle and other production costs are assigned to a *Reception* phase of the postal service production chain. In this way, costing of the *Reception* phase includes reception costs of all services from the group of postal services. The allocation task consists of identifying a part of the costs in the *Reception* phase incurred as a consequence of reception of each spe-

cific postal service. It is necessary to define such an activity parameter which in the best way indicates the cause-result relationship of the origins of reception costs and the specific postal service (Barndt et al., 2015, p. 23).

Prior to cost allocation of the *Reception* phase, grouping of costs into two categories occurs: the first comprises the staff, facility, equipment and other production costs, whereas the second includes vehicle costs. The first group of costs will be allocated to postal services according to the number of realised minute standard in the *Reception* phase, for the period in which costing is done. The data on realised minute standard is shown at the level of every specific postal service. Vehicle costs are allocated according to a parameter which is a result of recording the number and structure of mail (according to weight) received via each vehicle. Cost allocation to cost units according to activity parameters is shown in Figure 4.

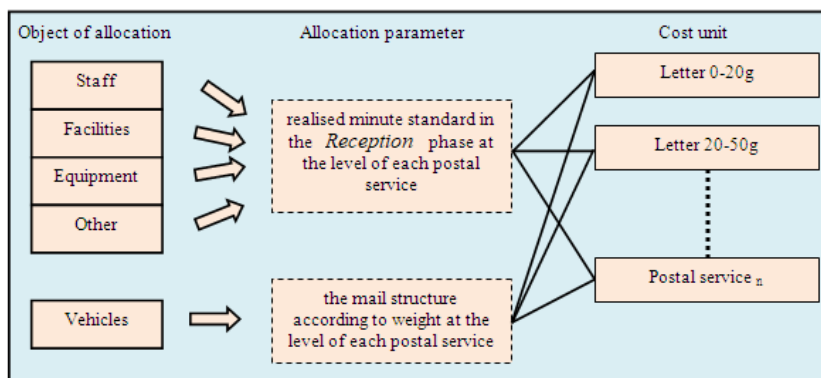


Figure 4. Activity parameters: reception

Costs of the *Sorting* phase are allocated to postal services according to the time spent on sorting each service. The structure of realised minute standard of the sorting activities is the parameter applied for their allocation (Baker, 1994, pp. 28-29). All costs of the *Transport* phase are allocated to postal services following the allocation parameter defined on the basis of monitoring the structure of the total number of transported mail (according to weight). The costs of the *Delivery* phase are grouped in the same way as those of the *Reception* phase. The first group of costs will be allocated to postal services according to the number of realised minute standard of the *Delivery* phase, expressed at the level of each separate service. Vehicle costs are allocated on the basis of data on the structure of the total number of delivered mail (according to weight).

Cost allocation of the production cost centres does not conclude the costing process of the postal services. Indirect (common) production and indirect (common) central costs are also allocated to specific postal

services, according to the applied principle of the fully distributed cost allocation. However, unlike the production costs, these two groups are allocated according to the *cost-to-cost* principle, that is, on the basis of the amount of the *previously allocated costs*.

The first step of cost allocation from the account of non-production cost centres is recognising direct costs which are directly calculated to the phase or specific postal service.

The second step of allocation includes the application of the *cost-to-cost* principle. Its functioning may be explained if staff costs of the board of one postal work unit are taken as an example. A part of the board salary costs which will charge, for example the *Reception* phase, is calculated on the basis of a percentage share of the total costs of salaries of the production cost centres of the given work unit (the post office and postal centre) allocated to the *Reception* phase, in the total costs of salaries of the production cost centres of the given work unit. The allocation of indirect production costs to the *Reception* phase, exemplified by the staff costs of the Head office of the postal work unit cost centre, is illustrated in Figure 5.

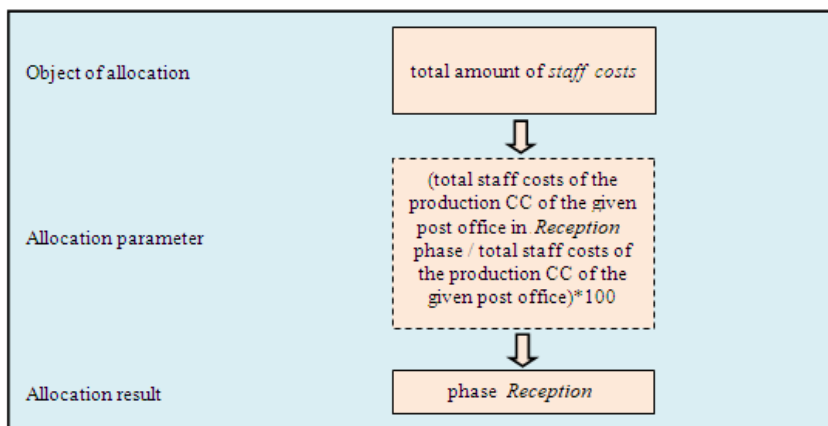


Figure 5. Indirect production cost allocation.

Central costs are allocated according to the similar principle applied to indirect production costs. The only difference is the basis which is taken into consideration while calculating allocation parameters: in the case of central costs these are all the production cost centres at the PPO level.

$$\text{Allocation parameter of staff costs of the Board to the Reception phase} = \frac{\text{total staff costs of all PPO production CC allocated to the Reception phase}}{\text{total staff costs of all PPO production CC}} * 100$$

The principle of *previously allocated costs* is applied to a part of indirect production and central costs, such as financial and other expenses (Dragendorf et, al., 2019, pp. 18). A key prerequisite for their allocation is the previous termination of cost allocation of the boards, i.e. territorially organized boards of the postal work units. Such costs are identified as production costs. The result of the production cost allocation is expressed as a percentage structure of the share of a specific phase from the postal service production chain in the total production costs of the board, i.e. the board of the postal work units. That structure represents parameters according to which associated costs are allocated to each of the four phases of the postal service production chain, and then from that phase to the corresponding postal service according to the previously described procedure.

The importance of costs data for the pricing of postal services imposes the need for adequate calculation of costs, ie. cost allocation in accordance with the ABC approach, which successfully respects the specifics of the costs of postal operators.

### CONCLUSION

There are three key characteristics of the current stage of the EU PPO development, and these apply to our national postal operator as well: liberalisation, development of new communication channels which jeopardise traditional ones, and economic crisis. The process of cost management is of vital importance for overcoming all three challenges, which, in turn, leads to considerable changes in priorities the PPO management focuses on. In the previous stages of development, the emphasis was placed on solving technological problems, mainly on how to produce a wide range of services with available resources. The production process costs were the topic at the end of the priority list of the PPO management. Performance success was assessed by the level of the satisfaction of the public interest. The inevitable consequence of such a relationship was ultimately the uneconomical spending of the available resources, manifested as a higher price paid by the final users.

The process of postal service liberalisation aims to reduce prices, improve the quality of the existing services and develop new ones. Managements' orientation toward adequate cost management is getting full recognition for striving to maintain and enhance the market position.

The significance of cost data for setting the postal service price calls for adequate cost accounting, i.e. cost allocation according to the ABC approach, which successfully takes into consideration the specific character of the postal operators' costs. The relevant results, which are practically applicable, are the basis of the model of calculating the cost of universal postal service, designed to provide informational support to management during pricing.

This paper shows the basics of a potential Universal Postal Service (UPS) Cost Accounting Model of the Public Postal Operator (PPO) in Serbia. EU Directive 97/67 represents the starting point for providing the guidelines for the development of this model, such as the separate internal accounting for several PPO service segments. This internal accounting system should be based on the principles of consistency and impartiality, appreciating all the functional complexities of a PPO. The existing legislative framework which defines the relations on the national postal service market pays special attention to the cost of UPS as the essential point for forming the price of this service.

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## ИЗАЗОВИ УПРАВЉАЊА ТРОШКОВИМА УНИВЕРЗАЛНЕ ПОШТАНСКЕ УСЛУГЕ

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### Резиме

У раду је образложена теоријско-методолошка основа могућег приступа обрачуну и управљању трошковима универзалне поштанске услуге у условима либерализације тржишта поштанских услуга. Истраживање је подразумевало детаљну анализу захтева Закона о поштанским услугама Републике Србије, законске регулативе ЕУ у вези са мрежним индустријама, праксе регионалних оператора, доступне стручне литературе и детаљног снимања процеса пружања поштанских услуга од стране ЈПО у Србији. Посебан организациони сегменти у организационој шеми ЈПО су места трошкова, јер поштанске услуге се производе у интеракцији већег или мањег броја ових јединица поштанске мреже. Структура трошкова ЈПО је још један од фактора који усложњава процес управљања трошковима у овим компанијама, зато што доминирају трошкови које можемо да означимо као индиректни трошкови. Њихова алокација на групе услуга, односно појединачну услугу је изазов за обрачун и управљање трошковима. Могући модел обрачуна трошкова, који је резултат истраживања, представља предлог интегрисаног функционисања добре праксе традиционалног приступа и основа АБЦ приступа. Резултати истраживања у овом раду требало би да подстакну стално унапређење обрачуна и управљања трошковима поштанских услуга у правцу адекватне информационе подршке менаџменту ЈПО.

## INSURANCE MARKET DEVELOPMENT AND ECONOMIC GROWTH: EVIDENCE FROM WESTERN BALKANS REGION

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### Abstract

The basic objective of the paper is the examination of mutual interdependence of the parameters on insurance market and the economic growth at the specific area of ex-Yugoslavia. Time horizon of the observation encompasses the period 2005-2019, and as the appropriate methodological framework, the econometrics of panel data was used. The accompanying co-integration tests and tests of long-term effects have shown that the insurance sector and economic growth are long-term related, as well as that the insurance sector exerts positive and statistically significant influence on the economic growth. Additionally, it was shown that non-life insurance realizes more significant effects on growth. To confirm robustness, causality test has shown that changes in insurance sector cause the changes in economic growth. Economic policy makers have an important task ahead of them, which consists in promoting insurance markets, improvement of regulation, and legislation framework that should contribute to the growth of economic activity in analyzed countries.

**Key words:** insurance development, economic growth, panel causality, ex-Yugoslavia

## РАЗВОЈ ТРЖИШТА ОСИГУРАЊА И ЕКОНОМСКИ РАСТ: ПРИКАЗ ЗЕМАЉА РЕГИОНА ЗАПАДНОГ БАЛКАНА

### Апстракт

Основни циљ рада је испитивање међусобне условљености параметара на тржишту осигурања и економског раста на специфичном подручју бивше Југославије. Временски хоризонт посматрања обухвата период 2005-2019. године, а као одговарајући методолошки оквир коришћена је економетрија панела. Пропратни тестови коинтеграције и дугорочних ефеката су показали да су сектор осигурања и економски раст дугорочно повезани, као и да сектор осигурања

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врши позитиван и статистички значајан утицај на економски раст. Додатно, показано је да неживотно осигурање остварује значајније ефекте по раст. За потврду робусности, тест каузалности је потврдио да промене у сектору осигурања изазивају промене у економском расту. Пред носиоцима економске политике је важан задатак који се састоји у промовисању тржишта осигурања, унапређењу регулативе и законодавног оквира, који би требали да допринесу расту привредне активности у анализираним земљама.

**Кључне речи:** развој тржишта осигурања, економски раст, панел каузалност, экс- Југославија

## INTRODUCTION

It is generally accepted that the main functions of insurance are direct and indirect protection, mobilization and allocation of monetary funds and social function. Therefore, insurance is equally important for individuals, businesses and governments. The study of the European Committee in the field of insurance, and previous scientific studies, pointed out that the insurance industry affects economic growth through the following: (1) offering protection to companies and individuals for covering damages that are provoked by destructive forces of nature and human action, (2) facilitating commercial transactions and the provision of credit by mitigating losses, (3) promoting entrepreneurship, encouraging innovations, investment, market development and competition, (4) increasing financial intermediation through life insurance products and (5) enabling risk averse individuals and companies to undertake higher return activities (Cristea, Marcu, & Cârstina, 2014; Peleckienė, Peleckis, Dudzevičiūtė & Peleckis, 2019).

In a broader sense, it could be said that insurance business has a positive impact on economic development and vice versa. As a developed insurance market stimulates economic growth of a country, the level of its economic growth affects insurance business development in return. Over the last two decades, significant attention has been paid to the evaluation of the relationship between financial development and economic growth. Most of those studies are related to the banking sector and financial markets. However, in the last years, the insurance sector received a growing attention. The nature of causality between the insurance market development and economic growth, and how these categories affect each other, has become a debatable issue. This paper deals with the relationship between the key economic factors and development of the insurance sectors in a specific region of the Western Balkans, called ex-Yugoslavia, which includes Slovenia, Croatia, Serbia, Montenegro, North Macedonia and Bosnia and Herzegovina. There is a very interesting point of view in the historical sense, because these countries have a similar historical heritage, but today they are completely independent and significantly different. As an additional specificity of this region, with the disintegration of the former common state, Slovenia belonged to another region in relation to other countries. Nowadays, Slovenia is a part of the Central Eu-



ropean region, but it will be included into the research because of its ex-Yugoslavia background.

This research attempts to provide a more reliable assessment of the relationship between insurance development and economic growth in these countries using annual data from 2005 to 2019. The results can be useful for institutions and regulators of financial systems, economic analysts and other subjects in these countries, in order to detect and forecast insurance market development trends and possible measures to encourage it. This paper consists of five parts. After the introductory part and literature review, there is a description of the methodology and data used. The part that follows is dedicated to empirical results, and the last part contains the concluding remarks and some possible research directions.

### LITERATURE REVIEW

Researchers have examined causality between insurance market development and economic growth at different levels and from different points of view – from the whole world to individual countries and from the entire insurance markets to the specific types of insurance. Table 1 presents the studies which investigated the relationship between the development of the insurance market and economic growth. The main findings confirmed the positive impact of the (life) insurance market on economic growth.

*Table 1. Link between insurance parameters and economic growth*

Study	Time period	No. of countries	Methodology	Result
Arena (2008)	1974-2004	55	GMM	Life insurance → economic growth Non-life insurance → economic growth
Sümeği (2008)	1992-2005	29	Panel regression	Life insurance → economic growth
Ćurak, Lončar & Poposki (2009)	1992-2007	10	Panel fixed-effect	Insurance → economic growth
Ilhan & Bahadır (2011)	1999-2008	29	Panel regression	Insurance → economic growth
Chen, Lee & Lee (2012)	1976-2005	60	GMM	Life insurance → economic growth
Chang, Lee & Chang (2014)	1979-2006	10	Granger bootstrap	Insurance → economic growth
Stančić & Lojanica (2020)	2003-2019	12	Granger causality	Insurance → economic growth

Zouhaier (2014) conducted research on 23 OECD countries using panel data model with fixed effect in the period 1990-2011. He observed the insurance industry in total, but also life and non-life sectors in particular. He found a negative effect of aggregate and non-life insurance on economic growth when measured by the insurance density. On the other hand, non-life insurance has significant positive impact on economic growth, when measured by the penetration rate. Peleckienė, Peleckis, Dudzevičiūtė & Peleckis (2019) examined the relationships between insurance and economic growth across the 27 EU countries, over the period of 2004–2015. They detected a positive statistically significant relationship between insurance penetration and economic growth in Luxembourg, Denmark, Netherlands and Finland. Besides, a negative statistically significant relationship has been identified in Austria, Belgium, Malta, Estonia and Slovakia. The main econometric method was the Granger test that has shown unidirectional causality running from GDP to insurance in Luxembourg and Finland and unidirectional causality from insurance to GDP in Netherlands, Malta and Estonia. The case of Austria has shown bidirectional causality between the variables and in Slovakia results has shown the absence of causality between them.

To the best of our knowledge, there are only a few published articles concerning the specific region, which will be researched in this paper. Njegomir & Stojić (2010) tested the interaction between economic growth and insurance in the ex-Yugoslavia region, but relative to this paper, they excluded Montenegro. Using the Granger test and fixed effects models for panel data for the period 2004-2008, they concluded that the insurance sector development positively and significantly affects economic growth. Novović Burić, Cerović Smolović, Lipovina Božović & Lalević Filipović (2017) used panel data model in period 2005-2015 for 6 Western Balkan countries (relative to this paper they included Albania and excluded Slovenia) to indicate the main economic factors that have important influence on the purchase of life insurance products. The results showed that the GDP and wages have significant and positive impact on the demand for life insurance (measured by total life insurance premium), while the impact of unemployment rate and interest rate is negative.

The review of recent studies has shown that there are only a few studies conducted on the insurance markets of the Western Balkans. Still, much more interest was shown for the development of the banking sector in countries of this region (recently, Kalaš, Mirović, Milenković & Andrašić, 2020).

### DATA AND METHODOLOGY

The following variables will be used in the paper: three variables related to the insurance density (gross insurance premium per capita (GIPPC), gross life insurance premium per capita (GIPPC\_life) and gross non-life insurance premium per capita (GIPPC\_non-life)), then three variables related to the penetration rate (participation of insurance premium in gross domestic product (PENE), participation of life insurance premium in gross domestic product (PENE\_life) and participation of non-life insurance premium in gross domestic product (PENE\_non-life)), as well as two macroeconomic indicators (gross domestic product per capita (GDPPC) and the level of trade openness of the economy (OPEN)). Within the database of international institutions, data on variables related to the insurance sector are not available for all the countries that are the subject of our analysis. For instance, the countries of former Yugoslavia, according to the statistical base of respectable Swiss Re Institute and their publication Sigma, belong to the domain of developing European insurance markets. However, only Slovenia, Croatia, and Serbia are listed within emerging EMEA (Europe, Middle East and Africa), while the other countries are included within “other countries“ of that segment of world market. For such reason, data on the indicators of insurance market are taken from the official web sites of state insurance agencies (Slovenian Insurance Association, Croatian Insurance Bureau, Insurance Supervision Agency – Montenegro, Insurance Supervision Agency of North Macedonia, Insurance Agency of Bosnia and Herzegovina and Insurance

*Table 2. Descriptive statistics results*

Variable		GDPPC	GIPPC	GIPPC_ life	GIPPC_ non-life	OPEN	PENE	PENE_ life	PENE_ non-life
<b>Country</b>									
Serbia	1	13937.14	107.87	20.59	87.28	88.09	1.91	0.36	1.56
	2	2654.28	20.51	8.76	14.27	14.82	0.11	0.12	0.13
	3	0.14	0.04	0.72	0.21	1.19	0.74	1.16	0.15
Montenegro	1	15095.83	135.51	19.58	115.93	109.01	1.98	0.27	1.71
	2	3731.11	29.26	8.37	21.39	10.08	0.14	0.10	0.11
	3	0.28	5.14	1.98	5.74	4.40	1.27	3.67	0.51
North Macedonia	1	12396.16	73.01	7.18	65.83	109.96	1.55	0.14	1.41
	2	2902.54	11.22	5.02	7.21	15.10	0.11	0.08	0.17
	3	0.50	0.05	1.17	1.13	0.23	2.50	1.31	1.52
Slovenia	1	30750.48	1281.20	402.01	879.11	140.35	5.51	1.73	3.79
	2	4693.24	160.11	64.99	99.45	13.84	0.31	0.16	0.18
	3	1.55	0.93	0.52	1.41	0.41	1.29	1.08	1.86
Croatia	1	22015.17	364.46	104.42	260.05	86.68	2.69	0.77	1.91
	2	3890.61	46.58	11.97	38.96	9.60	0.12	0.05	0.15
	3	0.60	0.30	3.80	0.39	0.67	1.39	1.00	1.86
B&H	1	10767.26	85.58	14.59	70.99	89.87	2.01	0.33	1.68
	2	2711.27	19.88	6.16	13.93	7.67	0.11	0.09	0.09
	3	0.65	0.41	0.76	0.39	0.11	0.88	1.28	1.95

1-Mean; 2- Standard deviation; 3-Jarque-Bera test. *Source:* Author's calculations

Supervision Department of National Bank of Serbia). Variables related to the penetration rate are expressed in percents, while those related to the insurance density are expressed in US dollars. In order to present the level of economic activity in the most appropriate way, GDPPC was measured by the purchasing power parity, in international dollars, and data on its flow are available within database of World Bank (WDI, 2020). In order to avoid the potential bias problem, an additional OPEN variable was included in the analysis, which was expressed in percents as a share of total import and export of national economy in GDP (WDI, 2020).

Time horizon covers the period from 2005, when the majority of analyzed countries started regular reporting from the insurance market, to (last available) 2019. In the empirical analysis, the balanced panel was used, and it has total of 90 observations. Since the time horizon covering a period of 15 years ( $T=15$ ) is larger than number of observation units ( $N=6$ ), the appropriate methodology including examination of panel cointegration and panel causality (Breitung & Pesaran, 2005) will be applied in the paper. Table 2 shows the descriptive statistics of indicators. It can be pointed out that the economies with higher average GDPPC invest on average more assets into the insurance sector, i.e. they are more active on this market. Due to statistical reasons, the variables are converted into the logarithm form and marked with small letters (*gdppc*, *open*, *gippc*, *gippc\_life*, *gippc\_non-life*, *pene*, *pene\_life*, *pene\_non-life*). Dependence of the economic growth and insurance sector can be shown in the following way:

$$gdppc_{it} = \theta_i + \beta_1 x_{it} + \beta_2 open_{it} + \varepsilon_{it} \quad (1)$$

where  $i = 1, 2, \dots, N$  is the index of the country,  $t = 1, 2, \dots, T$  is the time index,  $\beta_1$ , and  $\beta_2$  indicates the long-term effects of the independent on the dependent variable,  $\theta_i$  is country-specific fixed effect, while  $\varepsilon_{it}$  is error term. In this case,  $x$  represents the independent variable, which is related to the insurance sector (*gippc*, *gippc\_life*, *gippc\_non-life*, *pene*, *pene\_life*, *pene\_non-life*). The total of six models will be tested in the paper: first, the independent  $x$  will be represented in form of *gippc*, then in the second model as *gippc\_life*, in the third model as *gippc\_non-life*, in the fourth *pene*, in the fifth *pene\_life*, and in the sixth *pene\_non-life*. Taking into account that potential existence of common shocks among selected countries could result in creating contemporaneous correlation, it is very important to specify cross-sectional dependencies. Breusch & Pagan (1980) suggested LM test, which can be shown in the following form:

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij}^2 \quad (2)$$

where the sample assessment is pairwise of the residual correlation, obtained from the equation 1, by applying OLS model, for any  $i$ . Under

the null hypothesis, LM statistics is characterized by chi square distribution with  $N*(N-1)/2$  degrees of freedom. In order to check the robustness of the results, Pesaran (2004) cross-section dependence test was also used. Having taken into account that the literature dealing with issues of panel data has shown that economic indicators express significant interdependence among countries, i.e. the presence of common shocks, it imposes the use of specific tests of unit root in empirical procedures. In this regard, the second generation stationarity test proposed by Pesaran (2007) will be used.

Long-term connection of variables was tested by using Johansen-Fisher panel combined cointegration test. Maddala & Wu (1999) using Johansen cointegration test have considered Fisher's suggestion to perform combining individual tests and suggested alternatives to trace statistics and Max-eigen statistics for testing cointegration in the panel. They combined individual results for every unit of observation. Basic precondition for using this test is that analyzed variables have the order of integration one (i.e. I(1)), i.e. that they are stationary after conversion into the first difference. After testing cointegration, the evaluation of the long-run parameters is carried out with the help of the panel Dynamic Ordinary Least Square (DOLS) developed by Pedroni (2001). This approach allows greater flexibility in the case of presence of heterogeneous cointegration vectors. Dynamic OLS in the panel model can be shown in the following form:

$$y_{it} = \alpha_i + \beta x_{it} + \sum_{j=-p_i}^{p_i} \phi_{ij} \Delta x_{it-j} + \varepsilon_{it} \quad (3)$$

where  $\phi_{ij}$  represents the coefficients of the lead and lag differences, which accounts for the possible serial correlation and endogeneity of the regressor(s), thus yielding unbiased estimates, while  $\pm p_i$  is the number of lags and leads. DOLS generates unbiased estimates for cointegrating variables, even with endogenous regressors, which is a very important feature of this procedure. In order to check the robustness of the results, an FMOLS model was also tested. To determine causality in this panel study, the Granger test of non-causality, developed by Dumitrescu & Hurlin (2012) will be used. In short, this is a statistical test based on the Wald statistics that is averaged between the units of the cross-section data. Specifically, this method involves testing of the causal relations for each country individually, while the cross-section data are used to improve the model specifications as well as the power of the test (Holtz-Eakin, Newey & Rosen, 1998). It is important to emphasize that Dumitrescu & Hurlin (2012) have shown that standardized panel statistics also has very good characteristics on samples of smaller extent, even in situations when interdependence of observation units is present.

### EMPIRICAL RESULTS

The results of Breusch-Pagan LM and Pesaran CD tests are shown in Table 3. The testing is based on the null hypothesis that there is no cross-dependence of panel data. The results show that the null hypothesis, in all models, with the significance level of 1%, cannot be accepted, which implies the presence of cross-dependence of panel data. The obtained result means that in case of negative (positive) economic event in some of ex-YU countries the effect is transferred to other ex-YU countries.

Table 3. Cross sectional dependence tests

Model	Test	Test statistics
gdppc= f(gippc, open)	Breusch- Pagan LM	75.33*
gdppc= f(gippc, open)	Pesaran CD	5.25*
gdppc= f(gippc_life, open)	Breusch- Pagan LM	76.18*
gdppc= f(gippc_life, open)	Pesaran CD	1.74***
gdppc= f(gippc_non-life, open)	Breusch- Pagan LM	74.28*
gdppc= f(gippc_non-life, open)	Pesaran CD	6.65*
gdppc= f(pene, open)	Breusch- Pagan LM	134.58*
gdppc= f(pene, open)	Pesaran CD	11.39
gdppc= f(pene_life, open)	Breusch- Pagan LM	75.70*
gdppc= f(pene_life, open)	Pesaran CD	3.24*
gdppc= f(gippc_non-life, open)	Breusch- Pagan LM	90.43*
gdppc= f(gippc_non-life, open)	Pesaran CD	9.31*

Note: \*, \*\* and \*\*\* indicates significance at the 1%, 5% and 10% levels, respectively.

Source: Author's calculations

In Table 4, the results of unit root test for analyzed variables are presented. Pesaran (2007) test is based on the null hypothesis that the variables have unit root. Following the test results on the level data, the null hypothesis is not rejected in any case. In the contrast, after converting

Table 4. Results of the panel unit root test

Series	PESCADF (constant)					
	Levels			First difference		
	t-bar test	cv5	cv1	t-bar test	cv5	cv1
gdppc <sub>it</sub>	-2.16	-2.37	-2.66	-4.15	-2.37	-2.66
gippc <sub>it</sub>	-0.13	-2.37	-2.66	-3.63	-2.37	-2.66
gippc_life <sub>it</sub>	-1.98	-2.37	-2.66	-2.89	-2.37	-2.66
gippc_non-life <sub>it</sub>	-0.71	-2.37	-2.66	-3.07	-2.37	-2.66
open <sub>it</sub>	-0.98	-2.37	-2.66	-2.64	-2.37	-2.66
pene <sub>it</sub>	-1.63	-2.37	-2.66	-2.59	-2.37	-2.66
pene_life <sub>it</sub>	-2.35	-2.37	-2.66	-2.87	-2.37	-2.66
pene_non-life <sub>it</sub>	-1.66	-2.37	-2.66	-2.93	-2.37	-2.66

Notes: cv5 and cv1 are critical value at 5 and 1%, respectively.

Source: Author's calculations

variables into the first difference, the null hypothesis is not accepted in any case. The acceptance of alternative hypothesis on the first difference, leads to the conclusion that all observed variables are stationary and that the results are statistically significant. All the variables have order of integration one, which is a precondition for performing Johansen-Fisher panel cointegration test.

The results of cointegration panel test are shown in Table 5. The null hypothesis that is tested first, is based on the assumption that there is no cointegration among variables ( $r=0$ ), then the hypothesis that no more than one cointegration vector is present ( $r\leq 1$ ) is tested and in the end the hypothesis that no more than two cointegration vectors are present ( $r\leq 2$ ) is tested. In the first two cases null hypothesis ( $r=0$ ,  $r\leq 1$ ) cannot be accepted, while the trace statistics and Max-Eigen statistics in all six examined models accept null hypothesis on the existence of no more than two cointegration vectors. Such obtained results imply the existence of long-term connection of variables in models 1, 2, 3, 4, 5, and 6.

*Table 5. Panel cointegration test results*

Johansen- Fisher Panel cointegration test Model 1: $gdppc_{it}$ $gippc_{it}$ $open_{it}$			
	$r=0$	$r\leq 1$	$r\leq 2$
Trace statistic	104.6*	33.58*	9.74
Max-Eigen statistic	88.08*	35.35*	9.74
Johansen- Fisher Panel cointegration test Model 2: $gdppc_{it}$ $gippc\_life_{it}$ $open_{it}$			
	$r=0$	$r\leq 1$	$r\leq 2$
Trace statistic	101.4*	44.32*	15.24
Max-Eigen statistic	79.24*	26.91*	15.24
Johansen- Fisher Panel cointegration test Model 3: $gdppc_{it}$ $gippc\_non-life_{it}$ $open_{it}$			
	$r=0$	$r\leq 1$	$r\leq 2$
Trace statistic	95.43*	31.57*	9.35
Max-Eigen statistic	79.93*	33.91*	9.35
Johansen- Fisher Panel cointegration test Model 4: $gdppc_{it}$ $pene_{it}$ $open_{it}$			
	$r=0$	$r\leq 1$	$r\leq 2$
Trace statistic	47.29*	26.44*	10.86
Max-Eigen statistic	29.13*	26.96*	10.86
Johansen- Fisher Panel cointegration test Model 5: $gdppc_{it}$ $pene\_life_{it}$ $open_{it}$			
	$r=0$	$r\leq 1$	$r\leq 2$
Trace statistic	101*	29.46**	16.04
Max-Eigen statistic	97.65*	24.29**	16.04
Johansen- Fisher Panel cointegration test Model 6: $gdppc_{it}$ $pene\_non-life_{it}$ $open_{it}$			
	$r=0$	$r\leq 1$	$r\leq 2$
Trace statistic	45.45*	16.78	14.37
Max-Eigen statistic	41.14*	15.07	14.37

*Notes:* The Johansen- Fisher test has  $\chi^2$  distribution with  $2N$  degrees of freedom.

*Source:* Author's calculations

When examining long-term effects that insurance sector has on economic growth, DOLS and FMOLS models were used. In Table 6, the

Table 6. DOLS and FMOLS results

Variables	DOLS Model 1:		Variables		DOLS Model 2:		Variables		DOLS Model 3:	
	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>	gdp <sub>cit</sub>
gdp <sub>cit</sub>	0.64*	0.58*	0.77*	gippc_lif <sub>cit</sub>	0.23*	0.22	0.57*	gippc_non-lif <sub>cit</sub>	0.71*	0.56*
open <sub>it</sub>	1.12*	1.36*	1.33*	open <sub>it</sub>	0.75*	0.48*	1.28*	open <sub>it</sub>	1.38*	1.53*
Variables	FMOLS Model 1:		Variables		FMOLS Model 2:		Variables		FMOLS Model 3:	
gdp <sub>cit</sub>	0.76*	0.71*	0.77*	gippc_lif <sub>cit</sub>	0.25*	0.15	0.41*	gippc_non-lif <sub>cit</sub>	0.83*	0.75*
open <sub>it</sub>	0.90*	0.76*	0.89*	open <sub>it</sub>	0.58*	0.54**	0.66*	open <sub>it</sub>	1.11*	0.95*
Variables	DOLS Model 4:		Variables		DOLS Model 5:		Variables		DOLS Model 6:	
gdp <sub>cit</sub>	0.33	-0.25	-0.90	pene_lif <sub>cit</sub>	0.17*	0.10**	0.56*	pene_non-lif <sub>cit</sub>	-0.43	-0.58*
open <sub>it</sub>	1.06*	1.01*	0.13	open <sub>it</sub>	0.95*	1.03*	1.21*	open <sub>it</sub>	0.88	0.84
Variables	FMOLS Model 4:		Variables		FMOLS Model 5:		Variables		FMOLS Model 6:	
gdp <sub>cit</sub>	0.23	-0.04	0.36	pene_lif <sub>cit</sub>	0.31*	0.28*	0.44**	pene_non-lif <sub>cit</sub>	-1.23*	-1.22*
open <sub>it</sub>	1.17*	0.98*	0.23*	open <sub>it</sub>	0.58*	0.47*	0.59	open <sub>it</sub>	0.60*	0.58*

Notes: \*Denotes the significant at 1% levels, \*\*Denotes the significant at 5% levels.

\*\*\*Denotes the significant at 10% levels. Source: Author's calculations



results of long-term effects of insurance sector and trade openness on the economic growth are shown. It is indicative that a positive and statistically significant connection between economic growth and parameters related to the insurance sector is positive. If Model 1 is observed, according to DOLS model, it is noticeable that the increase of *gippc* leads to the growth of *gdppc*, and the appropriate coefficient of elasticity ranges within 0.58-0.77. FMOLS model confirms the positive connection, but the appropriate coefficient ranges within 0.71-0.76. In Model 2, the effect of *gippc\_life* in DOLS model ranges within 0.22-0.57, while in FMOLS model the appropriate coefficient ranges within 0.25-0.41. In the Model 3, *gippc\_non-life* realize positive impact on *gdppc*, and it is expressed by the elasticity coefficient ranging within 0.56-0.70 in DOLS model, and 0.68-0.83 in FMOLS model. It should be mentioned that the insurance density in all observed countries grew in the analyzed period, and in those with a low starting position, it grew even dramatically. This is very important in the context of further fostering of economic activity in these countries. The structure of this indicator, i.e. clear dominant position of non-life insurance, speaks in favor of the established more significant impact of non-life insurance compared to life insurance.

Unlike Models 1, 2 and 3 that give quite unambiguous results, Models 4, 5, and 6 have no such characteristics. Primarily, in Model 4, no statistically significant connection between *pene* and *gdppc* was established, both in DOLS and in FMOLS model. The results of Model 5 are the only ones in accordance with those in Models 1-3 and it was shown that *pene\_life* exerts positive and statistically significant impact on *gdppc*. That influence is reflected in DOLS model in the elasticity coefficient, which ranges within 0.10-0.56, and in FMOLS model ranges within 0.28-0.44. On the other hand, in Model 6, the negative effect of *pene\_non-life* on *gdppc* was established, where by applying DOLS model it was shown that one-percent increase of *pene\_non-life* leads to fall in range within  $-0.43$ - $0.87$ , while in FMOLS model the appropriate coefficient also has negative sign and it ranges within  $-1.22$ - $1.65$ .

The structure of penetration rate reflects a clear dominance of non-life insurance compared to life insurance in observed countries. Still, the largest portion of the non-life insurance premium is realized based on compulsory insurances (for example, in Serbia 33%, in Montenegro 40%, in North Macedonia 43%, and in Bosnia and Herzegovina even 50% of total premium in 2019 was realized based on only one type of insurance – motor third party liability insurance). Thus, non-life insurance can be related to the aspect of necessary (of even compulsory) goods, which implies that each shift of life insurance is a more probable indicator of the increase of life standard of the members of social community. Until the end of the analyzed period, the relationship of life and non-life insurance in observed countries, measured by penetration rate, changed in favor of

life insurance. By observing the opposite direction, a significant impact of economic growth on the insurance market was established only in case of life insurance penetration rate. Non-life insurance in stated countries was, to a significant extent, conditioned by regulatory obligation of insurance of individual activities. Thus, life insurance, due to its voluntary nature, in emerging countries, is to some extent treated as a lucrative good as well, so that it is in direct dependence on the degree of development of the social community itself.

Table 7 shows the results of panel causality developed by Dumitrescu & Hurlin (2012) for all 6 models. The test is based on the null hypothesis that a selected variable does not cause the change of other variable. It was also established that changes in insurance density lead to the changes in economic growth, i.e.  $gippc$ ,  $gippc\_life$ , and  $gippc\_non-life$  cause changes in  $gdppc$ . The obtained results are statistically significant, with the

*Table 7. Panel causality test results*

Pairwise Dumitrescu Hurlin Panel Causality Test			
Lag 1 is determined by Akaike Information Criterion			
$H_0$	W- Statistics	Zbar- Statistics	Probability
$open_{it}$ does not homogeneously cause $gdppc_{it}$	5.48	5.05	0.00*
$gdppc_{it}$ does not homogeneously cause $open_{it}$	1.74	0.61	0.54
$gippc_{it}$ does not homogeneously cause $gdppc_{it}$	8.36	8.46	0.00*
$gdppc_{it}$ does not homogeneously cause $gippc_{it}$	2.43	1.4	0.15
$gippc_{it}$ does not homogeneously cause $open_{it}$	2.84	1.92	0.06***
$open_{it}$ does not homogeneously cause $gippc_{it}$	2.35	1.33	0.18
$gippc\_life_{it}$ does not homogeneously cause $gdppc_{it}$	6.93	6.77	0.00*
$gdppc_{it}$ does not homogeneously cause $gippc\_life_{it}$	2.00	0.92	0.36
$gippc\_life_{it}$ does not homogeneously cause $open_{it}$	2.69	1.74	0.08***
$open_{it}$ does not homogeneously cause $gippc\_life_{it}$	2.92	2.01	0.04**
$gippc\_non-life_{it}$ does not homogeneously cause $gdppc_{it}$	8.51	8.64	0.00*
$gdppc_{it}$ does not homogeneously cause $gippc\_non-life_{it}$	1.61	0.46	0.64
$gippc\_non-life_{it}$ does not homogeneously cause $open_{it}$	3.37	2.54	0.01**
$open_{it}$ does not homogeneously cause $gippc\_non-life_{it}$	1.55	0.39	0.70
$pene_{it}$ does not homogeneously cause $gdppc_{it}$	7.81	7.81	0.00*
$gdppc_{it}$ does not homogeneously cause $pene_{it}$	0.66	-0.66	0.51
$pene_{it}$ does not homogeneously cause $open_{it}$	2.30	1.28	0.20
$open_{it}$ does not homogeneously cause $pene_{it}$	1.23	0.02	0.99
$pene\_life_{it}$ does not homogeneously cause $gdppc_{it}$	2.35	1.33	0.18
$gdppc_{it}$ does not homogeneously cause $pene\_life_{it}$	1.74	0.61	0.54
$pene\_life_{it}$ does not homogeneously cause $open_{it}$	4.69	4.11	0.00*
$open_{it}$ does not homogeneously cause $pene\_life_{it}$	1.53	0.36	0.71
$pene\_non-life_{it}$ does not homogeneously cause $gdppc_{it}$	4.36	3.71	0.00*
$gdppc_{it}$ does not homogeneously cause $pene\_non-life_{it}$	0.43	-0.94	0.35
$pene\_non-life_{it}$ does not homogeneously cause $open_{it}$	2.12	1.07	0.28
$open_{it}$ does not homogeneously cause $pene\_non-life_{it}$	2.04	0.97	0.33

Notes: \*Denotes the significant at 1% levels. \*\*Denotes the significant at 5% levels.

\*\*\* Denotes the significant at 10% levels. Source: Author's calculations

significance level of 1%. However, the connection of mentioned variables is one-way and vice versa is not valid, i.e. no connection that goes from economic growth to the insurance sector was established. Similar to that, the changes in penetration rate also lead to changes in economic growth. Here too is the connection unilateral, except in case of *pene\_life*, where the existence of causality with *gdppc* was not established.

### *CONCLUSION*

The paper examined the nature of the relationship of the insurance sector, as a part of the financial sector, and total economic activity, on the basis of panel model in six countries of former Yugoslavia for the period 2005-2019. In order to include key trends on the market insurance, in the analysis penetration rate and insurance density were used, both in total display and segmented to sectors of life and non-life insurance. Six different models were tested, and as an independent variable gross domestic product per capita was used, while the degree of trade openness of national economy was used as the control variable. Empirical results have shown that all analyzed variables are stationary after the conversion into the first difference (i.e.  $I(1)$ ), as well as that in all six models the cointegration (long-term connection) of insurance sector and economic growth was established.

By analyzing long-term effects, we noticed that the density of insurance has positive and statistically significant impact on economic growth, which is expressed by the corresponding coefficient of elasticity in the range of 0.64-0.77 (depending on the applied technique). As the confirmation of robustness, the corresponding causality test has shown unidirectional causality, i.e. that the changes in insurance sector, measured by the density of insurance, cause the changes in economic growth. Also, it has been established that the density of non-life insurance has greater impact on economic activity in relation to the density of life insurance.

The results of this study can provide initial basis and certain recommendation for further development of insurance sector. Financial sectors in the analyzed countries are dominated by bank services while insurance services are the second most important. In that sense, there is a significant room for improvement in this area, and considering significant positive effects that the insurance sector has on economic growth, the holders of economic policy should pay special attention to formulating corresponding regulations and legal framework that would provide free insurance sector development, so that its basic (and derived) functions would be realized at a higher level and so that in the area of financial services it would provide significant support to bank sector. The most evident room for improvement is certainly the sector of life insurance, even in the countries that are full members of the EU. That could be

achieved by emphasizing the importance of insurance in the context of reduction of uncertainty that the future can bring, by establishing efficient service prices, as well as by establishing a greater level of trust for the insurance sector. However, one should bear in mind the fact that the image of the average insured person in the analyzed countries corresponds to the total state of society, that implies the level of life standard, the manner of life, the level of education and culture. Thus, in the following research it would be interesting and significant to focus on the established feedback of changes in insurance and general economic activities and finding optimal balance between them.

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## РАЗВОЈ ТРЖИШТА ОСИГУРАЊА И ЕКОНОМСКИ РАСТ: ПРИКАЗ ЗЕМАЉА РЕГИОНА ЗАПАДНОГ БАЛКАНА

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### Резиме

У раду се испитује међусобна условљеност параметара на тржишту осигурања и економског раста на специфичном подручју бивше Југославије, и укључује националне економије Словеније, Хрватске, Србије, Црне Горе, Босне и Херцеговине и Северне Македоније. Ове земље деле значајну међусобну повезаност како са економског, тако и са историјског становишта. После тродеценијског транзиционог периода након распада бивше заједничке државе, ове земље данас се налазе у различитим статусима у односу на Европску Унију (ЕУ), с обзиром да су поред земаља чланица, заступљене и оне у статусима кандидата и потенцијалних кандидата за приступање истој. Њихова тржишта финансијских услуга су релативно слична, с обзиром да су изразито банкоцентрична, а да су сектори осигурања по значају на другом месту и да их карактерише перманентан развој.

Временски хоризонт посматрања обухвата период 2005-2019. године, а као одговарајући методолошки оквир коришћена је економетрија панела. Како би се обухватили кључни трендови на тржишту осигурања, у анализи су коришћене тржишна пенетрација и густина осигурања, како у свеукупном приказу, тако и сегментирано на секторе животног и неживотног осигурања. Тестирано је шест различитих модела, а као независна променљива употребљен је бруто домаћи производ по глави становника, док је као контролна варијабла коришћен степен трговинске отворености националне економије. Емпиријски резултати су показали да су све анализирани варијабле стационарне након конвертовања у прву диференцу  $I(1)$ . Пропратни тестови коинтеграције (Johansen-Fisher) и дугорочних ефеката (DOLS и FMOLS) су показали да су сектор осигурања и економски раст дугорочно повезани, као и да сектор осигурања врши позитиван и статистички значајан утицај на економски раст. Анализирајући дугорочне ефекте, показано је да густина осигурања врши позитиван и статистички значајан утицај на економски раст, који је изражен одговарајућим коефицијентом еластичности у распону 0.64-0.77 (у зависности од примењене технике). Као потврда робусности, одговарајући тест каузалности је показао једносмерну каузалност, односно да промене у сектору осигурања, мерене густином осигурања, изазивају промене у економском расту. Такође, установљено је да густина неживотног осигурања врши већи утицај на економску активност у односу на густину животног осигурања.

Резултати ове студије могу дати полазну основу, и неку врсту препорука, за даљи развој сектора осигурања у анализираном региону. Постоји значајан простор за напредак на овом пољу, а узевши у обзир значајне позитивне ефекте које сектор осигурања има на економски раст, носиоци економске политике би посебну пажњу требало да обрате на формулисање одговарајуће регулативе и законског оквира који би омогућио слободан развој сектора осигурања, а тиме и раст привредне активности.

**ECONOMIC GROWTH AND TAX COMPONENTS:  
AN ANALYSIS OF CORPORATE INCOME TAX  
INCENTIVES AND THEIR IMPACT  
ON THE ECONOMIC GROWTH IN SERBIA**

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**Abstract**

The paper empirically examines the effects of incentives in the domain of corporate income tax in Serbia between 2007 and 2018. The main aim of the paper is to test for effects of tax incentives on economic growth. To achieve the stated aim, a dataset consisting of 10 indicators will be analyzed by using the Principal Component Analysis method. This method allows the initial set of predictors to be transformed into a set of uncorrelated components, and allows linear regression to be performed. In accordance with the results of the analysis, the proposal for parametric reform should be based on the abolition of certain tax incentives in order to increase the efficiency of corporate income tax and improve business conditions. The analyzed data has shown that certain corporate tax incentives have had a significant effect on economic growth. Taking into consideration the adverse effects of the coronavirus crisis, the authors give recommendations on what should be developed in the domain of corporate income tax.

**Key words:** corporate income tax, tax incentives, economic growth, tax reforms, Serbia

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## **ЕКОНОМСКИ РАСТ И ПОРЕСКЕ КОМПОНЕНТЕ: АНАЛИЗА ПОДСТИЦАЈА ПОРЕЗА НА ДОБИТ ПРЕДУЗЕЋА И ЊИХОВ УТИЦАЈ НА ЕКОНОМСКИ РАСТ У СРБИЈИ**

### **Апстракт**

У раду се емпиријски испитују ефекти подстицаја у домену пореза на добит правних лица у Србији у периоду између 2007. и 2018. године. Основни циљ рада је испитивање ефеката пореских подстицаја на економски раст. Да би се постигао наведени циљ, скуп података који се састоји од 10 индикатора биће анализиран методом Анализа главних компоненти. Ова метода омогућава да се почетни скуп предиктора трансформише у скуп некорелираних компонента и спроведе линеарна регресија. У складу са резултатима анализе, предлог параметарске реформе требало би да се заснива на укидању одређених пореских подстицаја у циљу повећања ефикасности пореза на добит предузећа и побољшања услова пословања. Утврђено је да су одређени подстицаји у систему опорезивања добити правних лица имали значајан утицај на економски раст. У светлу негативних ефеката кризе изазване појавом епидемије коронавируса, аутори препоручују шта је потребно развити у домену пореза на добит предузећа.

**Кључне речи:** порез на добит предузећа, порески подстицаји, економски раст, пореске реформе, Србија

### *INTRODUCTION*

The global economic crisis initiated by the covid-19 pandemic outbreak has influenced the whole world. During economic downturns, states and local governments come under stress. Although the development of the disease is uncertain, negative reflections on the economic development of countries are inevitable. In order to mitigate the effects of the economic crisis, this paper explores the potential opportunities for corporate income tax reform in Serbia. The subject of the research are corporate income tax incentives, and the aim is to identify the major tax incentives contributing to economic growth.

Since a number the ongoing pandemic's outcomes of are yet to come to light, we cannot know whether the monetary and fiscal responses to the Covid-19 crisis will be sufficient for the recovery of Serbian economy.<sup>1</sup> Indicatively, Serbia's economic growth is declining. At the mo-

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<sup>1</sup> After the pandemic outbreak, most central banks implemented a new monetary policy. Central banks' main goal was to stimulate lending by cutting interest rates. European Central Bank and the FED had to provide large amounts of money for the world economy since standard monetary policy measures did not produce the expected results. Consequently, countries started implementing tax reforms. The National Bank of Serbia reduced interest rates which led to a minor growth in lending activity and loan servicing was suspended for the next three months as the next measure, even so, many businesses had to suspend their production or even cease



ment, the key economic growth driver are domestic companies. Reducing income tax is a more acceptable and effective solution for reform because it lowers production costs and needs to be addressed as soon as possible. According to the opinion of the Serbian tax policy creators, temporary tax incentives for some sectors can mitigate adverse pandemic effects. Adverse pandemic effects on the economy would be mitigated if taxes were delayed. The fact is that the most endangered sectors are small and medium-sized enterprises, catering, transport, etc. Bearing in mind that the pandemic did not hit all parts of the economy equally, aid should be directed towards these sectors. Tax policy can prevent the employment rate from deviating too much from the rate recorded before the outbreak of the pandemic in Serbia. The additional problem for Serbia is that the main suppliers of Serbian domestic industry are China and Italy, and a large amount of goods are imported from these countries (Kujis, 2020).

Corporate income tax in the current tax system belongs to the category of “real” taxes. Accordingly, it is levied on profits. In addition, this form of tax is also the basic form of direct taxation of legal entities, whose aim, in addition to securing fiscal revenues, is to realize its economic and social function. However, there are discussions in academic literature about the justification of its existence and the most common argument is that corporations actually represent artificial legal entities. This argument is based on the fact that income taxes cannot burden a business (Rosen & Gayer, 2009; Atkinson & Stiglitz, 1980; Myles, 1995). However, despite discussions on the justifiability of its existence, corporate income tax represents the most significant tax form in the tax systems (Đurović Todorović, et al., 2019, p. 156). This tax form does not have a high collection capacity. But, it can act as a stabilization and development instrument. Corporate income tax can be the driver of development and economic growth in one country. As an instrument of the fiscal system of great importance (Delgado, Fernandez-Rodriguez & Martinez-Arias, 2014, p. 487), the corporate income tax can also affect relative prices, investments, etc. (Arsić & Randelović, 2017).

In order to stimulate economic growth and mitigate the consequences of covid-19, it is necessary to examine whether corporate income tax can be an effective tax tool. Therefore, it is necessary to discover its instruments that can act in this direction. Considering that tax incentives are an element of this tax form, it is necessary to find out which tax incentives can affect these goals. Based on our analysis, the survey results may form the basis for tax reform of all countries affected by the pandemic. The paper is organized into several sections. Section 2 provides a brief

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operations. Serbia's new fiscal policy provided 5.1 billion (11% of GDP) to fight against the pandemic out of which 1.3 billion euros have been earmarked for the implementation of tax measures.

background on the relation between corporate income tax incentives and economic growth. Section 3 describes the data for Serbia, and research methodology. Section 4 presents the potential measures for corporate income tax reforms.

### *LITERATURE ON TAX INCENTIVES*

The outbreak of covid-19 has reinforced the idea that, in an uncertain world, the government plays an important role in information sharing globally. In Serbia, potential tax revenues are significantly reduced due to tax incentives offering, which is inevitable for all countries that apply this tax policy instrument. In order to attract investors and encourage economic growth, countries around the world use tax incentives. Nevertheless, the empirical evidence of studies of economic effectiveness brings the tax incentives under question.

Ineffective tax incentives may reduce the tax revenues and cannot improve the business environment. Therefore, governments often use tax rates as an instrument of tax competition. Moreover, the governments' approach with lowering the corporate income tax rate in order to attract investors (the "race to the bottom" phenomenon) (Arsić & Randelović, 2017; Đurović Todorović et al., 2019). This also initiated the "corporate income tax rate-revenue paradox." Namely, "some countries have seen their ratio of corporate tax revenue to gross domestic product increase despite reductions in their corporate tax rates" (Ohno et al., 2015, p. 333). Thus, it is very important to conduct detailed analyses, especially during post-crisis period.

Corporate income tax is an instrument of active fiscal policy, and some of its basic elements are tax incentives and reliefs. Corporate tax is defined as a "fundamental tool of the fiscal system due to its high collection capacity, its sensitivity to the economic cycle, and the influence that it can have on economic decisions of enterprises" (Delgado et al., 2014, p. 487).

However, in academic literature, there are divided views of theorists on the effectiveness of the corporate income tax incentives. The effectiveness of tax incentives is widely discussed in academic research. Fujii & Huffman (2008) research fiscal incentives in Mexican companies. The authors examine the effectiveness of tax incentives. They conclude that tax incentives can affect domestic firms. The authors pay special attention to the introduction of tax incentives in the Mexican tax system and conclude that they are not very well established. According to Azhar and Sharif (1975) fiscal incentives are an effective instrument for attracting resources in developing countries. These issues are discussed in their publication based on the example of the Pakistan tax system. The study analyzes the period between 1959 and 1975. The authors used econometric tools and concluded that tax incentives in Pakistan were used in the

less developed regions. They also concluded that, when introducing an incentive to encourage industry in the industrial sector, the overall level of investment increases. Mintz (1990) explained that “governments of developing countries commonly adopt tax holidays to encourage investments and investigate tax incentives provided by corporate income tax and its importance”. As Shah explains, “investment promotion is an important objective of tax policy in developing and industrial countries alike” (1995). Shah (1995) concluded that policymakers actively promote incentives for investments, but in developing countries, there is not enough information about their effectiveness.

Holland and Vann (1998) identified that developing countries introduce corporate tax incentives for various problems. Very often, tax incentives can be a solution for underdeveloped infrastructure in the country, inadequate tax legislation or underdeveloped administration. Zee et al. (2002) note that there is no empirical evidence of the effectiveness of corporate income tax incentives in stimulating investments (Zee et al, 2002, p. 1947). The authors view tax incentives from the standpoint of transparency. They found that the transparency in implementing tax incentives must be graded in many countries. In the work by Klemm and Parys (2009) the authors studied incentives as a tax competition tool. The authors identified a considerable positive effect of tax incentives on FDI. Their econometric analysis is based on data from 40 Latin American, the Caribbean, and African countries. The authors used data for the period between 1985 and 2004. They conducted a panel analysis and found that lower tax rates and longer tax holidays can be effective instruments in attracting investment. The importance of studying the advantages of tax incentives in Western Balkan countries is analyzed in the work by Šimović and Žaja (2010). The authors analyzed tax rates, tax holidays, and other investment incentives. The authors pay special attention to the presence of corporate income tax incentives and believe that their establishment is very important for the tax system (Šimović & Žaja, 2010, p. 111). Mauda and Saidu (2019) analyzed the effects of tax incentives at the micro-level. In their research, the authors examined the effects of tax incentives on financial performance. In the author's opinion tax incentives at the level of enterprises are very important. Their work analyzed 7 companies and observed a period of 17 years. Using the precise approach based on correlation and regression analysis, the authors give the opinion of introducing more incentives for investing.

Lee and Gordon (2005) found a significant influence of corporate tax rates on economic growth. They emphasized that the structure of the tax system can affect economic growth rates. Also, they found that tax incentives may be effective at stimulating innovation. However, they were not able to find any information on the size of incentives. Bearing in mind that the tax policy plays a crucial role in the growth process, Lipsey and

Chrystal (2007) researched tax incentives. In their study, they noticed that studies conducted in the recent past prove that the tax incentives offered have not resulted in an increase in growth and investments.

Šimović and Bratić (2009) studied the influence of tax incentives on economic growth in Croatia. The multiple regression methods allowed the authors to evaluate the influence of tax incentives in Croatia. Their study identified a considerable positive effect of tax incentives on economic growth in Croatia. According to Kovač (2003), the effectiveness of tax incentives in attracting FDI must be based on a created favorable business climate in one country. Kandie (2020) researched the influence of tax incentives on the overall economic performance over the last decade. Alegana (2014) took a step further and investigated the effects of corporate income tax incentives on economic growth. She concluded that the corporate income tax incentives alone do not increase economic growth, and explored an inverse relationship between the GDP growth rate and tax incentives. Also, although corporate income tax incentives may encourage investments, they do not drive economic growth because the growth rate is affected by many other factors. The author recommends that the government of Kenya should consider rationalizing tax incentives.

Skott (2021) found that the growth rate also affects the debt ratio. In other words, the higher the growth rate, *ceteris paribus*, the lower the asymptomatic debt ratio. So, this can be an incentive for the countries affected by Covid-19 to analyze the determinants of economic growth. In his study he explained the dynamic effects on the debt ratio of a rise in economic growth. Chugunov et al. (2021) explained the methods which can be used by policymakers in the creation of fiscal policy. The authors note that fiscal policy can be an effective tool in the age of covid-19 for mitigating the post-crisis consequences.

Siregar and Patunru (2021) analyzed data from twenty-two partner countries in the period between 1999 and 2018. They analyzed the impact of tax incentives on foreign direct investment in Indonesia. The main findings have shown the negative effects of tax incentives. In other words, as tax incentives increase, the foreign direct investment flow decreases significantly.

Akanbi (2020) investigated the impact of tax collection and incentives on economic growth. According to the author, taxation is an important tool in achieving economic growth. The study objective was to assess the impact of the incentives on the economic growth in Nigeria. Empirical results confirm that tax revenue negatively effects economic growth. Therefore, the government must increase tax incentives:

“Increasing tax incentives in the productive sectors would go a long way in reducing the cost of production thereby increasing the productivity in these sectors because of the positive multiplier effects on the economic growth” (Akanbi, 2020, p. 174).

In order to find ways to address the problems caused by the covid-19 pandemic, we also investigate does temporary corporate tax incentives can be an effective instrument. We analyzed the performance of temporary incentives whose introduction is limited to a certain period of time. In the opinion of some authors, these incentives are the key condition and crucial mechanisms of growth for domestic companies in the age of economic crisis (Boadway & Shah, 1995).

### *DATA AND METHODOLOGY*

Corporate income tax incentives are of great importance for tax expenditures. Therefore, the survey includes all corporate income tax incentives in Serbia. With a view towards parametric reform of corporate tax incentives, we reviewed the structure of tax incentives that were applied in the period between 2007 and 2018.

The analysis was performed using primary data obtained from the Tax Administration department of the Ministry of Finance of the Republic of Serbia. The data which has been analyzed is not transparent and they are from internal statistical tax reports. Thus, the research includes analysis of corporate income tax incentives for the period between 2007 and 2018 in Serbia.

An important issue in implementing tax incentives is stimulating economic activity. According to financial theory, corporate income tax incentives play an important role in investment decisions. Also, incentives have an effect on economic growth, investment and export. Corporate income tax incentives are closely related to reducing effective corporate income tax rates. Thus, it is very difficult to evaluate their effectiveness. The following classification of tax incentives are used as basic in literature:

1. reduced corporate income tax rates;
2. tax holidays and various other incentives;
3. investment incentives in the broader sense, which imply incentives like accelerated depreciation, investment allowances and investment tax credits (Šimović & Žaja, 2010, p. 111).

Table 1 shows corporate income tax incentives in Serbia in the period between 2007 and 2020. Serbia implements a relatively large number of corporate income tax incentives, and in accordance with worldwide practice, Serbia has the predominant trend of tax holidays.

The presence of numerous paradoxes in the literature related to tax incentives initiated the examination of the incentives' efficiency. Since the introduction of tax incentives is associated with stimulating economic growth, it is logical that they are positively correlated with them. In order to examine their effects on the economic growth in Serbia, and thus examine their efficiency, an empirical analysis has been conducted.

*Table 1. Tax incentives in Serbia*

No.	Article of the Law	Description	Period of application
1.	Article 45 (art45)	Tax exemption from payment of income tax on the income from the subject of concession (in case of concession investment)	2007-2009
2.	Article 46 (art46)	Tax exemption of legal entities for vocational training, vocational rehabilitation and employment of disabled persons	2007-2020
3.	Article 47 (art47)	Amount of deduction for profits made in a newly established business unit in underdeveloped areas	2007-2012
4.	Article 48 (art48)	Reduction of accrued income tax on taxpayers who make investments in fixed assets owned by them	2007-2018
5.	Article 48a (art48a)	Reduction of the calculated tax on the realized profit of a taxpayer who makes investments in fixed assets in their own possession mainly performing one of the activities mentioned in Article 48a	2007-2018
6.	Article 49 (art49)	Amount of deduction for the employment of full-time workers	2007-2009
7.	Article 50 (art50)	Tax exemption for investing in fixed assets in the amount of more than 600 million or one billion dinars and additional permanent employment of at least 100 persons	2007-2020
8.	Article 50a (art50a)	Tax exemption for investing in fixed assets in the amount of more than 800 million or one billion dinars and additional permanent employment of at least 100 persons	2007-2020
9.	Article 50b (art50b)	Tax exemption for profits made by a taxpayer engaged in an underdeveloped area	2010-2017
10.	Article 51 (art51)	Deduction of tax on the amount of income tax paid by operating in another country	2007-2020
11.	Article 52 (art52)	Deduction of income tax paid by a non-resident branch in another country on dividend income and withholding tax on dividends paid	2007-2020
12.	Impairment under the provisions of the Law on Corporate Income Tax <sup>2</sup> and the Law on Corporate Income Tax <sup>3</sup>	<ul style="list-style-type: none"> <li>▪ tax incentive for a newly established legal entity established in underdeveloped areas and in free zones</li> <li>▪ tax incentive for a foreign taxpayer</li> <li>▪ tax incentive for newly employed full-time workers</li> </ul>	2007-2009
13.	Article 53a (art53a)	Reduction of accrued tax by the amount of withholding tax paid by its non-resident branch in another country on interest, royalties, fees on the lease of real estate and movable property, and dividends that do not qualify for the application of Article 52.	2010-2020

*Source:* Đurović Todorović et al. (2021)

<sup>2</sup> (Official Gazette of the RS, No. 43/94, ..., 54/99).

<sup>3</sup> (Official Gazette of the RS, No. 25 / 01, ..., 43/03).

The methodology of empirical verification involves conducting the following analyses: correlation analysis, regression analysis and factor analysis. Correlation analysis will determine the type and strength of the relationship between tax incentives and GDP. Regression analysis will provide a model with the most correlated indicators. However, this model will not include all tax incentives as indicators of corporate income tax revenues. Factor analysis will include all tax incentives and group them into factors. The model obtained in this way will form the determined components of tax incentives as independent variables.

As shown in the figure, the empirical analysis contains two levels of relation testing. In the first level, regression analysis will be applied, wherein an optimal model with predictors that are statistically significant will be obtained. However, since regression analysis excludes predictors that do not show statistical significance, but are mutually correlated, factor analysis will be conducted at the second level. Factor analysis will cover all tax incentives and provide a basis for concluding remarks. Therefore, factor analysis will be the basic statistical tool for obtaining results, while Principal Component Analysis will be used as a method of factor extraction. The data will be analyzed using the statistical package SPSS 23.0. Based on the conducted analysis, the efficiency of tax incentives will be determined and a proposal for the reform of tax incentives in Serbia will be given.

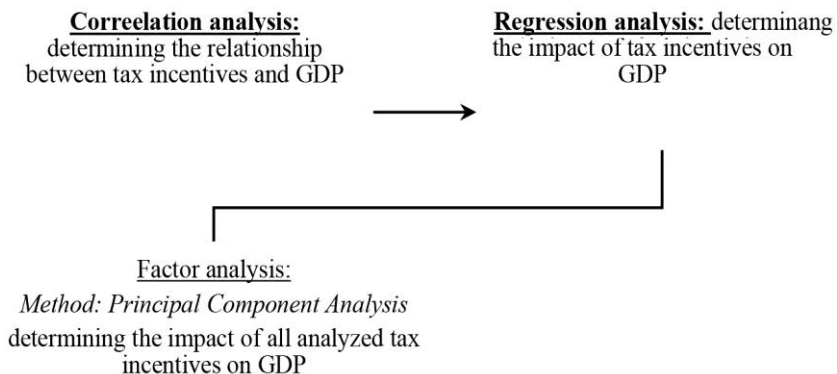


Figure 1. Methodological approach of empirical analysis

Source: Authors' presentation

## RESULTS AND DISCUSSION

The empirical examination of the relationship between tax incentives and economic growth should result in either the confirmation of their effectiveness or the confirmation of the current paradox. Correlation analysis was performed using Pearson's correlation coefficient. The Pearson test is applied to parametric quantities. Accordingly, the results of the

correlation analysis describing the relationship between tax incentives and economic growth are shown in Table 2.

*Table 2. Correlation analysis*

	art45	art46	art47	art48	art48a	art50a	art51	art52	art50b	art53a
GDP	-0,334 (0,289)	0,486 (0,109)	0,490 (0,106)	0,202 (0,529)	0,413 (0,183)	0,412 (0,183)	0,250 (0,433)	-0,159 (0,622)	0,092 (0,775)	0,184 (0,567)

Note: p value in ( )

Source: Authors' calculations

Pearson's correlation coefficient indicates that there is no statistically significant correlation between tax incentives and the dependent variable, GDP. Based on these indicators, it can be concluded that a very low level of correlation is not characterized by statistical significance. However, since such a statistical tool is not sufficient to draw conclusions, further analyses were carried out.

After all independent variables were entered and the appropriate type of multiple regression analysis was used to detect statistically significant variables, a regression model was obtained.

*Table 3. Predictive power of the model*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,990	0,981	0,929	0,74523

Dependent variable: GDP

Predictors: (Constant), art53a, art50b, art45, art47, art48a, art52, art51, art50a

Source: Authors' calculations

The optimal regression model consisting of 8 predictors explains 99% of the variance of the dependent variable. The remaining 2 predictors do not have a statistically significant individual contribution to the prediction model. The obtained regression model as a whole has a statistically significant predictive power (Sig. = 0,017).

Based on the determined statistical significance of the model, the results of the regression analysis are shown in Table 4.

The results of the estimated regression model show that the tax incentives determined by Articles 45, 48a, 50a, 50b, 51, 52 of the Law on Corporate Income Tax are statistically significant in explaining the changes in economic growth rate. The significance level obtained with this model is 5%.

The results of the regression model show a positive statistically significant relationship between the tax incentive defined in Article 45 of the Law on Corporate Income Tax (Article 45) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 45 of the Law on Corporate Income Tax increases by one



million dinars, the real GDP growth rate will increase by 0.11 million dinars, *ceteris paribus* ( $p < 0.05$ ).

*Table 4. Estimated regression coefficients*

Variables	Unstandardized Coefficients		Standardized	t	Sig.	
	B	Std. Error	Coefficients Beta			
1	Constant	-5.771773601673		1.124	-5.133	.014
	art45	0.000000110468	.705	.000	3.664	.035
	art47	0.000000032088	.317	.000	2.997	.058
	art48a	0.000000002779	1.029	.000	6.986	.006
	art50a	0.000000002970	2.397	.000	4.513	.020
	art50b	0.000000056301	1.093	.000	4.566	.020
	art51	-0.000000074528	-1.461	.000	-4.638	.019
	art52	-0.000000004444	-.778	.000	-4.988	.015
	art53a	-0.000000039806	-1.142	.000	-2.466	.090

Dependent variable: GDP  
*Source:* Authors' calculations

The results of the regression model show a positive statistically significant relationship between the tax incentive defined in Article 47 of the Law on Corporate Income Tax (Article 47) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 47 of the Law on Corporate Income Tax increases by one million dinars, the GDP will increase by 0.03 million dinars, *ceteris paribus* ( $p < 0.10$ ).

The results of the regression model show a positive statistically significant relationship between the tax incentive defined in Article 48a of the Law on Corporate Income Tax (Article 48a) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 48a of the Law on Corporate Income Tax increases by one million dinars, the GDP will increase by 0.003 million dinars, *ceteris paribus* ( $p < 0.01$ ).

The results of the regression model show a positive statistically significant relationship between the tax incentive defined in Article 50a of the Law on Corporate Income Tax (Article 50a) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 50a of the Law on Corporate Income Tax increases by one million dinars, the GDP will increase by 0.003 million dinars, *ceteris paribus* ( $p < 0.05$ ).

The results of the regression model show a positive statistically significant relationship between the tax incentive defined in Article 50b of the Law on Corporate Income Tax (Article 50b) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 50b of the Law on Corporate Income Tax increas-

es by one million dinars, the GDP will increase by 0.06 million dinars, *ceteris paribus* ( $p < 0.05$ ).

The results of the regression model show a negative statistically significant relationship between the tax incentive defined in Article 51 of the Law on Corporate Income Tax (Article 51) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 51 of the Law on Corporate Income Tax increases by one million dinars, the GDP will decrease by 0.07 million dinars, *ceteris paribus* ( $p < 0.05$ ).

The results of the regression model show a negative statistically significant relationship between the tax incentive defined in Article 52 of the Law on Corporate Income Tax (Article 52) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 52 of the Law on Corporate Income Tax increases by one million dinars, the GDP will decrease by 0.004 million dinars, *ceteris paribus* ( $p < 0.05$ ).

The results of the regression model show a negative statistically significant relationship between the tax incentive defined in Article 53a of the Law on Corporate Income Tax (Article 53a) and the real GDP growth rate (GDP). Namely, if the amount of incentives used by taxpayers pursuant to Article 53a of the Law on Corporate Income Tax increases by one million dinars, the GDP will decrease by 0.04 million dinars, *ceteris paribus* ( $p < 0.05$ ).

Therefore, based on these results, a regression equation can be formulated as follows:

$$\text{GDP} = -5,7717 + 0,11 * \text{art45} + 0,03 * \text{art47} + 0,003 * \text{art48a} + 0,003 * \text{art50a} + 0,006 * \text{art50b} - 0,07 * \text{art51} - 0,004 * \text{art52} - 0,04 * \text{art53a} + \varepsilon \quad (1)$$

The amounts of tax incentives in the equation are stated in millions of dinars. The conducted analysis points to the need to conduct further empirical examinations before making final conclusions about the analyzed predictors. Therefore, it is necessary to conduct an appropriate analysis in which all of the independent predictors will be included. Further implications of independent predictors are represented by factor analysis.

We continued the analysis by applying factor analysis, in which all tax incentives were included in order to measure their efficiency and give final results. However, dimensionality was reduced. The analysis determined the linear combination of components with maximum variance.

The results of the analysis of the main components are shown in the Data Appendix. Therefore, based on the matrix of factor coefficients and the application of the backward selection method, the optimal prediction model, composed of all analyzed predictors, was obtained.

The relationship between economic growth and the observed predictors, whose influence is observed through four main components, i.e. factors F1, F2, F3 and F4, was analyzed using multiple linear regression analysis. Based on the regression analysis, a regression model that analyzes the impact of all tax incentives, i.e. factors that are explained by tax incentives, was obtained. By analyzing the individual relationships of each factor and the dependent variable, the predictive model of linear regression was determined.

This model explains 61.6% of the variance of the dependent variable.

*Table 5. Predictive power of the model*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,785	0,616	0,472	2,02995

Dependent variable: GDP  
 Predictors: F 1, F 2, F 3, F 4.  
 Source: Authors' calculations

The obtained regression models as a whole have a statistically significant predictive power (Sig. = 0.044).

Based on the determined significance, the results of the regression analysis are shown in Table 6:

*Table 6. Estimated regression coefficients*

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
1 Constant	2.025	.586		3.456	.009
F1	1.417	.612	.507	2.315	.049
F2	1.019	.612	.365	1.666	.134
F3	-1.327	.612	-.475	-2.168	.062

Dependent variable: GDP  
 Source: Authors' calculations

The table shows a model that considers the tax incentives grouped as components F1, F2 and F3 as independent variables. The impact of tax incentives on economic growth was analyzed. Since the Principal Component Analysis returned standardized components, their units of measure are expressed by standard deviations. The results of the analysis show that components F1 and F3 show a statistically significant contribution to the predictive power of the regression model. The estimated values of the regression coefficients, shown in Table 6, can be expressed with the following equation:

$$GDP = 2,025 + 1,417 * F1 + 1,019 * F2 - 1,327 * F3 + \epsilon \tag{2}$$

The results of the evaluated model show that two independent variables in the model have a statistically significant effect on the dependent variable. Based on the estimated results of the regression model, we can conclude that economic growth is positively affected by one of the analyzed factors (F1) and negatively affected by another (F3). Other factors are not predictors with significant influence.

The model proved that tax incentives included in component F1 have a positive effect on economic growth ( $p < 0.05$ ), while tax incentives included in component F3 have a negative statistically significant impact on corporate income tax revenues ( $p < 0.10$ ).

Given that the first factor, or component F1, is comprised of the tax incentives defined in Articles 50a, 46 and 53a respectively, we can conclude that these incentives have positive effects on economic growth. Namely, incentives for investments (Article 50a), incentives exempting the taxpayer from paying corporate income tax for work training, professional rehabilitation and employment of disabled persons (Article 46), and the reduction based on the elimination of double taxation (Article 53a) have positive effects on the economic growth rate.

The second factor, i.e. component F3, is comprised of the tax incentives defined in Articles 47 and 52. Since the tax incentive defined in Article 47 has been abolished, the analysis is limited to only one incentive defined in Article 52. Namely, the tax incentive defined in Article 52 concerns the reduction of the calculated tax in the case of intercompany dividends. According to Article 52, paragraph 1 of the Law on Corporate Income Tax:

“Parent legal entity - resident taxpayer of the Republic may reduce the calculated corporate income tax by the amount of tax paid by its non-resident branch in another country on the profit from which dividends were paid, which are included in the income of the parent legal entity, as well as by the amount of tax after the deduction paid by the non-resident branch in another state on those dividends paid” (Law on Corporate Income Tax, 2020, Article 52, paragraph 1).

The negative effect of this tax incentive can confirm the paradox caused by tax incentives.

### *CONCLUSION*

Sharp reductions in corporate income tax rates worldwide, the ways in which the tax base is defined, tax incentives, and the rules of avoiding double taxation, caused by corporate income tax competitiveness, have all had a significant impact on economic growth. Although the tax revenue contribution of corporate income tax is limited, its importance is credited to its effects on economic flows.

This study only focused on tax incentives. The paper aimed to examine the effects of the corporate income tax incentives on the economic growth in Serbia in the period between 2007 and 2018. The findings confirm that some corporate tax incentives have a significant positive impact on economic growth. In order to mitigate the consequences of the crisis, tax reform is inevitable. It is estimated that the abolition of some corporate income tax incentives in conditions of low tax rate will contribute to a significant increase in GDP. In this way, administration costs will be also reduced. Bearing in mind that the study identified a considerable positive effect of tax incentives, it is necessary to abolish ineffective tax incentives and exemptions. The authors also examine how tax system can become more neutral and fairer. This means that it is necessary to evaluate the effectiveness of new tax incentives before their introduction.

Based on the estimated results of the regression model, we can conclude that economic growth is positively affected by one of the analyzed factors and negatively affected by another. Other factors are not predictors with significant influence. The model proved that tax incentives included in component F1 have a positive effect on economic growth ( $p < 0.05$ ), while tax incentives included in component F3 have a negative statistically significant impact on corporate income tax revenues ( $p < 0.10$ ). Given that the first factor, or component F1, is comprised of the tax incentive defined in Article 50a, the tax incentive defined in Article 46 and the tax incentive defined in Article 53a, we can conclude that these incentives have positive effects on economic growth. Namely, incentives for investments (Article 50a), incentives exempting the taxpayer from paying corporate income tax for work training, professional rehabilitation and employment of disabled persons (Article 46), and the reduction based on the elimination of double taxation (Article 53a) have positive effects on the economic growth rate. The second factor, i.e. component F3, is comprised of the tax incentives defined in Article 47 and Article 52. Since the tax incentive defined in Article 47 has been abolished, the analysis was limited to only one incentive defined in Article 52.

Considering the results and factors that may affect the general economic climate in Serbia, the analysis of tax incentives can greatly contribute to achieving the desired level of tax competitiveness. Also, political stability and the efficiency of the legal system should not be left out. These aspects are the prerequisites for the corporate income tax instruments to affect fairness and economic growth. Theoretically, work on the investment climate through tax policy and tax incentive instruments provides the basis for further necessary research, but these should not be the only aspects of state intervention to stimulate economic growth and mitigate the adverse effects of the crisis.

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## ЕКОНОМСКИ РАСТ И ПОРЕСКЕ КОМПОНЕНТЕ: АНАЛИЗА ПОДСТИЦАЈА ПОРЕЗА НА ДОБИТ ПРЕДУЗЕЋА И ЊИХОВ УТИЦАЈ НА ЕКОНОМСКИ РАСТ У СРБИЈИ

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### Резиме

Порез на добит предузећа доприноси реализацији економских циљева својим значајним елементом – посебним пореским третманом пореских обвезника. Другим речима, најбољи начин да се подстакне привредни раст порезом на добит предузећа је деловањем на продуктивност фактора производње. Према томе, сврха увођења пореских подстицаја у порески систем једне земље је да се њима утиче на повећање привредне активности. Иако је тенденција неких земаља поједностављење овог пореског облика уз смањење јаза између ефективне пореске стопе и законске пореске стопе у циљу одржавања прихода, порески подстицаји нису изгубили на свом значају. Док се код неких савремених пореских система претендује неутралност у опорезивању, поједине земље механизам пореских подстицаја користе као снажно оруђе развојне фискалне политике, али и као оруђе за остваривање економских и социјалних циљева. Међутим, присуство бројних парадокса који су у литератури повезани са пореским подстицајима иницира испитивање њихове ефикасности. Да би се извршило испитивање њихових ефеката на привредни раст у Србији, и тиме испитала њихова ефикасност, спроведене су одговарајуће емпиријске анализе. Истраживањем су обухваћени порески подстицаји, за које је Пореска управа Републике Србије доставила квантитативне податке о укупним износива пореских подстицаја који су били коришћени у Србији у анализираном периоду од 2007. до 2018. године. Анализа пореских подстицаја у Србији посматра пореске подстицаје у домену опорезивања добити који су од великог значаја за пореске расходе. С обзиром да подаци о врстама и износива пореских подстицаја који су исказани у пореским пријавама за аконтационо-коначно утврђивање пореза на добит предузећа нису транспарентни, идентификовање истих је од великог значаја за анализу ефикасности пореских подстицаја. Подаци о привредном расту преузети су из Билтена јавних финансија Републике Србије. Имајући у виду да наведени узорак чини 10 пореских подстицаја, и да се анализа врши у периоду од 12 година (2007-2018.), анализа утицаја пореских подстицаја на приходе од пореза на добит предузећа заснована је на анализи неколико променљивих и истовремено коришћених одговарајућих економетријских тестова и метода. Факторском анализом обухваћени су сви порески подстицаји и дата је основа за закључна разматрања. Примењена је метода Анализа главних компоненти у циљу трансформације почетног скупа предиктора, односно свих пореских подстицаја, у нови скуп. На тај начин омогућено је смањење димензионалности, што је постигнуто свођењем на неколико предиктора. Утврђено је да су одређени подстицаји за порез на добит имали значајан утицај на економски раст. Модел је доказао да порески подстицаји који објашњавају компоненту F1 имају позитиван ефекат на привредни



раст ( $p < 0,05$ ), док порески подстицаји који објашњавају компоненту F3 имају негативан статистички значајан утицај на приходе од пореза на добит предузећа ( $p < 0,10$ ). Негативним дејством пореског подстицаја, може се потврдити парадокс изазван пореским подстицајима у домену пореза на добит предузећа.

## APPENDIX

### *Rotated Component Matrix*

	Component			
	F1	F2	F3	F4
art50a	0.973	-0.041	0.115	0.086
art46	0.949	-0.042	0.087	-0.108
art53a	0.798	-0.184	0.472	0.163
art48	-0.367	0.885	0.080	0.058
art45	-0.050	-0.775	0.422	-0.071
art48a	0.521	0.617	0.365	0.246
art47	-0.062	0.128	-0.782	-0.019
art52	0.433	0.137	0.758	0.220
art50b	-0.077	0.167	0.097	0.957
art51	0.665	-0.029	0.105	0.705

Extraction Method: Principal Component Analysis

Rotation converged in 6 iterations.

Source: Authors' calculations



## THE EXPANSION OF SERBIA IN THE FIRST HALF OF THE 12<sup>TH</sup> CENTURY

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### Abstract

In Serbian historiography, the expansion of Serbia, or Raška (Rascia), in the first half of the 12<sup>th</sup> century at the expense of Byzantium, whose vassal it was, was recorded a long time ago. At the same time, it is recorded that Serbia was defeated three times by Byzantium (in 1127 – 1129, 1149 and 1150). Byzantium dealt with the problem of unruly vassals by annexing some territory at the beginning of the 11th century, relocating population (after 1129 and 1150), giving land to the Serbs settled along the Byzantine border (to Zavida, Primislav, Desa, Stefan Nemanja), and raising the number of soldiers Serbia was obliged to give for waging war (in 1150). The lands granted to Serbs between 1129 and 1143 spanned the area between Ras and Kopaonik, while those granted between 1150 and 1158/9 spanned the area between Kopaonik and the parishes (Serb. *župa*) of Toplica and Reka. The first expansion benefited Zavida, who received lands from Byzantium after acknowledging the Empire's sovereignty, upon his return to Ras, which belonged to Byzantium at the time. The second expansion impacted at least a part of Zavida's territory which Stefan Nemanja later received when he became a suzerain in Serbia. We hypothesize that the territories that Byzantium gave to the Serbs as its vassals did become part of Serbia at a certain moment and under certain conditions. The answer to the question of how this was possible even though Serbia was defeated by Byzantium may be that Byzantine emperors regarded Serbian rulers as their officials and Serbian lands as Byzantine provinces.

**Key words:** Serbia, Raška (Rascia), territorial expansion, Zavida, Nikava, Galič, Toplica, Reka

## ТЕРИТОРИЈАЛНО ШИРЕЊЕ СРБИЈЕ У ПРВОЈ ПОЛОВИНИ XII ВЕКА

### Апстракт

Проширење Србије (Рашке) у првој половини XII века на рачун Византије, чији је вазал била, одавно је забележено у српској историографији. При томе,

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забележно је да је у том периоду Византија три пута поразила Србију (1127 – 1129, 1149. и 1150. године). Византија је проблем непослушних вазала решавала одузимањем територија, почетком XI века, пресељењем становништва (после 1129. и 1150. године), давањем посела Србима чије су се територије граничиле са Византијом (Завиди, Примиславу, Деси, Стефану Немањи), и повећањем броја војника које је Србија била дужна да јој да за ратовање (1150. г.). Указано је да је до првог проширења дошло између 1129. и 1143. године на простору између Раса и Копаоника, а до другог између 1150. и 1158/9. године, између Копаоника и жупа Ибар, Топлице, Расине и Реке. Територија на коју су се проширили у првој етапи припадала је Завиди и представљала је поседе које је он добио од Византије пошто је признао њену врховну власт након повратка у Рас, који је тада био део Византије. Проширење у другој етапи барем делом односило се на територију која је припадала такође Завиди, а коју је добио Стефан Немања када је постао удеои владар у Србији. Тако смо изнели претпоставку да су територије које је Византија давала Србима, како би били њени вазали, у одређеном тренутку и у одређеним условима постајале део Србије. На питање како је то могуће, чак и када се изгуби рат, изнета је претпоставка да су византијски цареви на владаре Србије гледали као на своје чиновнике, а на њихове земље као на византијске провинције.

**Кључне речи:** Србија, Рашка, територијална експанзија, Завида, Никава, Галич, Топлица, Река

## INTRODUCTION

The topic of this paper is the territorial expansion of Serbia, Raška (Rascia), between the end of the 11<sup>th</sup> century and the 1160s. That was the period of its expansion to the east – to the areas between Ras and the Toplica River, and Niš and the South Morava River. This change was important because it would have permanent consequences and would move and stabilize the center of the Serbian state in these new areas.

King Bodin succeeded in expanding Serbia to the north by conquering Raška and setting up his Princes (Serb. *župan*) Marko and Vukan as its rulers after 1081 (Gesta I, 2009, p. 162 -163; Blagojević, 2000, p. 64 – 65).<sup>1</sup> While Marko is not mentioned in later sources, some reliable sources about Vukan have been preserved. Anna Komnene wrote about him in great detail. Thus, Serbian states spread to the west, south and north by the end of the 11th century, while the eastern border of the territory remained almost unchanged.

From the last decade of the 11th century and onwards, Byzantine sources referred to Raška as Serbia, and, judging by a letter sent by Grand

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<sup>1</sup> King of Duklja Constatine Bodin titled himself “exousiastes of Dioclea and Serbia“ on one of his Greek stamps (Cheynet, 2008, pp. 89 – 97). Solange Bujon, a French historian, believes that Marko was a figment of the imagination of Don Mavro Orbini at the beginning of 17<sup>th</sup> century. According to Solange Bujan, Mavro Orbini actually forged all of the so-called “Chronicles of the Priest of Duklja“ trying to show it as one of the sources for his work “The Kingdom of the Slavs,” which was printed in Pesaro in 1601 in Italian (Bujan, 2011, pp. 65 – 80). Her ideas, however, were not pursued by other researchers.

Prince (Serb. *veliki župan*) Vukan to the Byzantine Emperor Alexios I Komnenos, Grand Princes (Serb. *veliki župan*) were considered the rulers of Serbia (VIINJ, 1966, p. 386).

Anna Komnene, daughter of the Byzantine Emperor Alexios I, mentioned this letter in her work “Alexiad” and stated that it was towards the end of the 11<sup>th</sup> century that the border between Serbia and Byzantium lay between the Serbian town of Zvečan in the north and the Byzantine town of Lipljan in the south. Vukan organized attacks on Zigon, the area between the towns of Kosovo Polje and Lipljan. In great detail, Anna Komnene described the relationship between Serbia and Byzantium in the period between 1092 and 1094, when her father Emperor Alexios I Komnenos fortified the border towards Serbia in order to stop Serbian attacks. She also wrote that this activity of the Emperor was carried out in the area of Zigon, which indicates that Vukan had previously attacked Byzantium exactly in this area. Vukan’s greatest advance happened in 1094, when he attacked and burnt down the Byzantine town of Lipljan, and then forced his way to Skopje, Vranje and Polog. After that, Alexios I Komnenos raised an army against the Grand Prince (Serb. *veliki župan*) of Serbia, who managed to avoid conflict by surrendering hostages (his nephews Uroš and Stefan Vukan and twelve princes (Serb. *župan*). In this way, peace between Byzantium and Serbia was established (VIINJ 1966, pp. 385 – 389; Maksimović, 1985, pp. 73 – 90).

It is believed that Vukan managed to expand the state to the parishes (Serb. *župa*) of Morava (between Čačak and Kraljevo), Borač (Gruža), Lab, Ras and Toplica. In this way, at the time of Vukan, Serbia spread to the territories around the West Morava River and east of the river Ibar (Blagojević 1983, pp. 66 – 67; Blagojević, Medaković, 2000, pp. 81 – 82). Due to the successful expansion of his territory and his avoidance of unnecessary conflicts, Grand Prince (Serb. *veliki župan*) Vukan is considered one of the most important Serbian rulers of the period before the Nemanjić Dynasty. Anna Komnene mentioned him for the last time in 1106 (VIINJ III, 1966, pp. 389 – 390).

The first source aside from Anna Komnene which provided evidence about the situation in Serbia was Stefan the First-Crowned, who wrote about a great tumult in Serbia, when his grandfather (Zavida)<sup>2</sup> was bereft of his land by his brothers. After this, his father returned to his birth-place Dioclia, specifically Ribnica. The evidence that Zavida returned to his birth-place indicates that he returned to the land in Duklja inherited from his father, where his youngest son Stefan Nemanja was born and baptized according to Latin customs in 1112-1113 (Ćorović,

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<sup>2</sup> From other sources, i.e. an inscription on the Miroslav Gospel and an inscription in the Church of St Apostle Peter in Bijelo Polje, we learn that the name of Stefan the First-Crowned's grandfather was Zavida (Živković, 2006, p. 119).

1938, p. 18; Stefan 1988, p. 64; Sveti Sava, 1986, p. 118; Pirivatrić, 1991, p. 35).

There is no direct evidence specifying when the unrest broke out and forced Nemanja's father to leave Serbia. It is believed that these events most likely took place after the death of Vukan, Grand Prince (Serb. *veliki župan*) of Serbia, i.e. after 1106, when, as it was previously said, he was mentioned for the last time. This event must have happened before the birth of Stefan Nemanja in 1112-1113 (Ćorović, 1938, p. 18; Blagojević, Medaković, 2000, p. 88).

Written sources have been confirmed by archeological data. Archeological research shows that the Byzantines built an earthen, palisade fort capable of housing 300-500 soldiers on the hill of Gradina, above the confluence of the Sebečevska River and the Raška River, after taking the town of Ras. Byzantine coins showing the emperors Alexios I (1080-1118) and John II Komnenos (1118-1143) were found at this location (Popović, 1997, pp. 119-136). It can be noted that no coins showing Manuel Komnenos were found. This indicates that the Byzantines must have held this town before 1118, when Alexios died and John II Komnenos came to throne. The fact that no coins showing Manuel Komnenos were not found indicates that Byzantium must have lost this town before he came to power.

Stefan the First-Crowned said that, after some time, Zavida came back to his seat (Ćorović, 1938, pp. 18 – 19; Stefan, 1988, p. 65), by which he must have meant the place where Stefan was seated, i.e. Ras. However, he did not say when this happened. It might be possible to establish the year of his return by analyzing the words of Sava Nemanjić, who said that his father Stefan Nemanja was a *mladenac* (Engl. youngster) at the time he arrived in Ras. Namely, he was called “a youngster” after he was baptized for the second time by the Bishop of Ras (Ćorović, 1928, p. 173). *Mladenac* is an expression which in the Middle Ages in Serbia referred to children up to the age of 4 (Trifunović, 1990, p. 358). So, Zavida must have come to Ras in 1116, or in 1117 at the latest. This means that Zavida was in the service of Byzantium at his arrival in Ras, since the above-mentioned fort on the hill of Gradina was on Byzantine territory. The Greek Bishop Leontios of Ras baptized Stefan Nemanja in the Church of SS Apostles Peter and Paul (Serb. *Crkva Svetih Apostola Petra i Pavla*) (Kalić, 2006, p. 147). Since the ruler of Byzantium at the time was Alexios I Komnenos († 1118), this means that, during the reign of Alexios I, it was already customary for Serbian noblemen to settle down near the Byzantine border with Serbia. In case of war, Serbian settlers would fight for Byzantium against their own people. In this way, the Byzantines eliminated their potential adversaries and made allies. It is assumed that at one point Zavida's family was given lands in the vicinity of Skopje. During the reign of Byzantine Emperor Alexios III Angelos

(1195-1203), Archon Jovan, son of Tihomir, Nemanja's eldest brother, won independence for his estate in the vicinity of Skopje (Pirivatrić, 2009, pp. 313 – 333).

So, in the second decade of the 12th century, the border between Serbia and Byzantium was west of Ras, in order to extend to Toplica, Ibar Rasina and Reka until the 1160s. In this paper, we will try to explain how this came about and determine the time of Serbia's expansion to these territories.

### *THE TIME AND MANNER OF SERBIA'S EXPANSION*

That Zavida had estates in the vicinity of Ras can be supported by the endowments of his heirs. Where exactly were these estates and how do we know that they were inherited? Stefan Nemanja and his brothers, nephews and other descendants built endowments on their estates. Each donor (Serb. *ktitor*) who would donate lands could do that only with those estates which were legally settled and were not disputed. Rulers tried to show that they came into possession of the land which they donated in a legitimate way, as can be seen from charters. This directly means that they must have been inherited. Next, the land which was given away was mostly in the immediate vicinity of the endowment in question. This is proof that the donor possessed the surrounding lands. That Zavida had lands in Ribnica is proved by the fact that Stefan Nemanja endowed Hilarandar with a mare and 30 spuds of salt from Zeta. He was also the benefactor of Bogorodica Bistrička (Church of the Blessed Virgin of Bistrica) in Polimlje (the river Lim basin), where his brothers held lands too. In Polimlje, the following were endowments of these noblemen: the Church of SS Peter and Paul (Serb. *Crkva Svetog Petra i Pavla*) (Prince Miroslav), the monastery The Pillars of St George (Serb. *Đurđevi stupovi*) in Budimlje endowment of Prvoslav, Tihomir's son), the monastery of Mileševa (King Vladislav, before his reign), the monastery of Morača (Vukan's son Stefan) and the monastery of Davidovica (Vukan's son Dmiatar). The endowments, near the rivers Ibar, Zapadna Morava, Lim and Morača were located mostly in Polimlje, which shows that this area was Zavida's estate inherited by his posterity (Čirković, 1998, pp. 145 – 146; Čirković, 2000, pp. 26 – 27). So, he received this territory from Byzantium.

The fact that Zavida first avoided and then placed himself in the service of Byzantium was not the worst consequence of the great unrest. It is believed that the Serbs lost Ras at the time too (Blagojević, Medaković, 2000, p. 54). That means that they lost the territories they had held east of Ras. Namely, John Kinnamos and Niketas Choniates stated that, during the uprising against Byzantium between 1127 and 1129, Serbs burnt down the fort of Ras, meaning that it was part of Byzantium, i.e.

that the border was behind it. The Serbian uprising was crushed (VIINJ, 1971, pp. 14 – 15, 115 – 117). Niketas Choniates wrote that Emperor John II Komnenos had Serbian prisoners settled in the vicinity of Nicomedia after the Serbian uprising of 1127-1129. The name of Servochoria both proves that the Serbs were moved and indicates where they were removed to. At the same time, he wrote that some of them were soldiers while others paid taxes (VIINJ, 1971, pp. 116 - 117). This shows that Byzantine emperors tried to control Serbia by forcibly relocating its population. The fact that some were soldiers and others paid taxes means that both noblemen and serfs were part of the relocated population.<sup>3</sup>

For more than two decades after that, no sources mentioned the relations between Serbia and Byzantium. The Serbs were next mentioned due to the new uprising against Byzantium in Raška in 1149. At the time, Serbia was ruled by Grand Prince (Serb. *veliki župan*) Uroš II (Kalić, 2006, pp. 153 – 172). John Kinnamos wrote that Emperor Manuel (1143-1180) attacked and destroyed Ras, and then headed for the area of Nikava, for which he explicitly stated that it belonged to the Grand Prince (Serb. *veliki župan*) conquering all forts there. Finally, he came to Galič, which did not want to surrender, and the Emperor and his army took it by storm (VIINJ, 1971, pp. 22 – 26). Under whose power Ras was need not be explained; however, things were different with Nikava and Galič. The fact that Emperor Manuel did not conquer anything east of Galič proves that Galič was the eastmost fort on the eastern border of Serbia.

Kinnamos did not write where exactly Nikava was; furthermore, he was the only source who mentioned this area. In current literature, opinions on Nikava's location differ from author to author. Thus, it is postulated that it was in the parish (Serb. *župa*) of Pnuće, then in the area of the Nišava River, then the area at the town of Rožaja, on the river Makva, i.e. the area of present-day Rožaja and Tutin, where the parish (Serb. *župa*) of Jelica, in the vicinity of Zvečan, would be situated later. It is doubted that its location could be determined with any certainty (Blagojević, 1983, p. 67; Mišić, 2014, p. 29). The most recent assumptions indicate that, after the conquest of Ras, Manuel moved to the southern parts of Serbia. This locates the area of Nikava, with a number of its forts which surrendered to Manuel, around the source of the river Ibar, where the border with Byzantium once was. This means that the defense strip was destroyed (Živković, 2006, p. 134; Mišić, 2014, p. 29).

Kinnamos himself did not say even where the fort of Galič was. However, Galič was mentioned in the Saint-Stephan Chrysobull of King Milutin. It was said that it was situated in the area of Sočanica, on the right bank of the river Ibar (Trifunović, 2011, I p. 47; Trifunović, 2011 II,

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<sup>3</sup> It is believed that the Serbs kept their territories despite the defeat (Mišić, 2014, p. 28).



p. 18). This location has been accepted in literature (Blagojević, 1983, p. 67; Živković, 2006, p. 134; Mišić, 2014, pp. 28 - 29). It is in the southern part of the mountain Kopaonik. Thus, in 1149 the eastern border of Raška spread to the southern part of Kopaonik.

An important question should be asked at this point: how did the Serbs, who had been defeated in 1129, manage to move the border of their state to include Ras, Nikava and Galič, i.e. Kopaonik? The answer to this question cannot be found in available sources. What we have pointed out is that Zavida acknowledged the sovereignty of Byzantium when he came back to his lands near Ras. Moreover, his descendants treated these territories as their inheritance, as shown by the fact that they built endowments on those lands. Still, this is not the answer to the question of how Raška expanded nor if it is an indication that Zavida received these territories as a *pronoia* or as inheritance. The question of why Byzantium did not take these territories after it had defeated the Serbs can also be posed.

The following year, John Kinnamos wrote that Emperor Manuel started a new invasion on Serbia. He came to Niš, and then went north, crossing the land of Longomir. This toponym is interesting because it contains the Slavic nasal letter *o*. The name given to the river shows that Slavs must have settled the area. This land can be related to the present-day river Lugomir, which runs east of present-day Jagodina and flows into the Great Morava. This was the first time Lugomir was mentioned in sources. Emperor Manuel campaigned in the north because he had heard that Hungary was sending help to Serbia. He reached the river Sava and moved towards the river Drina. Kinnamos mentioned here that the river Drina separated Bosnia from the rest of Serbia. This means that Serbia was already situated south of the river Sava and east of the river Drina (VIINJ, 1971, pp. 26 – 28; Mišić, 2014, p. 29). In this description Kinnamos mentioned three places: Sečenica, Strimon and Tara.

Kinnamos wrote that the Emperor set his camp near Sečenica. Sečenica is believed to be the same as the present-day village Sečanica situated near Niš (Blagojević, 1976, pp. 66 – 67). Kinnamos said that Manuel had set his camp half way to Sečanica. He also said that Hungarian soldiers retreated towards the river Strimon after being defeated by the Byzantines. Strimon could be the part of the Great Morava (Blagojević, 1976, pp. 67 – 69). As the river Strimon is north of Sečanica, that means that the Byzantines fought the Hungarians on their way north, surely south of Paraćin, seeing as the Hungarian soldiers ran in that direction. Therefore, it can be concluded that the Emperor set his camp at Sečanica and that on his way north he fought against a Hungarian patrol somewhere between Niš and Paraćin; therefore, the Hungarian army could run to Paraćin, i.e. in the direction of their state.

The Emperor chose to go this way not because this was where the Serbian border possibly was, but because it was the way the road went.

He took this way to confront the Hungarian army, which he expected would advance from the north in order to help Serbia. Since he did not meet them there, he went along the valley of the river Sava and then, not meeting the Hungarian army there either, he went along the valley of the river Drina. As we have stated earlier, Kinnamos said explicitly that the Drina separated Bosnia from the rest of Serbia. Therefore, the border of Serbia in the east was east of the river Drina.

A battle between Serbs and Byzantines was fought at the river Tara. It is believed that is the present-day stream Tara, which flows into the river Jablanica west of Valjevo, and joins the river Obnica at Valjevo, thus forming the river Kolubara. Therefore, it is believed in literature that the river called Tara by Kinnamos was actually the river Jablanica, not the river Tara. In any case, the battle occurred on the territory of the town of Valjevo (Blagojević, 1976, pp. 69 - 73). It is believed that the area between the rivers Great Morava, West Morava and Drina belonged to Serbia (Mišić, 2014, p. 29). Therefore, it can be concluded that the territory of Serbia included lands between the river Drina and the town of Valjevo, while some even think that its territory included the lands near the Great Morava. This brings us to the question of how Serbs had managed to do that after their defeat in the 1127-1129 uprising.

According to John Kinnamos, after the Byzantine victories over the Serbs in 1149 and 1150, Emperor Manuel I Komnenos had “a great number of barbarians, some of whom were soldiers and some were cattlemen” (VIINJ, 1971, p. 25) settle down into the area of Serdica, i.e. in the vicinity of the present-day Sofia; in addition, Serbia had to give him 2,000 soldiers for waging war in Europe and 500 soldiers (instead of the 300 required until then) for waging war in Asia (VIINJ, 1971, p. 25). This also meant the relocation of Serbs, noblemen and serfs dependent categories of the population alike to the east. Serbia remained a Byzantine vassal, and border changes were not mentioned.

However, the expansion of Serbia did not end there. Namely, Stefan the First-Crowned said that, when his father reached a certain age, he received “the honor of forefathers”: Toplica, Ibar, Rasina and Reke to rule. He was probably a suzerain (Ćorović, 1938, p. 19; Stefan, 1988, p. 65; Blagojević, 1997, pp. 45 - 62). It is believed that these territories were part of the estate that Zavid had received after acknowledging Byzantium's sovereignty (Aleksić, 2009, pp. 11-12), and that Nemanja had received them in 1158/9 (Pirivatrić, 1991, pp. 25-35). These territories were referred to by Domentian as ‘eastern lands’, although he did not list them individually (Domentian, 1865, p. 4; Domentian, 1988, p. 239).

The Toplica mentioned above was actually the parish (Serb. *župa*) of Toplica, which included the valley of the eponymous river and its tributaries. In the south it shared borders with Byzantium, marked by the rivers Dubočica and Lab which belonged to Byzantium at the time. It also

shared borders with Byzantium in the east. Reke, or the parish of Reke, was situated in the area surrounding the Pusta River, which included the territory between the foot of mount Jastrebac, the foot of mount Mojsinja, and the South Morava River. It was located between the rivers Toplica and Dubočica. Rasina was a parish in the valley of the river of the same name. Ibar, which would later be divided into two parishes, included the basin of the river Ibar at first, or the lands between the basin of the river Studenica and the confluence of the rivers Ibar and West Morava. So, Nemanja's territory shared borders with Byzantium in the south, east and north (Mišić, 1998, p. 94; Blagojević, 2000, p. 68).

If we consider that, as previously stated, in 1149 the border was marked by the mountain Kopaonik, then it becomes clear that in the meantime another expansion to the east happened. Those were exactly the territories which Stefan Nemanja received, as we said, in 1158, or 1159 at the latest.

The claim that these territories were a part of Serbia and not Byzantium can be supported by the fact that Stefan Nemanja was invited by his brothers to a gathering at which he was attacked for building the Church of St Nicholas, near Kuršumljija, and The Church of the Virgin Mary, at the confluence of the rivers Kosanica and Toplica. In fact, for this reason Stefan Nemanja was imprisoned by his brothers in Ras.<sup>4</sup> Undoubtedly, this data proves that these territories were part of the state of Raška, and that Nemanja enjoyed the rights of the grand prince (Serb. *župan*) (Mišić, 2014, p. 29). This also means that the borders of Raška were within this area.

Once, during his visit to the land in the valley of the Nišava River, most likely in 1163, Emperor Manuel invited Stefan Nemanja to meet him. Domentian writes that the Eastern Emperor gave part of his eastern land to Nemanja, emphasizing that God made Heaven in the east. Thus, Nemanja obtained the parish of Dubočica and the title of the *carski san*,<sup>5</sup> as a present from the Emperor, stating afterwards that Dubočica could not be inherited by his brothers but only by his children. This means that

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<sup>4</sup> Stefan Nemanja was under the significant influence of John (Adrian) Komnenos, the Archbishop of Ohrid between 1140 and 1164 and close relative of the Byzantine Emperor Manuel. Thanks to the Archbishop's support, Stefan Nemanja built his endowments in Toplica (Kalić, 2007, pp. 197 – 208).

<sup>5</sup> Stefan the First-Crowned mentioned this event (Stefan, 1988, pp. 65 – 66; Domentian, 1988, pp. 249 – 240).

The title *carski san* referred to a Byzantine courtly title in our old historiography, probably the title of protospatharios (Jiraček, Radonić, 1952, p. 148). Miloš Blagojević believes that the Emperor of Byzantium gave Nemanja the title of a ruler (Blagojević, 1996, p. 198). Srđan Pirivatrić is of a similar opinion (Pirivatrić, 2011, pp. 89 – 116), relying on the evidence of "The Synaxarion Life of St Symeon", which contains the term "*samodršci* (independent rulers) of the lands of the Serbian throne".

Dubočica was seen as the private property of the youngest son of Zavida (Ćorović, 1939, p. 20; Blagojević, 1996, pp. 197 – 212). The term “Eastern Emperor“ referred to Emperor Manuel, while the “part of eastern lands” means part of Byzantium. Stefan Nemanja got Dubočica, a parish (Serb. *župa*) encompassing “the valley of the river Veternica and the field of Leskovac,” (Mišić, 1998, p. 95), as an inheritance. By obtaining Dubočica, Stefan Nemanja became the vassal of both the Grand Prince (Serb. *veliki župan*) of Serbia and the Emperor of Byzantium. When we consider the location of Dubočica in relation to Toplica and Reke, it can be concluded that Dubočica directly shared borders with Toplica and Reke. Its territory included the lands between Kraljevo and Kruševac in the north, and its southern border lay between the south of Leskovac and Zvečan. It amounted to around 9,000 to 10,000 km<sup>2</sup>. Accepting this gift from the Emperor was a smart decision, although it would provoke conflict between Nemanja and his brother Tihomir (Mišić, 1998, p. 95; Blagojević, 2000, p. 68).

Next, we can note that Zavida and Nemanja received the lands between Ras and Dubočica from Byzantium.

However, they were not the only ones. Kinnamos writes that Emperor Manuel I Komnenos deposed Primislav, the Grand Prince (Serb. *veliki župan*) of Serbia, probably in 1162, and “gave him land very fertile and good for grazing cattle“.<sup>6</sup> The words *removed* and *gave* suggest that he *removed* him from his own state, and the only place where he could *remove him* from and could *give him* was the territory of Byzantium (VIINJ, 1971, IV, pp. 56 – 58). The expression *good for grazing cattle* indicates that this was a mountainous area. Just as it happened to Zavida, Byzantine emperors settled Serbian noblemen in their territory, although in this case it is not possible to define where precisely. Primislav could get these territories either as hereditament, or as pronouia<sup>7</sup>.

Kinnamos said that in 1163 Manuel I Komnenos brought onto the Serbian throne Desa, who had ruled Dendra until that moment. He describes Dendra as “a populated area in the vicinity of Niš“ (probably Dubravica near Leskovac). Manuel made him ruler on the condition that he should leave Dendra (VIINJ, 1971, pp. 58 – 59; Blagojević, 1996, pp. 197 – 212). This supports the assumption that Dendra was not in Serbia but in Byzantium. Desa had ruled over it recognizing the sovereignty of the emperor of Byzantium. However, after he was made ruler, Desa refused to leave Dendra, which was the reason he got into conflict with Emperor

<sup>6</sup> In our historiography it is the prevailing opinion that Primislav was actually Uroš II (before 1146-1162), who had already waged war against Byzantium (Kalić, 1970, pp. 21 – 38; Živković, 2006, pp. 133 – 149).

<sup>7</sup> On pronouia see: Ostrogorski, 1951; Bartusis, 2012, while about pronouia in the Serbs: Ferjančić, 1999, pp. 589 – 591; Bartusis, 2011, pp. 177– 216.

Manuel, who insisted that this territory was to be returned (VIINJ, 1971, pp. 58, 62 – 63). Manuel's insistence indicates that he could not accept that Dendra, which Desa had received as a Byzantine subject and which was part of Byzantium, would become part of Raška.

As we have seen, Byzantine emperors of the Komnenoi dynasty, starting from Alexios I to Manuel I, tried to stop the expansion of Serbia to the east using three methods. The first method utilized were military campaign (1092 – 1094, 1127 – 1129, 1149 – 1150). There were also more subtle methods which they used to influence the political processes in the Central Balkan regions.

The second method of preventing the expansion of Serbia to the east was the relocation of Serbia's population to Byzantium in 1129 and 1149. As we have said, in 1129 they were moved to Asia Minor, to the area of Nicomedia, where they founded Servochoria. After the Byzantine campaign and victory in 1149, Serbs were relocated to the vicinity of Serdika. In both cases both noblemen and serfs were relocated. In this way, Serbs were to be exhausted biologically, which was supposed to disable them in their struggles.

The third method of preventing the expansion of Serbia was granting Byzantine lands to members of respectable Serbian families of princes (Serb. *župan*) and boyars. The Serbs who were gifted Byzantine territories protected the Empire from the attacks of their fellow-countrymen, who remained subjects of the Grand Prince (Serb. *veliki župan*). Sources indirectly show that Alexios I Komnenos won over respectable Serbs for his own aims, as was recorded in Zavida's case, while there is direct evidence of similar scenarios occurring with Primislav, Desa and Stefan Nemanja.

In addition, Serbia was exhausted by the increase in the number of soldiers she had to provide Byzantium for its wars.

To these methods of defeating and weakening Serbs and Serbia, we should add that Byzantium witnessed great territorial expansion during the reigns of the three war-waging emperors of the dynasty of Komnenoi (1081-1180). At that time the Grand Princes (Serb. *veliki župan*) of Serbia were vassals, who had to provide soldiers for the Byzantine army whenever Byzantium waged wars in Europe and Asia.

As early as the end of the 11th century, Alexios I Komnenos fought against Grand Prince (Serb. *veliki župan*) Vukan, and his daughter Anna Komnene described the conflict as a "civil war" (VIINJ, 1966, p. 388). According to the assumed hierarchy of Christian rulers, the Emperor of Byzantium was at the top; the rulers of Western European countries were below him, while the rulers of small countries neighboring Byzantium were at the bottom of the hierarchy. Serbian rulers were at the very bottom of the ladder, so Byzantine Emperors considered them their servants, and saw their lands as Byzantine provinces. There was a similar situation in the Asian provinces, as no clear border existed between By-

zantium and Armenia. Similarly to the Serbian people, the Armenians lived on both sides of the shifting border with Byzantium and their noblemen could serve either Armenian or Byzantine rulers (Maksimović, 2000, pp. 55 – 63).

What can be confusing is the fact that, despite the defeats that Raška suffered, the forced relocations of her population, and the removal of Serbian noblemen to the borders to fight against their own people and Serbia, the state of Serbia expanded.

### CONCLUSION

We have shown that the expansion took place in at least two stages and that the manner in which the expansion was accomplished is difficult to explain. The first stage entailed the expansion to the area between Ras in the west and Kopaonik in the east. The fact that coins showing Manuel I were not found in Ras, can only mean that it was possible for the expansion to happen during the period between 1129 and 1143 at the latest. The second stage of the expansion took place between 1150 and 1158/9, when Serbia expanded to the area between Kopaonik in the west and the rivers Toplica, Ibar, Rasina and Reka in the east. Both Byzantine sources and Stefan the First-Crowned remained silent on the matter of the causes of the expansion. The expansion was definitely not made possible by the military success of Serbia or the military help Hungary might have provided Serbia. Stefan the First-Crowned would not have failed to mention it if this were the case, just as he did not fail to mention that Nemanja had received Dubočica and the title of *carski san*. Therefore, something common for the period must have happened, which is why no sources mention it.

The only conclusion that can be drawn to explain the expansion of Serbia to such a degree is that Byzantine Emperors who gave lands to Serbian vassals gave them permission, at one point, to annex their Byzantine territories. Thus, these territories were under Byzantine rule indirectly, through Serbia who was a Byzantine vassal, rather than directly. That happened, as we have said, in at least two stages. The only answer to the question of how Byzantium could have allowed this is, as we have also stated, the fact that Byzantine emperors considered Serbian rulers their officials and saw their lands as Byzantine provinces.

The assumption that Serbia expanded in this way can be supported by the deeds of Desa. Namely, Manuel placed him on the throne under the condition that he left Dendra. The fact that Desa refused to leave Dendra despite Manuel's insistence seems to indicate a change in what was, until then, common practice: Serbs as Byzantine vassals could, under certain conditions unknown to us, annex the lands granted to them by Byzantium.

How significant this expansion was can be seen in the fact that Serbia's territory reached the Great Morava River. In time, this area would become the new nucleus of the Serbian State, thus permanently moving Serbia's center from the west to the east. By giving Serbian aristocracy lands located on the border Byzantium shared with Serbia, the rulers of the dynasty of Komnenoi made it possible for the area around the river Morava to become part of Serbia. However, they could not have known that at the time.

As for Serbia, this expansion permanently moved the center of the Serbian state towards the central parts of the Balkans and the South Morava.

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## ТЕРИТОРИЈАЛНО ШИРЕЊЕ СРБИЈЕ У ПРВОЈ ПОЛОВИНИ XII ВЕКА

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### Резиме

У раду настојимо да одговоримо на питање када и како је дошло до територијалног проширења Србије у периоду између 1129. године и 60 – тих година XII века. Сво то време Србија је задржала вазални статус према Византији, који је покушала у два наврата неуспешно да одбаци.

Након смрти жупана Вукана, у периоду од 1106. до 1112. године, дошло је до великог метежа у којем је Србија изгубила територије на истоку. Изгубљен је простор између српског Звечана на северу и Липљана на југу, а на истоку се граница померила западно од Раса. Да је граница била западно од Раса потврђује и податак да су Срби напали и спалили овај град у устанку 1127 – 1129. године. Том приликом су покушали да се територијално прошире и стекну независност. У том покушају претрпели су пораз. Ипак, након 1129., а пре 1143. године, Србија се проширила од Раса до Копаоника. О томе територијалном проширењу сведоче византијска освајања српских места на том простору 1149. године, од којих је најисточније место била тврђава Галич на Копаонику. Следеће године, Србија поново бива поражена, овог пута код Ваљева. Ипак, у периоду између 1150. и 1158./9. године, територија Србије проширила се до Ибра, Топлице, Расине и Реке. Ниједан историјски извор не сведочи о томе како је дошло до ова два проширења. Чак се тако нешто не може ни наслутити на основу византијских извора, а српски извори о овим проширењима ћуте.

Указано је и на то да је прве територије вероватно добио Завида када се из Дукље вратио у Рас и ступио у службу Византије. За територије које је Србија добила у другој етапи сматра се да су такође, барем делимично, биле под његовом влашћу. Иначе, Византија је своје територије на западу, вероватно уз границу са Србијом, неретко давала на управу Србима. Тако је Деса добио Дендр, крај око данашњег Лесковца, а Стефан Немања Дубочицу, жупу која обухвата долину Ветернице и Лесковачко поље. Оно што можемо да приметимо је тода су ове територије биле близу, а да је Дендру Деса одбио да врати Византији пошто је дошао на великожупански престо.

Закључено је да су територије које је Византија давала Србима у њеној служби, у одређеном тренутку, под околностима које нам остају непознате, постајале део Србије. Значај ових територијалних проширења почива у чињеници да је тада трајно померено тежиште српске државе према централним деловима Балкана и према Јужној Морави.

## THE INFLUENCE OF THE EXPERIMENTAL CONTEXT ON LEXICAL AMBIGUITY EFFECTS

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### Abstract

Previous research with the visual lexical decision task demonstrated that polysemous words (multiple related senses) have a processing advantage when compared to unambiguous words, whereas homonymous words (multiple unrelated meanings) have a processing disadvantage. Although the same pattern of results was observed in Serbian, the two effects were investigated in separate studies. The aim of this study was to test whether the effects can be replicated when both types of ambiguity are presented within the same experimental list. To test this, we conducted three experiments. In the first one, the mixed presentation of unambiguous, homonymous, and polysemous words did not reveal any of the ambiguity effects, leading to the conclusion that the experimental context may affect the emergence of ambiguity effects. The other two experiments were conducted to explicitly control for the experimental context. In both experiments, we presented each ambiguity type within the same block and counterbalanced the order of the block presentation. These experiments revealed the presence of the polysemy advantage, but not the homonymy disadvantage, which is a common pattern in literature. Polysemy effects typically emerge relatively easily, whereas the homonymy disadvantage requires additional conditions. Finally, we conclude that experimental context does play a role in ambiguity processing, although the order of presentation does not affect the overall results.

**Key words:** lexical ambiguity, polysemy, homonymy, experimental context

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## УТИЦАЈ ЕКСПЕРИМЕНТАЛНОГ КОНТЕКСТА НА ЕФЕКТЕ ВИШЕЗНАЧНОСТИ РЕЧИ У СРПСКОМ ЈЕЗИКУ

### Апстракт

Претходна истраживања са задатком визуелне лексичке одлуке показала су да се полисемичне речи (више повезаних значења) обрађују брже од једнозначних речи, док се хомоними (више неповезаних значења) обрађују спорије. Премда је исти склоп резултата забележен и у српском језику, ови ефекти су забележени у одвојеним експериментима. Циљ овог рада био је да се испита да ли се ови ефекти могу поновити када се обе врсте вишезначности налазе у оквиру исте експерименталне листе. Како би се то тестирано, изведена су три експеримента. У првом експерименту није забележен ниједан од ефеката вишезначности, што је довело до закључка да експериментални контекст може утицати на ефекте вишезначности. Друга два експеримента су настојала да додатно контролишу експериментални контекст. У оба експеримента, свака врста вишезначности је приказана унутар једног блока, а редослед излагања блокова је био контрабалансиран. У оба случаја је забележен ефекат полисемије, међутим ефекат хомонимије није, што је уобичајени склоп резултата у литератури. Ефекти полисемије се уобичајено јављају релативно лако, док су за јављање ефеката хомонимије потребни посебни услови. Коначно, можемо закључити да експериментални контекст утиче на обраду вишезначних речи, мада редослед излагања не утиче на типично забележене резултате.

**Кључне речи:** вишезначност речи, полисемија, хомонимија, експериментални контекст

### INTRODUCTION

#### *Lexical Ambiguity*

Lexical ambiguity is a very frequent linguistic phenomenon, in which one orthographic/phonological form may have different semantic realisations. In Serbian, multiple categories of words with multiple semantic realisations exist (Dragičević, 2010; Gortan-Premk, 1984, 2004; Tafra, 1986).

*Polysemous* words are words with *multiple related senses*, such as the word *glava*, which can denote both a body part and a person leading a group of individuals (amongst other senses). Polysemes emerge in language by expanding the semantic field of a word to similar referents (Gortan-Premk, 2004). The semantic field expands by means of multiple mechanisms (Dragičević, 2010) – metaphor, metonymy, synecdoche, and platysemey. Briefly, metaphor is a mechanism of expanding a lexeme to different senses by the means of similarity between two (or multiple) referents (e.g., wing of a bird and wing of a plane). Metonymy, unlike metaphor, is not based on similarity, but occurs between senses belonging to the same domain, wherein the connection between two senses is more literal. The usual example of metonymy is the relationship between the entirety of the referent and its element (e.g., lamb as an animal and lamb as

meat). Other mechanisms are less frequent. One is synecdoche, a mechanism similar to metonymy, where a lexeme is transferred from a part to the entirety of the referent (e.g., a head of the committee representing the person that is leading the committee). The other is platysemy (Grickat, 1967), a lexical mechanism first described in Serbian, wherein the differences between referents are more subtle than those related to other mechanisms that expand the semantic field of a lexeme. Additionally, platysemy is a mechanism more related to verbs or adjectives (e.g., a strong man, a strong will, a strong wind, etc.). Finally, similisemy (Gortan-Premk, 2003; 2018), a mechanism similar to platysemy, has been described to account for the phenomenon of words denoting analogue body parts in humans and various animals (e.g., head of a man, head of a bird). Therefore, it is apparent that polysemy is a systematic phenomenon, which appears as a consequence of a number of linguistic mechanisms. Polysemous words are also the most frequent type of ambiguity, making up approximately 80% of corpora in multiple languages. In Serbian, in just a small sample of the dictionary, a significant number of polysemes with over fifteen senses was counted (Dragičević, 2010).

*Homonymous* words are words with *multiple unrelated meanings* (Dragičević, 2010), such as the Serbian word *pop*, which denotes both a clergyman and a music genre. Unlike polysemes, homonyms appear in language as a random phenomenon. Some of the causes of the homonymous relationship between two meanings are: accidental occurrence of two orthographic forms of semantically unrelated words matching a shared form between words of unrelated meanings, which comes about accidentally (e.g. when one of the meanings is taken from another language, as in our example); splitting polysemous structures (word formation, acronyms matching the form of already existing word); phonetic changes; attraction (although very rarely); and etymological errors. However, there are some slight variations within homonyms as a group. In addition to *full homonyms*, where meanings are mutually exclusive and contextually infungible (Tafra, 1986), but share an orthographic and phonological form, there are some subtypes of homonymy where different semantic realisations do not necessarily share other forms (Dragičević, 2010). *Homographs* are words that, besides semantic differences, also differ in their phonology, but share the same orthographic form. An example of this is the word *grad* which can denote both a large, populated area and a form of solid precipitation. The two instances differ in stress (*grād* and *grād*, respectively). *Homophones*, similarly, vary in semantic and orthographic forms, whilst keeping the phonological form constant. These, however, rarely appear in Serbian due to the highly transparent orthography of the language. *Homomorphs* (Dragičević, 2010; also known as *homophorms*) are words which share some of their grammatical forms, but not all. An example of this may be the word *radio*. It refers to

both wireless communication through electromagnetic waves and the past tense of a verb *raditi* (to work). Even though these types of ambiguity share some of the features of homonyms, they are considered just a similar phenomenon and need to be treated separately.

### *Ambiguous Words Processing*

Although there are multiple variants of ambiguity, this paper focuses on polysemy and homonymy, variants which are often referred to in literature as “semantic ambiguity” (Eddington & Tokowicz, 2015). These two types are especially important because the properties of the two ambiguity types are the same in regards to their orthographic and phonological forms, and different only in regards to their semantic representations (Cruse, 2000, Tafra, 1986). Therefore, these two types of ambiguity represent excellent probes into the mental representations of semantics, as they are two extremes of the continuum of the relatedness of the senses/meaning of ambiguous words, without non-semantic cues for disambiguation (such as accent, part of speech etc.).

Research on semantic ambiguity processing and mental representations started within the research on storing words with multiple meanings in the mental lexicon. The results on how these words were processed were mostly inconclusive (Eddington & Tokowicz, 2015). Later research started relying on long known categorizations from semantics (Allan, 2009; Lyons, 1977) and took into account the complexity within the lexical ambiguity phenomenon. Separating ambiguity into polysemy and homonymy revealed a *relatedness effect*. Related senses of polysemes facilitated processing or, in other words, led to *polysemy advantage*, whereas unrelated meanings made processing slower and more difficult – *homonymy disadvantage* (Azuma & Van Orden, 1997; Klepousniotou, 2002; Rodd et al., 2002). This pattern of results was explained by postulating two different mechanisms by which meaning/sense representations are interconnected. According to this view, upon the presentation of a word, all possible meanings/senses are activated, although commonalities between polysemous senses allow cooperation, while differences in homonymous words’ meanings lead to competition. Multiple modelling efforts managed to confirm these dynamics (e.g., Armstrong & Plaut, 2016; Rodd et al., 2004;), with varying accuracy rates.

Research that followed further established this opposite pattern of results, while exhaustively examining the different factors that affect processing, such as the degree of relatedness among the referents (metaphor/metonymy), number of meanings/senses, meaning/sense dominance, differences in distribution of meaning/sense probabilities, parts of speech, etc. (Armstrong & Plaut, 2016; Eddington & Tokowicz, 2015; Filipović

Durđević, 2019; Filipović Durđević & Kostić, 2008, 2017; 2021; Hino et al., 2002, 2006, 2010; Klepousniotou et al., 2008, 2012; Klepousniotou & Baum, 2007; Lopukhina et al., 2018; Mišić & Filipović Durđević, 2021; Rodd, et al., 2002; Rodd, 2020). We must note that the research presented thus far pertains to words presented in isolation, because some of these effects are not present when a word is presented within a biasing context. Although the existing work reveals differences in ambiguity resolution for homonyms and polysemes (Armstrong & Plaut, 2016, appendix; Edgington & Tokowicz, 2015), this exceeds the scope of this paper, and will not be discussed further.

The theories that explain a number of the aforementioned findings can roughly be divided into two groups: the response system account (or decision-making account) and semantic competition accounts. The response system account (Hino et al., 2006, 2010) postulates that lexical ambiguity effects arise in the process of response selection as a consequence of the task-specific strategies and the amount of evidence provided by semantics for a particular response (so called feedback semantics). Therefore, these models do not necessarily predict the opposite pattern of polysemous and homonymous word. They state that the amount of semantic evidence is not modulated only by the semantic relatedness of referents, but also by task demands. However, many findings do not agree with this, and the model has been criticised for its many post hoc explanations and for being overly flexible (Armstrong & Plaut, 2016). Semantic competition accounts (e.g., Armstrong & Plaut, 2016; Rodd et al., 2004) rely on cooperation and competition mechanisms that underlie polysemy advantage and homonymy disadvantage. In other words, these theories pertain to the relationships between sense/meaning representations and rely on that knowledge to predict the ambiguity effects. The latest iteration of the semantic competition accounts (Armstrong & Plaut, 2016) relies on its aforementioned predecessor in relation to the difficulties of simulating two opposite processes (cooperation and competition) for the two extremes of the sense/meaning relatedness continuum. In addition to that, Armstrong and Plaut's model describes the temporal dynamics of the two processes throughout the duration of processing.

### *The Present Research*

When tested on Serbian nouns, both polysemy and homonymy exhibited the expected advantage and disadvantage effects. Compared to unambiguous words, when presented as part of the visual lexical decision task, polysemous words were processed faster (Filipović Durđević & Kostić, 2008; 2021; Mišić & Filipović Durđević, 2021), and homonyms were processed slower (Filipović Durđević, 2019; Mišić & Filipović Durđević, 2019). However, both types of ambiguity have previously

never been tested in the same experiment, as they were traditionally contrasted (cf. Klepousniotou, 2002; Rodd et al., 2002). Therefore, our main aim was to perform a conceptual replication of the polysemy advantage and homonymy disadvantage effects in a single experiment in Serbian. We wished to contrast the two opposite effects that polysemes and homonyms have on processing within one experimental context in Serbian. In order to test this, we conducted three experiments. Based on previous findings, we expected to observe polysemy advantage and homonymy disadvantage.

### EXPERIMENT 1

Experiment 1 was conducted to test the presence of both polysemy advantage and homonymy disadvantage in the same experimental context. Three groups of words, polysemous, homonymous and unambiguous words, were presented within the same task.

#### Method

*Participants.* Thirty-nine psychology students from the University of Belgrade Faculty of Philosophy, Department of Psychology participated in this study for course credits. All were native Serbian speakers and had normal or corrected-to-normal vision. The study was approved by the institutional review board and the data was collected in 2015.

*Stimuli.* Word stimuli were selected from the six volumes of *the Serbo-Croatian standard language dictionary*<sup>1</sup> (1967 – 1976), as well as published polysemy norms (Filipović Đurđević & Kostić, 2017) and homonymy norms (Filipović Đurđević, 2019). Stimuli presented to the participants were 35 polysemous words (e.g., *grudi*), 35 homonymous words (e.g., *sud*), and 35 unambiguous words (e.g., *ponoć*), a total of 105 stimuli. The three word groups were matched by controlling for lemma frequency, familiarity, and concreteness (all  $p$ 's > .05). The difference in word length (in letters) between groups was statistically significant, although numerically negligible, since the average word length per group did not differ by more than two letters (Table 1). The number of meanings/senses was determined in a norming study in which participants listed meanings/senses for words assumed to be homonymous/polysemous based on the dictionary (Filipović Đurđević & Kostić, 2017 for polysemous words; Filipović Đurđević, 2019 for homonyms). In addition, 105 pseudowords were presented in the task. Therefore, the total number of stimuli in the experiment was 210.

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<sup>1</sup> *Rečnik srpskohrvatskoga književnog jezika*



Table 1. Descriptive statistics of word stimuli

	Homonyms		Polysemes		Unambiguous	
	M	SD	M	SD	M	SD
Word length <sup>a</sup>	3.86	.94	5.23	.81	4.60	1.19
Frequency <sup>b</sup>	75.95	125.64	81.49	144.85	81.15	107.65
Familiarity <sup>c</sup>	5.79	.90	6.05	.43	5.88	1.01
Concreteness <sup>c</sup>	5.26	1.41	4.90	1.50	5.18	1.71
NoS/NoM <sup>d</sup>	2.97	1.01	2.97	1.01	-	-

a – in letters, b – per 2 million (Kostić, 1999), c – estimated on a seven-point Likert scale (Filipović Đurđević, 2019; Filipović Đurđević & Kostić, 2017), d – estimated in a norming study (Filipović Đurđević, 2019; Filipović Đurđević & Kostić, 2017).

*Design.* The experiment followed a 2×3 factorial design, with both factors being within-subject. One of the factors was lexicality (word/nonword) and the other was ambiguity (polysemes/homonyms/unambiguous). Additionally, we controlled for the trial order of presented stimuli. The dependent variable was reaction time, measured in milliseconds and error rates for participants and stimuli.

*Procedure.* The visual lexical decision task was run in *OpenSesame 3.0* software (Mathôt et al., 2012). Each trial began with the presentation of a fixation cross (1000ms) and a blank screen (500ms), followed by stimuli, each of which remained on screen until the participants' response, with a maximum duration of 1500ms. If the presented stimulus was a word, participants were instructed to press 'm' on the keyboard, or press 'c' in case of a pseudoword.

Before the participants began the experimental block, they went through a short practice session, during which 9 words (3 for each level of ambiguity factor) and 9 pseudowords were presented. The stimuli within each block were presented in a random order. Reaction times measured in practice trials were not included in the analysis.

## Results

Participants and stimuli with an accuracy rate of less than 75% were removed from the dataset. Thus, eight nouns (five of which were unambiguous, three homonymous) and the data gathered from one participant were removed from the dataset. Additionally, reaction times pertaining to incorrect responses were removed from the dataset. In total, approximately 14% of the original data was removed prior to analysis.

The data was analysed in R statistical software (R Core Team, 2018) by Linear Mixed Effects Regression analysis (Baayen et al., 2008), using the *lme4* (Bates, Mächler, et al., 2015) package. Results were plotted in the *ggplot2* package (Wickham, 2016).

Reaction times were inversely transformed ( $-1000/RT$ ; Baayen & Milin, 2010) in order to resemble normal distribution. Trial order was included in the analysis to control for fatigue or practice effects (Baayen & Milin, 2010) and was transformed to z-scores (Gelman & Hill, 2007).

Fixed effects consisted of the trial order and the three-level ambiguity factor. The effect of ambiguity was treatment contrast coded (Schad et al., 2020), with unambiguous words set as the reference level. The random effects structure was specified by following the recommendations of keeping the key interactions and the key predictors as random effects if such models reached convergence (Barr et al., 2013). In order to avoid over-parametrization, the *rePCA* function (*RePsychLing* package; Bates, Kliegl, et al., 2015) was used as a diagnostic tool to remove random effect parameters that were not supported by the data. The final random effects structure consisted of random intercepts for both participants and stimuli, and random participant slopes for the trial order. The correlation parameter for random slopes for the trial order was dropped due to the correlation being estimated near zero ( $\rho = -.08$ ; Bates, Kliegl, et al., 2015, p. 7). Data points with residuals larger than  $\pm 2.5$  SD were removed, and the model was refitted.

The final model revealed no ambiguity effects whatsoever (Table 2). Both polysemy and homonymy showed no differences in processing when compared to unambiguous words. Also, no trial order effect was found, likely due to the length of the experiment not being sufficient for practice or fatigue effects to emerge.

Table 2. Summary of the mixed effect model with inverse RT as dependent variable, and ambiguity type and trial order as predictors.

<i>Random effects</i>					
	Variance		SD		
Items (Intercept)	.016		.126		
Subject (Intercept)	.032		.179		
Residual	.062		.249		
<i>Fixed effects</i>					
	Coefficient	S.E.	df	t	p
Intercept (Ambiguity: Unambiguous)	-1.646	.038	88.48	-43.567	<.001
Trial order	-.061	.004	3312.00	-1.416	.157
Ambiguity: Homonymy	.008	.034	95.20	.249	.804
Ambiguity: Polysemy	.004	.033	95.01	.128	.898

### *Discussion*

In Experiment 1, we tested for lexical ambiguity effects, i.e., polysemy advantage and homonymy disadvantage, within the same experimental context. Our prediction was based on the fact that the two effects

had previously been demonstrated separately (Filipović Đurđević, 2019; Filipović Đurđević & Kostić, 2008; 2021). However, no ambiguity effect whatsoever was found in this experiment. A possible cause of the vanishing of the effects is the presentation of the words in a randomised order within the same experimental context. Considering the inconsistent detection of homonymy disadvantage throughout literature (Armstrong & Plaut, 2016; Eddington & Tokowicz, 2015), the lack of that effect in this experiment was less surprising. However, polysemy advantage was routinely detected (Armstrong & Plaut, 2016; Rodd et al., 2002), even when homonymy disadvantage was not. This led us to hypothesize that methodological factors may be the reasons for not detecting such a robust effect. This was further motivated by these effects being present when tested separately in Serbian (Filipović Đurđević, 2019; Filipović Đurđević & Kostić, 2008; 2021). In order to test whether mixing of ambiguity types was truly the cause of the null effects, we conducted the second experiment.

## EXPERIMENT 2

Experiment 2 was conducted to test whether the order of presenting polysemous and homonymous words was the cause of the lack of expected effects. Therefore, the aim was to test whether the order in which one encounters different types of ambiguity may affect processing. Thus, we controlled for the presentation order for the same stimuli used in Experiment 1. Instead of a randomised presentation of three word groups, we presented each group within one block. Our main comparison centred on whether or not the polysemous word block appeared before the homonymous one. Therefore, we tested two possible orders, with the addition of the unambiguous word block as the control group. The unambiguous block could be placed at the beginning or at the end of the experiment so that the two ambiguous word blocks could appear one after the other. This allowed us to explicitly test whether the ambiguity type presented first may affect the processing of the type presented afterwards.

### *Method*

*Participants.* Fifty-four first year students from the University of Belgrade – , Faculty of Philosophy, Department of Psychology took part in the experiment for course credits. All had normal or corrected-to-normal vision and were native Serbian speakers. The study was approved by the institutional review board and the data was collected in 2015. No participants from Experiment 1 took part in this experiment.

*Stimuli and design.* The same stimuli used in Experiment 1 were used in this experiment. This experiment followed a factorial  $2 \times 3 \times 2 \times 2$

design. The factors were lexicality (word/pseudoword), ambiguity (homonymous – H / polysemous – P / unambiguous - U), the order of ambiguous blocks (homonymy then polysemy / polysemy then homonymy) and unambiguous word position (beginning / end position). Combining the latter two factors, resulted in four different block orders – HPU, UHP, PHU, UPH. The lexicality and ambiguity factors were manipulated within the participants, whereas the ambiguous block order was manipulated between participants. The dependent and control variables remained the same as in Experiment 1.

*Procedure.* The task was the same as in Experiment 1, with differences in the presentation order of different types of ambiguity. Instead of fully randomised presentation of stimuli, they were presented within blocks, both in the warm-up section of the experiment, as well as the main section of the experiment. Blocks would consist of only one group of words (homonymous, polysemous, or unambiguous). Within each block, words were presented in a random order. The order of the blocks was counterbalanced, which resulted in the list of structures presented in the *Stimuli and design* section. Participants were randomly assigned to only one of the four lists.

Before the experimental trials, participants were presented with warm up trials. The structure of the practice block reflected the order of blocks in the experimental part, each block containing three stimuli and nine pseudowords overall. Reaction times measured in practice trials were not included in the analysis.

### Results

Data preprocessing and analyses were conducted following the same procedure as in Experiment 1. During preprocessing, 17% percent of the original dataset was removed, including two participants, and 12 stimuli (6 homonyms, 5 unambiguous and 1 polysemous word). The final model included random intercepts for participants and stimuli as random effect parameters. Fixed effect parameters included ambiguity and order of the homonymy and polysemy blocks. Both were treatment contrast coded with the reference level being unambiguous word and homonyms, and polysemous block order, respectively. Additionally, trial order was included to control for possible practice or fatigue effects.

The final model result summary is presented in Table 3. Once again, trial order did not reveal any effects in this experiment. However, we observed an interaction between block order and ambiguity type. Polysemy advantage and homonymy disadvantage were absent when the block of homonyms was presented first. On the other hand, while homonymy disadvantage was still absent, polysemy advantage was marginally significant in the order in which polysemes were presented first (Figure 1). The inclusion

of the position of the unambiguous word block as a factor and the three-way interaction was not justified by the data.

Table 3. Summary of the mixed effect model with inverse RT as the dependent variable, and ambiguity type, block order, and trial order as predictors.

<i>Random effects</i>					
	Variance	SD			
Items (Intercept)	.013	.114			
Subject (Intercept)	.025	.158			
Residual	.048	.219			

<i>Fixed effects</i>					
	Coefficient	S.E.	df	t	p
Intercept (Unambiguous, PH)	-1.577	.038	125.50	-41.885	.000
Trial order	-.002	.004	5483.00	-.570	.569
Homonymy	.011	.032	108.80	.356	.723
Polysemy	-.039	.031	109.60	-1.270	.207
PH	.013	.041	71.09	.320	.750
Order HP: Homonymy	.007	.016	5481.00	.453	.651
Order HP: Polysemy	.025	.015	5481.00	1.650	.099

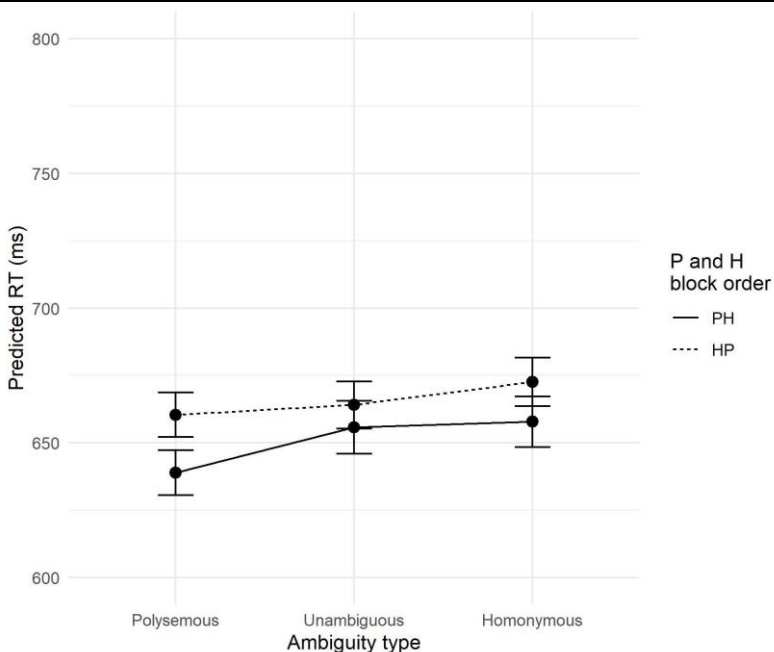


Figure 1. The interaction between ambiguity type and the polysemous and homonymous block order in Experiment 2

### *Discussion*

The second experiment revealed some trends when compared with the randomly presented and mixed ambiguous words in the first experiment. The emergence of a marginal polysemy effect when polysemous words are presented first suggests that presentation order may play a role in the absence of these effects. The task effects on ambiguity processing have been extensively explored in literature (Armstrong & Plaut, 2016; Azuma & Van Orden, 1997; Hino et al., 2002; Rodd et al., 2002). In order to further explore this variability of effects as a consequence of methodological decisions, such as presentation order, we conducted a third experiment.

### *EXPERIMENT 3*

The aim of Experiment 3 was twofold. The first aim was the replication of the findings from Experiment 2. The second aim was to expand the design to try to include the interrupted orders of presentation of ambiguous blocks, wherein the unambiguous block were to be placed between the two ambiguous blocks. This would allow us to see whether the pattern would remain the same in a separate participant sample, and whether any effects would emerge after a break between a polysemous block and a homonymous block.

### *Method*

*Participants.* Eighty-one participants took part in the experiment. All were first year students from the University of Belgrade, Faculty of Philosophy, Department of Psychology. Participants were native Serbian speakers and had normal or corrected-to-normal vision. The study was approved by the institutional review board and the data was collected in 2016. No participants from Experiments 1 and 2 took part in this experiment.

*Stimuli and design.* The same stimuli from Experiments 1 and 2 were used in this experiment. In Experiment 3, we included another level of the unambiguous words position factor, in the middle of the homonymous and polysemous blocks, making the design  $2 \times 3 \times 2 \times 3$ . The two additional block orders which were the result of this addition were the PUH and HUP orders. Again, lexicality and ambiguity were manipulated within participants, whereas ambiguous block order was manipulated between participants. All other aspects of the design remained the same.

*Procedure.* The experimental procedure remained the same as in Experiment 2, with the addition of two more block orders (see *Stimuli and design* section).

### Results

Data preprocessing and analyses were conducted following the same procedure as in Experiment 1. We discarded 13% of the original dataset. No participants were excluded, while nine words were (3 homonyms, 5 unambiguous words, and 1 polysemous word). The final model included the trial order, ambiguity type, and the order of the homonymous and polysemous blocks. Both categorical predictors were treatment contrast coded. The reference level for ambiguity type were unambiguous words, and for homonymy/polysemy order, the reference was the HP order.

The analysis (Table 4) revealed an interaction between the ambiguity type and the HP order. In both orders, the polysemy effect was present, whereas the homonymy effect was absent (Figure 2). The trial order revealed a small practice effect during this experiment. The three-way interaction between the ambiguity, homonymy and polysemy block order, and the position of unambiguous words were not justified by the data. The data did not justify the inclusion of the unambiguous block position factor either.

Taking into consideration the fact that the polysemy effect, which is typically stable, was present here and not in the second experiment, we ran the analysis on the two experimental conditions that were the only difference between the third and the second experiment (PUH, HUP). This analysis only revealed a polysemy effect in cases in which the polysemous block was introduced first.

Table 4. Summary of the mixed effect model with inverse RT as the dependent variable, and ambiguity type, HP order, and trial order as predictors.

<i>Random effects</i>					
	Variance	SD			
Items (Intercept)	.014	.117			
Subject (Intercept)	.029	.169			
Residual	.049	.222			
<i>Fixed effects</i>					
	Coefficient	S.E.	df	t	p
Intercept (Unambiguous, PH)	-1.461	.035	163.20	-41.608	.000
Trial order	-.013	.003	7101.00	-3.747	.000
Homonymy	.024	.031	106.30	.761	.448
Polysemy	-.069	.031	106.00	-2.231	.028
HP	-.057	.039	87.74	-1.472	.145
Order HP: Homonymy	-.029	.014	7100.00	-2.038	.042
Order HP: Polysemy	.032	.014	7099.00	2.335	.020

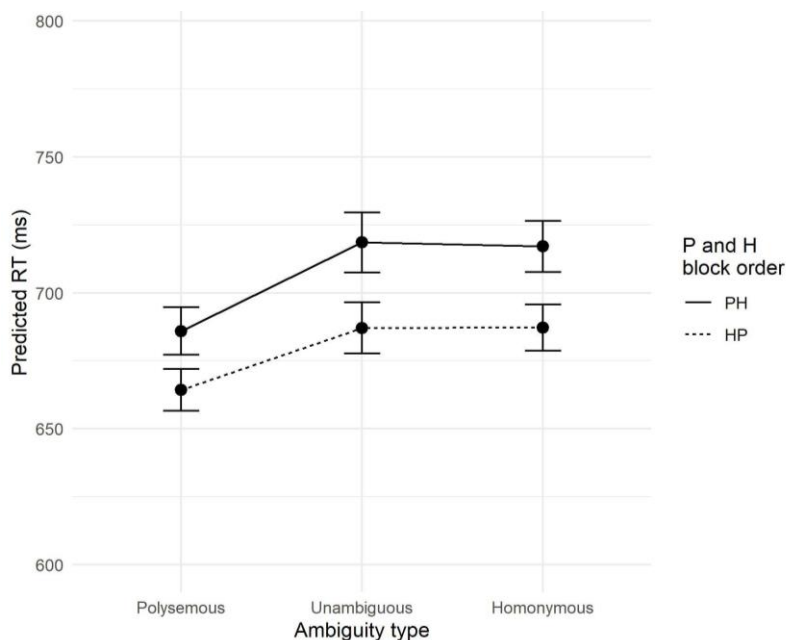


Figure 2. The interaction between the ambiguity type and the polysemous and homonymous block order in Experiment 3

### Discussion

The third experiment in this series was conducted with the goal of testing all possible orders of the three blocks. Two more orders were added to the third experiment, both having a block of unambiguous words interrupting ambiguity blocks, i.e., HUP and PUH blocks. The results revealed polysemy advantage in both ambiguous block orders, while homonymy disadvantage was, once again, absent. Firstly, the appearance of polysemy advantage in this experiment and not in the previous one, raised the question of whether the two additional experimental conditions were driving the effect. Considering the fact that the three-way interaction was not justified, and the fact that the effect was present in just these two additional blocks, we may rule out the possibility that the position of the unambiguous block affected ambiguity effects. On the other hand, the fact that polysemy advantage was detected in both orders of ambiguous blocks goes against the hypothesis that order plays a major role. Secondly, the lack of homonymy disadvantage was not a surprising pattern of results, considering the additional factors that are required in order to reliably capture it (Armstrong & Plaut, 2016; Eddington & Tokowicz, 2015; Hino et al., 2010; Rodd et al., 2002).



## GENERAL DISCUSSION

The aim of this study was to attempt to put together, in a single experiment, the previously separately tested polysemy and homonymy effects in Serbian (Filipović Đurđević, 2019; Filipović Đurđević & Kostić, 2008; 2009 ;2017; 2021; Mišić & Filipović Đurđević, 2021). We tested whether the experimental context contributed to effect detection. This study was a conceptual replication with some methodological questions but, at its core, it was focused on the mental representations of ambiguous words. Even though we initially aimed to replicate the effects of separate experiments within a single study, this experiment revealed that there is more complexity to lexical ambiguity effects.

Surprisingly, both effects were absent in Experiment 1, so we conducted two more experiments, relying on the hypothesis that the presentation order and the switch from related to unrelated representations in the same task might affect processing. In those experiments, we controlled for the order of presentation by moving away from randomly mixed polysemous, homonymous, and unambiguous words, and towards each group of words being presented within a block (Experiments 2 and 3). Additionally, the order of the ambiguous word blocks was controlled (Experiments 2 and 3) and the effect of the position of the unambiguous block was monitored (Experiment 3). Experiment 2 revealed only a marginal polysemy advantage when the polysemous block was presented first, while Experiment 3 revealed a strong polysemy advantage in both ambiguous block orders. No homonymy effect whatsoever was detected in any of the three experiments.

Overall, the initial hypothesis that the experimental context affects ambiguity processing was confirmed, since polysemy advantage was detected in later experiments. This hypothesis came from different task effects that were detected throughout literature (Armstrong & Plaut, 2016; Eddington & Tokowicz, 2015; Hino et al., 2010; Rodd et al., 2002). The differences between the first experiment and the other two experiments further point towards the necessity of being aware of different task characteristics in order to reliably detect ambiguity effects.

Going into more detail regarding the particular aspects of the task, Experiment 2 suggests that controlling for the order of presentation may be the necessary condition for ambiguity effects detection, but Experiment 3 seems to disprove that suggestion. Detecting polysemy advantage in both orders rejected the idea that the order in which we encounter different ambiguity types during the experiment affects polysemy advantage. On the other hand, homonymy disadvantage was not detected in any of the experiments. As previously stated, this may not (only) be a consequence of the mixed random presentation of ambiguity types, but a general issue of homonymy disadvantage needing longer processing in order to emerge at all (Armstrong & Plaut, 2016).

Further evidence for experimental context playing an important role was provided by the fact that the stimuli were taken directly from two experiments in which the two ambiguity effects were demonstrated separately (Filipović Đurđević, 2019; Filipović Đurđević & Kostić, 2008; 2021; Mišić & Filipović Đurđević, 2021). Also, when different ways of describing ambiguity were used, such as number of meanings/senses, measures describing meaning/sense probability distributions, etc., the effects were present and reliable. This approach also gives better insight into ambiguity processing, considering the fact that matching groups by many variables when comparing ambiguity types as groups may lead to multiple statistical deficiencies (Baayen et al., 2008).

From a theoretical standpoint, these findings cannot be interpreted in a clear manner. None of the theories presented in the *Introduction* section make any claims regarding the influence of the mixed-presentation context, or the order of presentation of ambiguity types. However, the two classes of models could be distinguished based on the potential to account for the observed pattern of data. Our findings are not in line with the response system account (Hino et al., 2006, 2010) since these theories do not predict differences between polysemy and homonymy to begin with. Furthermore, they state that the amount of semantic information representing evidence for the correct response is not affected by sense/meaning relatedness. In our second experiment, we detected both polysemy advantage and homonymy disadvantage. Such effects would not be predicted by this account, considering that relatedness effects are neither predicted in a lexical decision task nor consistently observed in the experiments of that group of authors (Hino et al., 2006, 2010). Similarly, semantic competition models (Armstrong & Plaut, 2016; Rodd et al., 2004) do not predict the experimental context effects detected in our experiments. Firstly, the PDP models explain the opposite pattern of polysemy and homonymy effects by postulating cooperation and competition between representations within one ambiguous word. Experiments throughout literature observed regular polysemy and homonymy effects, regardless of both ambiguity types being present in the same experiment, or even randomly mixed (Armstrong & Plaut, 2016; Klepousniotou et al., 2008, 2012; Klepousniotou & Baum, 2007) Both groups of theories only describe processing and representing a single word. If any wider context is presented, it is always to probe a single sense/meaning, never to make any connections between different words. To the best of our knowledge, none of the current theories explain such findings, and no similar results have been reported. However, one of the semantic competition models, the SSD model (Armstrong & Plaut, 2016) allows the dynamics of the processes. For example, the processing of polysemous words is expected to be faster, and therefore presenting polysemous words in the first block could bring the system into the fast-processing zone without leaving

enough time for semantic competition (and cooperation) effects to emerge. Along the same line, presenting homonyms in the first block would bring the system into slower processing and give more time for semantic competition (and cooperation) effects to emerge. The results of our Experiment 2 are in line with this. However, Experiment 3 did not replicate the pattern. Having in mind the mixed results we obtained, we could suggest that even though the SSD model does not explicitly account for the experimental context effects, it may be a possible perspective for future research on this topic.

### CONCLUSION

To conclude, our study found that polysemy advantage and homonym disadvantage are affected by the experimental context. Our attempt at controlling the order of the ambiguous word blocks did succeed in allowing polysemy advantage to emerge. Because it was detected in both orders of polysemy and homonymy blocks, we may conclude that this effect is affected by this order. The lack of homonymy disadvantage cannot be disentangled from the general difficulty of detecting this effect. None of the currently dominant theories such as the response-based account of Hino et al. (2006, 2010) or SSD model (Armstrong & Plaut, 2016), can account for our findings. The experimental context effects are more in line with the SSD model (semantic competition account) since it allows for dynamics during ambiguous words processing.

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## УТИЦАЈ ЕКСПЕРИМЕНТАЛНОГ КОНТЕКСТА НА ЕФЕКТЕ ВИШЕЗНАЧНОСТИ РЕЧИ

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### Резиме

Претходна истраживања су показала да се различити типови вишезначних речи обрађују на различите начине у задатку лексичке одлуке. Полисемичне речи (више повезаних значења) се обрађују брже од једнозначних речи, док се хомоними (више неповезаних значења) обрађују спорије од једнозначних речи. Овај склоп резултата реплициран је и у српском језику, мада у одвојеним студијама. Циљ овог рада био је да се испита да ли се ови ефекти могу поновити када се обе врсте вишезначности налазе унутар исте експерименталне листе.

Први експеримент није показао разлику у обради ниједног типа вишезначности у односу на једнозначне речи. Овај налаз је у складу са великим делом литературе, у којој је пронађено да се у различитим експерименталним задацима бележе различити резултати. На основу овога, закључено је да сам експериментални контекст (мешана презентација различитих типова вишезначности), може утицати на резултате.

Друга два експеримента настојала су да контролишу управо сам експериментални контекст. Све три групе речи приказане у првом експерименту (полисемичне речи, хомоними и једнозначне речи) приказане су унутар истог блока, док је редослед блокова био контрабалансиран. Циљ овога је био да се испита да ли контролисање редоследа излагања може да помогне у бележењу ефеката вишезначности. У другом експерименту забележен је маргинални ефекат полисемије, док је у трећем забележен ефекат полисемије у оба редоследа блокова са вишезначним речима.

Имајући у виду да се у литератури типично најчешће бележи ефекат полисемије, док су за јављање ефекта хомонимије потребни додатни услови, резултати забележени у три изложена експеримента показују да контекст утиче на јављање ефеката полисемије. Иако контрола редоследа излагања омогућава јављање ефекта полисемије, није довела и до јављања ефекта хомонимије. Овакав склоп резултата указује на то да су за потпуну репликацију експеримената у којима су оба ефекта забележена истовремено, потребни другачији експериментални услови.

## FOCALIZATION IN MUNRO'S “SOMETHING I’VE BEEN MEANING TO TELL YOU” – COGNITIVE POETICS IN PRACTICE

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### Abstract

The paper explores the dimensions of focalization from the point of view of cognitive poetics leaning on the idea that focalization directly affects the reading experience and, therefore, the reception of the narrative discourse. The importance of deixis, their referential value in the storytelling process and reception, is illustrated on the example of the short story “Something I’ve Been Meaning to Tell You” by Alice Munro. Focalization is treated as a rhetorical instrument modifying various layers of the narrative discourse and strategically guiding the process of reception. The first section presents the theories relevant for the understanding of the concept of focalization, and it includes a short overview of deixis from the point of view of cognitive poetics. The analysis of the short story by Alice Munro follows to serve as an illustration of the rhetorical flexibility of storytelling. Finally, the concluding remarks offer arguments against the conventional comprehension and interpretation of third-person narration.

**Key words:** focalization, cognitive poetics, storytelling, deixis, rhetoric, short story, Alice Munro, Canadian Literature

## ФОКАЛИЗАЦИЈА У КРАТКОЈ ПРИЧИ АЛИС МАНРО „НЕШТО САМ ХТЕЛА ДА ТИ КАЖЕМ“ – ТУМАЧЕЊЕ ИЗ УГЛА КОГНИТИВНЕ ПОЕТИКЕ

### Апстракт

У раду се испитују димензије фокализације из угла когнитивне поетике, и то полазећи од идеје да фокализација директно утиче на искуство читања, односно на рецепцију дискурса наратива. На примеру кратке приче ауторке Алис Манро, „Нешто сам хтела да ти кажем“, показује се важност деиктика и њихове референцијалне вредности у процесу приповедања, а самим тим и у рецепцији текста. Фокализација се на овај начин третира као реторички инструмент који

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утиче на различите слојеве наративног дискурса, а стратешки наводи процес рецепције наратива. У првом делу рада представљају се теорије релевантне за разумевање концепта фокализације. Затим се даје кратки преглед погледа на деиксе из угла когнитивне поетике. Овај део прати анализа кратке приче Алис Манро као илустрација реторичке флексибилности приповедања, и на крају, у закључку се дају аргументи против конвенционалног схватања приповедања из трећег лица.

**Кључне речи:** фокализација, когнитивна поетика, приповедање, деиксе, реторика, кратка прича, Алис Манро, канадска књижевност

## INTRODUCTION

The paper examines a peculiar case of third-person narration focalized from within the consciousness of the protagonist of Alice Munro's short story, "Something I've Been Meaning to Tell You" (first published in 1972), with the view of explicating how the subtlety in the use of deixis renders the narrative discourse an interpretative challenge for the reader in transgressing literary conventions. In the introductory section, the paper presents valuable insight from cognitive poetics, and contemporary studies of rhetoric inspired by an interdisciplinary approach based on poststructuralist narratology and cognitive sciences. On the one hand, cognitive poetics offers insight into the mechanisms of storytelling and reception focusing on deixis as discourse-building elements upon which reception itself relies heavily, and the rhetorical approach to text that offers explanations so as to the effects the discourse produces. The sections on deixis and focalization are followed by the analysis of the short story, with the focus on the manner in which the author designs an enigmatic discourse. The concluding remarks summarize points against conventional third-person narration interpretation.

### *Considerations from Cognitive Poetics*

Cognitive poetics focuses primarily on the process of reading, the very experience of the process, but by extension, it examines those aspects of cognition involved in the practice of storytelling. In *Cognitive Poetics in Practice* (2003), Gavins and Steen see cognitive poetics as methodologically equipped to consider the processes whereby art is experienced in a unified way – by examining the cognitive aspects of the experience regardless of the medium of transmission. Their argument is that art forms, "the structures of work of art" (2003: 1) should be examined in the effects they produce as a means to reach a greater insight into how the process of reception functions. In *Cognitive Poetics* (2005), Peter Stockwell sets the objective of this interdisciplinary approach to be the experience pertaining to the active process of reading and interpretation (1) and further defines this experience as something that happens "when we want



to *think about what we are doing* when we read, when we want to reflect on it and understand it" (2). Moreover, he distinguishes between active participation in the reading process that involves interpretation, "the science of reading" (Stockwell 2005: 2), and active (emotional and intellectual) participation that does *not* necessarily involve critical analysis of the narrative in question. We can notice that the two modes of reading happen simultaneously, but to different degrees depending on the literary competence of the reader. What Peter Stockwell calls "deliberate control over what we read" involves knowledge not only of conventions present in the specific genre – anticipation of sorts typical to the nature of literary work being read, but also "attentiveness" (2005: 20) on the part of the reader that is "partly a matter of experiential learning, and, with certain patterns [...] a skill" (2005: 20). Stockwell's attentiveness implies a process whereby the reader is guided through an array of figure and ground elements with the aim of keeping attention alive and facilitating the understanding of the narrative. Saliency, or the capacity of the reader to distinguish the 'important' from the 'less important', relies on many factors, among which are: the reader's previous knowledge on the subject, emotional investment of a specific kind – or the psychological effect that the narrative has on the reader; but also the successful use of deictic cues in the narrative, which is precisely the focus of this paper.

In *The Rhetoric of Fictionality*, Richard Walsh argues that fictionality, as a narrative feature, presents a resource utilized by speakers to put into a specific structure, intentionally, the content of their thoughts by means of rhetorical devices (2007). Fictionality, in Walsh's terms, along with typically structuralist narrativity or cognitivist emplotment, almost coextensively reflects the human ability to shape their thoughts and feelings into creative and novel cognitive structures and mental spaces colored by individual and personal motivations. Walsh argues that storytelling, as a process, does not directly present the reader with a story in structuralist terms. In the process, the reader encounters a discourse that may motivate a specific understanding of the text by use of various rhetorical devices in different degrees, but it is the reader's sense-making capacity that enables the formation of the so-called cognitive structure. This does not, however, mean that the implied author, or author, bears no responsibility for the overall interpretation of the text. Margaret Freeman, for example, notices that both literary criticism, New Criticism, post-structuralism, etc., attempt in their own specific ways and for their own reasons, to deny the author any intentionality (Freeman 2009: 5) considering that the author is not the character or story she or he creates, nor do they need the first-hand experience to relate an event or idea. However, the author ultimately is the creator of the text and it is the "author's conceptual attitudes and motivations" (Freeman 2009: 5) that are the sinews of the discourse, and the process and mode of narration are particularly

important from both these authors' this point of view. The reading experience could be viewed as the other side of the storytelling coin. The rhetorical approach to narrative, and especially Richard Walsh's theory of the reader actually extracting his own story from the offered discourse (2007) which is coextensive with Peter Stockwell's among others, presents yet another important aspect of cognitive linguistics that cognitive poetics and narratology utilize for in-depth analysis of narratives. The manner in which the process or experience of reading works, as argued in cognitive poetics, has direct correlation to propositional attitudes studied by the philosophy of language and cognitive linguistics. According to John Searle in his study *Intentionality*, propositional attitudes, such as thoughts, beliefs or desires among other, possess a kind of motivation to be directed at one thing rather than another (1983) whereas sentences themselves, the ink on the paper that they are written or typed in, etc. are not by themselves propositional attitudes, and therefore do not possess the feature of intentionality. Once they are perceived or experienced by a subject, it is only then that they are given meaning. Essentially, the narrative discourse itself is an object, whereas the reader or the subject experiencing it is the source of the cognitive structure that would be known as the story. However, the very experience of reading must be examined with the view of two processes: reading the narrative discourse – the sequences of sentences whereby the subject employs a specific cognitive ability enabling them to position them temporally and spatially, but also, the process of immersion by which the subjects, albeit knowing that it is not real-life communication, allow themselves to experience the narrative as if it were true. In his study *Rhetoric of Fictionality*, Walsh sees this "suspension of disbelief"<sup>1</sup> as fictionality (2007). Basically, fictionality as a resource is recognized by the experiencing subject in the form of genre-specific, cultural practices associated with literature, etc. The subject is well aware of the fictional nature of the world of the narrative discourse, but consents to disregard it and perceive it as a real communicative act.

#### *DEIXIS AND FOCALIZATION – THE CLUE IN THE TITLE*

Cognitive poetics sees deixis, or patterns of deictic expressions, as "the capacity that language has for anchoring meaning to a context" (Stockwell 2005: 41) stemming from the idea of the embodiment of perception. Moreover, deixis do not simply refer to those aspects of the context that pertain to space and time and enable the positioning of the characters and narrators, but rather, deixis implicitly regulate the position of

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<sup>1</sup> A term coined by Samuel Taylor Coleridge in 1817 to stand for the voluntary effort on the part of the reader to suspend their critical judgment on the possible implausibility of the narrative.

the author and reader in the reading process. More precisely, deixis here will be examined with regard to focalization: the point of view from which the narrating instance tells the story and strategically uses deixis – purposefully, in order to manipulate meaning in such a way that one subjective perspective, of the character or narrator, is put forward rather than another; or, to create such rhetorical effects whereby a certain interpretation is imposed on the reader by means of interpellation, etc. Specifically, when the narrator addresses the narratee in the second person (interpellation), or when the author intrudes by making a comment that is visibly addressed at the reader in order to influence the overall interpretation of the text, it is achieved by deixis. Basically, the use of deictic expressions shifts the reference point of view in the relation of the reader to another (focalizing) subject or object in the narrative discourse, thereby enabling, first of all, for the narrative discourse itself to progress from one point to another; and, second of all, the productive involvement in the discourse on the part of the reader – their being able to follow the sequencing of events, characters and their relations successfully.

Focalization has been one of the most problematic areas in both structuralist and post-structuralist narratology as it seeks to systematize the modes in which what is referred to in the narrative discourse is presented – from which point of view, vantage point, perspective, voice, mode, etc. – all being highly recycled, reformulated and often disputed terms. One of the most systematic structuralism-inspired approaches is that of Gérard Genette who sees the problem as that of “whose point of view orients the narrative perspective” (Genette 1980: 186) – who the speaker is, whether this entity belongs to the story world or not (homodiegetic and heterodiegetic; internal and external focalization, zero focalization, etc.), and Genette’s criterion is that of knowledge-information relation. Namely, the narrator(s) possesses certain knowledge of the story-world, the characters and events, and the nature of the narrator’s role can be assessed by examining what kind of information this entity<sup>2</sup> provides and whether it is natural or plausible that the entity has knowledge of it. However, such classifications prove to be inadequate or offer an incomplete account of the process of narration since one of the often encountered issues pertaining to focalization is narration from the third person perspective. In situations where the story is told by a seemingly unidentified narrator, but from a specific perspective of a character, or even multiple perspectives, Genette’s roles cannot fully account for the created effect, and Alice Munro’s short story “Something I’ve Been Meaning to Tell You” serves as an excellent illustration of this kind of

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<sup>2</sup> Gerard Genette does not consider the narrator to be an entity per se, but for lack of a more appropriate term, the author of this paper will loosely keep ‘entity’ to stand for the narrating instance.

perspectival ambiguity. Granted, many a theorist has proposed specific models or different terminology regarding this and other focalization issues. For the purpose of the analysis in this paper, Mieke Bal's model is used because it recognizes focalization as the "layer between the linguistic text and the fabula" (1999: 146). In other words, focalization represents the manner in which the reader is allowed to follow the narrative progression from one spatial or temporal, or perspectival, point to another, by means of subjects referring to specific perceptible or imperceptible objects. In her reformulation of Genette's model, this author focuses on who 'sees' and 'speaks' as well, but she distinguishes between the focalizing subject, and the content of focalization of the very subject – the focalized object. One of the differences in Bal's viewpoint against Genette's, and the one that can be discussed further in relation to Munro's short story, is whether there is such focalization without the focalizer. Namely, Genette does not see the necessity for an instance of the focalizer per se, while Bal's conception of focalization clearly distinguishes this instance – be it unidentified or somehow mutable. Furthermore, in Munro's "Something I've Been Meaning to Tell You," the problematics of focalization reveal the plasticity of the narrating modality – the focalizing perspective belongs to the focalizing subject, whereas the voice producing the focalization, with regard to deixis, suggests an unidentified heterodiegetic source, or rather strives to produce that particular effect. Mieke Bal's theory of focalization, the conception of focalization as co-extensive with the process of perception, implies the idea that perspective "covers both the physical and the psychological points of perception" (1999: 143), which further leads to the conclusion that any form of focalization, and even hypothetical, must be considered a subjective account, even if the subject is unknown or imperceptible to the reader. The question that follows is how it is that the readers decide, in these cases, where the zero referent point is, and whether it has any relevance to the reading process. Even descriptive elements in narratives can have rhetorical effects, that is – be shaped in such a way so as to present one aspect on the account of another, which further indicates a subjective perspective and a deictic center. In such cases where no clear indication of the focalizing entity's identity is given, we can also notice a tendency of the reader to override this obstacle in the gap filling process (schemata, or scripts, but also typical situational patterns containing cultural or stereotypical ideas about things in general). This is particularly relevant not only for the short story genre per se, as a genre that relies heavily on open-ended framing and reader's gap-filling, but the aforementioned story which clearly illustrates the extent to which interpretation depends on the reader's subjective experience. In the rhetorical sense, the deictic center may also be the overall cultural or ideological, or other, pattern in the absence of a perceivable entity so its relation to the known narrator(s) or characters can then be inferred based on the overall attitude.

*MUNRO'S "SOMETHING I'VE BEEN MEANING TO TELL YOU"*

In *Coincidence and Counterfactuality*, Hilary Dannenberg discusses readerly immersion – a particular aspect of the reading experience in terms of “the reader’s belief in the narrative world” (Dannenberg 2008: 21), and more precisely the cognitive ability to transfer oneself into a mental environment generated by the narrative discourse. The “mental environment” (Dannenberg 2008: 21), generated by a very specific mode of description, recollection, etc., in terms of the diegetic and the non-diegetic, narrative and non-narrative elements, provokes suspicion in the case of Munro’s short story and precisely because of the deictic ambiguity of the narrator. Dannenberg notices that the reader’s recognition of the subgenre occurs in the very process of immersion (Dannenberg 2008: 19), so the question is how it is possible for the reader to make such classifications that distinguish between what is, as Dannenberg notes, “realism” or “metafiction”. In other words, this author problematizes what text elements define the manner in which the reader makes connections between the narrator, characters, the events of which they may or may not be participants, the role of the implied author, the awareness of the narrator that they are telling the story, etc. Therefore, this paper focuses on deixis as text-elements that do not only facilitate and guide the reader’s role as the addressee or implied reader, but also their role against the text with regard to what is story-real, story-fictional or meta-fictional. In the case of “Something I’ve Been Meaning to Tell You,” it is not the fictionality of the story itself that comes to the forefront, but the fictionality of the account of the episodes within the story – it is the problematics of narration that provide grounds for the open-ended interpretation and invite suspicion in terms of its meta-quality.

The story of “Something I’ve Been Meaning to Tell You” is set in a small town, Mock Hill, and it features a number of characters whose lives, over a span of three decades, are intertwined in a tragic love story and an unrequited-love story. The story seemingly explores the complex relationships between the four characters (Et, Char – the sisters, and Arthur and Blakie Noble, Char’s husband and possibly lover). However, upon close reading, it becomes apparent that the accounts featuring these characters are actually episodes related from the perceiving ‘eyes’ of one of the characters, Et. The accounts highlight events from the period of when they were teenagers, throughout their adult life, and ultimately, in their old age when one of the characters, Char, eventually dies, and her sister moves in with her husband, almost as if taking the deceased woman’s role. The thread around which the narrative revolves, the two sisters’ relationship, becomes disturbingly problematic due to the suspicious circumstances of her death, but the problem is that outwardly the account provided via third-person narration, from a seemingly extra-diegetic position, conceals the actual focalizing subject – the possibly devious, Et.

This third-person narrative begins almost as if in medias res, with the account of a field trip organized by Blakie Noble, a character whose description, background and motives are provided by the narrator using both narrative and dramatic elements. It is particularly important to note that dramatic elements also represent debatable memories of the focalizing subject, but present a challenge upon first reading because of the convention of the mode of representation. Whereas the deictic references would normally reinforce the interpretation of the narration being performed by an omniscient entity, potentially an external (heterodiegetic) one to the characters' world, this mechanism soon turns into an ambiguous mode of operation of the narrative flow. More specifically, it becomes evident that the focalizing subject of the narrating entity is, in fact, Et – the character not only implicated directly or indirectly in the related episodes, but rather the voice behind the entire story. One of the cues that particularly unmasks the 'true identity' of the narrating voice, is the chronological inconsistency or simply the absence of chronological order that resembles the flow of consciousness, and in this case, of the character, who has potentially caused a tragic death.

In *The Fiction of Alice Munro – An Appreciation* (2008), Brad Hooper suggests that narration in "Something I've Been Meaning to Tell You" is not fixedly focalized. Specifically, that "the title story is a third-person narrative, with alternating points of view, including omniscient views" (Hooper 2008: 46). The problem with this interpretation of focalization in the story is that such a loose perspectival anchor would provide for a clear variety of potentially conflicting or disparate accounts or views, and yet nowhere in the narrative discourse can such instances be found. In other words, the reader is only allowed accounts of events witnessed, heard of or contemplated by one character in particular, which is clearly supported by the fact that even descriptive portions of the discourse are related against the already-in-the-past contemplations by one character – the focalizing subject, Et. Clearly, being told from a third-person perspective, the narrative discourse merely masks the motivation behind the ambiguous storytelling thereby slightly entering the space of the detective or whodunit subgenre, but also, as mentioned earlier in terms of Dannenberg's explication of readerly immersion, allowing this playfulness to unmask the narrator and their metafictional moment in the story. As Dannenberg mentions on the account of the connection-making strategies inside the text, "plotting principles" (2008: 26), in terms of their rhetorical and immersion-enabling functions, show that both immersion (and expulsion) and interpretation of the narrative discourse largely depend on causal relations between elements in the text – "world-cohesive causation patterns" (2008: 42) which are socially and culturally dependent factors in the text. We may, therefore, safely assume that the entire narrative discourse represents the world-view of Et, which renders the

third-person mode a mere ruse. The events and characters pertaining to the narrative discourse do not actually exist *there*, in the discourse narrated, but are merely referred to as fragments of the character's consciousness.

Generally speaking, the interpretation of the text, as well as the satisfaction upon reading it, does not only emerge out of the plausibility of the given story, but rather the possibility of its having alternative endings. It seems that the significance of the linguistic skills pertaining to understanding deictic relations corresponds to the human cognitive ability to "generate multiple-world versions" (Dannenberg 2008: 47), or conceive and anticipate, multiple possible outcomes of the story. In the case of Munro's short story, which heavily relies precisely on the readers' willingness to not only accept the plausibility of the third-person account (initially), but also to themselves experience an epiphany of the open-end upon the realization that the deictic center of the narrator, the third person, may be understood as a maneuver. This narrative strategy, the ambiguity achieved by disguising the focalizing subject, allows the narrating entity to develop a rhetorical position in favor of the focalizing subject, at the expense of the objects. This is possible because deixis serve as connectors operating both locally, on the level of the discourse, but also externally. However, even if we consider the non-linguistic basis for deixis to be the embodied experience of the world, or if we consider them as a closed set of words, language tools, to be used with the view of fulfilling a grammatical function, it also seems plausible that they depend largely on the "psychological, cultural, and sociological conditions" (Fauconnier 1994: 10), and thus influence our comprehension of linguistic phenomena in specific ways. Surely, deictic expressions are not uniquely accountable for the general ability to follow narrative progression and interpret it successfully, but they set the groundwork for meaning generation on the basic linguistic level. Furthermore, as is the case with Munro's short story masterpiece, the use of deictic expressions in a particular context enables overall comprehension. Without expressions that would establish the zero-point of reference (Stockwell 2005: 43), expressions such as 'I' and 'you' or 'here' and 'there', the building of context itself would not be possible, and meaning would not be achieved considering that cognitive structures would simply flow aimlessly, unspecified in terms of what it is that they relate to. Therefore, the initial strategic use of third-person narration promises objectivity and guides the reader in the direction of suspending suspicion towards the supposed naiveté of the character of Et. And yet, ultimately, it is the deictic marking in the very title of the short story, and at the end of the narrative discourse, the 'I' (referring to Et, the character and the focalizing subject) that reverses the strategy and destabilizes the credibility and believability of all of the episodes, by extension allowing for a number of alternative interpretations not only of the end-

ing, but the episodes themselves. Postmodern writing, it could be mentioned, thrives on such indeterminacy, overflowing the reader with purposefully destabilized cognitive structures.

In “Narrative Comprehension and the Role of Deictic Shift Theory,” Erwin Segal suggests that narrative discourse can be analyzed in terms of “sentence and paragraph structure, tense, intersentential connectives, lexical choice, pronominalization, and other textual details” (in Duchan et al. 2009: 16), which is not entirely novel in narratological investigation of literary works. Such discourse analysis pertaining to literature has been done almost intuitively. Segal explains the ability of the readers to immerse themselves in the fictional world as the “deictic shift” that enables them to “get inside of stories and vicariously experience them” (Duchan et al. 2009: 14-15). Stockwell explains this on the basis of the ability to project deixis (2005: 43) by which the reader can follow multiple reference points at once, as well as be aware of their interrelatedness. Furthermore, the characters in narratives are not relationally fixed to the narrative discourse itself, but rather their reference points flow according to the relations they bear to events, other characters, or socio-cultural phenomena. In the said story, the deictic center can, again, be found only in Et, which also works on the thematic levels – both the overt and covert. Deictics enable the readers to temporally, spatially and person-wise, navigate events in the world of the story:

[I]n fictional narrative, readers and authors shift their deictic center from the real-world situation to an image of themselves at a location within the story world. This location is represented as a cognitive structure often containing the elements of a particular time and place within the fictional world, or even within the subjective space of a fictional character. (Duchan et al. 2009: 15).

Ultimately, deixis are in the service of positioning the reader against the narrative-specific notions pertaining to the real world, but also against the narrator, characters and the very story world of the narrative. Segal’s, and others’, interpretation of the value of deictic centering is particularly useful in determining the *fixedness* of interpretation, and “Something I’ve Been Meaning to Tell You” is illustrative of how the deictic shift, relying on the reader’s experience and expectations of the genre, can be manipulated in order to rhetorically, or otherwise, disturb interpretation.

Whereas the deictic center is kept out of plain sight of the reader until the very end of the narrative discourse, both the timing of the particular episodes related in the course of the narrative discourse, and their lexical and attitudinal characteristics suggest a deictic center within the character of Et, and therefore, ultimately, reveal an entirely subjective and rhetorically charged account – contradictory to the convention implied by the superficial deictic reference strategy.



The short story in question has its chronological order, the narrative discourse does not. It is a stream of contemplations and memories of the main character, as if glued together by her erratic and obsessive memory. These events or memories seem unrelated if the supposedly naively truthful narrative of Et is taken uncritically, and since they are presented in episodes triggered by particular diegetic stimuli, their order in the narrative discourse must be analytically assessed by the reader in terms of their rhetorical dimension. The narrative discourse begins in the past already – thirty years after Blaikie and Char had had a romantic relationship, and ends with Et and Arthur living together after Char's death, which is the time many years after the moment of the beginning of the narrative. The episodes that make the narrative, however, cover the span of the period before Blaikie Noble or Arthur ever came into the picture. The 'photograph' that triggers Et's memory and the account of the washing day are together, chronologically, the first event in the story. The transition of Et from being the younger sister of Char, into awareness of her sister's beauty, as well as jealousy that would, in the next thirty years, evolve into a devious provocation, possibly murder or suicide, but certainly Char's death. The description of the photograph, as well as the overall atmosphere and 'feel' of the occasion and situation (Munro 2004: 7) allows the insight into the source of the entire story. The narrator uses the third-person strategy to relate Et's innermost thoughts, and in those terms, the maneuver operates perfectly in creating the illusion of objectivity since the characters are observed as if from a neutral standpoint – the episode being a contemplation about a photograph. However, the focalizing subject's perspective is revealed through the choice of scenes and imagery: Char is described through the eyes and mind of Et in her movement, but also in relation to Et's perception of her sister's personality and sensibility. At the same, Et's thoughts, unavailable when it comes to other characters, are revealed by the voice of the narrator. This would not problematize objective third-person narration, nor omniscience, if the story was not told exclusively from one focalizing diegetic position. What potentially complicates the interpretation of the narrator's perspective are the non-narrative elements, such as the reported conversations (dramatic elements), such as in the scene with the reference to Arthur's, one of the character's, namesakes from a legend (Munro 2004: 4). Even though dramatic elements normally provide a more accurate account of the events – from the perspective of the omniscient narrator – these bits pertain to the specific scenes related from the point of view of Et, or, more precisely, from her intentionally or unintentionally faulty memory. The question that becomes foregrounded is whether the non-narrative elements actually occur in the reality of the story-world, or whether they are fragments of Et's memory – possibly compromised by her emotions, motivations, the rhetorical strategy used to cover up a guilty conscience, or

other. The use of deixis in both narrative and non-narrative elements of the story creates a superficial feeling that the narrator is unequivocally relating an account uninspired by the particular intention of the character. However, the deictic center of the title itself, as well as the very closure of the story, reveal that the uncritical approach to the narrative discourse might limit the scope of interpretation. In the title, “Something I’ve Been Meaning to Tell You,” the deictic reference *I* subtly nudges the reader in the direction of thinking that there might be a confession by one of the characters solving the puzzle of the open-ended story. Additionally, it also retrospectively calls for an assessment of the focalizing positions – both at the level of individual sentences, and then, at the level of the entire discourse.

The chronology of the narrative segments suggests a rhetorical intent on the part of the focalizing subject. More specifically, Blaikie Noble (the first focalized object in the narrative) is from the very beginning presented as a womanizer, which is clearly both Et’s impression and rhetorical goal in interactions where she mentions him, especially to her sister Char. Interestingly, she would comment of the said character somewhat differently when it comes to Arthur. The object-bound accounts are only subtly re-examined, again from the focalizing eye and mind of Et, as her memories progress.

Char and Blaikie seemed to her the same kind of animal – tall, light, powerful, with a dangerous luxuriance. They sat apart but shone out together. Lovers. Not a soft word, as people thought, but cruel and tearing. There was Arthur in the rocker with a quilt over his knees, foolish as something that hasn’t grown its final, most necessary, skin. Yet in a way the people like Arthur were the most trouble-making of all. (Munro 2004: 16)

Third-person narration, although it need not necessarily remain objective or one-subject-bound, in this particular narrative discourse, offers no insight into the focalizing perspectives of other characters. Char and Blakie remain “the same kind of animal” throughout the discourse, enabling the focalizing subject to create a suitable background to explore the short story convention by leaving it open-ended, considering the meta-fictional character of the narration. Moreover, the *whodunit* impulse that the strategic narration achieves relies heavily on the focalizing center never shifting: it is Et’s perception of Arthur that leads to an alternative interpretation of the poison bottle that she supposedly discovers in the cupboard – it is the ambiguous narrative voice that complicates the reliability of narration. For illustration, in the scene where the protagonist smells the rodenticide (Munro 2004: 15), the supposed spontaneous insight covertly alludes to her previous mention of Char and Blakie as animals (Munro 2004: 16).

Likewise, in the episode where Et's traumatic experience revolving her brother's death becomes known, the omniscience of the narrator reveals ambiguity that can be interpreted only in two ways: Et is the only focalizing subject, and object at the same time since it is only her inner world that is related by the narrator; or that the strategy used to tell the story of Et is based on a simple narrative trick relying on intentional deictic obscurity. The purpose of such a ploy in this case, then, is to achieve the typically postmodern effect of the short story – one that opposes resolution and keeps the reader in the process of the story. Such an effect would not be possible had Munro allowed her focalizing subject, the diegetic entity – the protagonist, Et – to address the reader openly through the voice of the narrator.

She [Et] didn't like the bleak notoriety of having Sandy's drowning attached to her, didn't like the memory people kept of her father carrying the body up from the beach. She could be seen at twilight, in her gym bloomers, turning cartwheels on the lawn of the stricken house. She made a wry mouth, which nobody saw, one day in the park when Char said, 'That was my little brother who was drowned.' (Munro 2004: 8)

Instead, the protagonist's inner world is indirectly revealed to the reader through narration that stimulates doubt precisely through imitating objectivity. The resistance to closure, which would be the resolution of the circumstance of Char's death, relies on a single thought by the protagonist, which is, incidentally, the title of the story indicating that focalization is sourced from this particular character. Furthermore, the crafty manner in which characterization is achieved indirectly through Et's experience of the other characters suggests that even generalizations come from this character's perception of herself, other people, and her projections onto them. The representation of all the other characters – Char, Arthur and Blakie – is achieved through the prism of the focalizing center of the story, which is not the omniscient narrator, but a diegetic entity – Et.

To illustrate, the story opens with an inherently dramatic and non-narrative element per se, guiding the reader to decode this particular narrative element in terms of an objective account of the event in the story. However, even if this instance, as well as other dramatic ones, might be interpreted as related by an external source, it still supports character-bound focalization, to use Bal's term. The very choice of the dramatic bits comes from Et's own memory, and the experience of the dramatic elements is expressed through one single character's internal comprehension and judgment of the circumstances. Et remembers what she has told her sister after a fieldtrip organized by Blakie, as well as her sister's reaction to it – one that is clearly contrasted with her own evaluation of Char's mental state:

‘Anyway he knows how to fascinate the women,’ said Et to Char. She could not tell if Char went paler hearing this, because Char was pale in the first place as anybody could get. She was like a ghost now, with her hair gone white. But still beautiful, she couldn’t lose it. (Munro 2004: 2)

The estimation of Char’s physical reaction, and therefore the focalizing subject, can only be retrospectively ascribed to Et, considering the illusion of the dramatic, non-narrative, opening of the story. However, the texture of the narrative discourse is such that it subtly evades overtly relating the descriptions seemingly external to Et (focalized objects), while in fact translating her projections of them as representation. Essentially, then, it is her internal perceptions which are related as external pertaining to characters as focalized objects, but also herself. However, the narrative strategy sidesteps this observable foregrounding of a single character by avoiding direct referencing – instead of clearly attributing the deictic center of the focalizing subject to Et, the narrator increases tension by disallowing the reader a clear referencing source.

A very good example of an internally focalized object would be the protagonist’s contemplation of the moment she understood she was jealous of her sister (Munro 2004: 8), and this moment again focalizes the internal world of Et exclusively. In this instance, as Et recognizes her internal conflict about her sister’s beauty, Et not only focalizes Char, but her own perceptions of her sister as well, playfully revealing the narrating strategy emphasizing the disdain for contradictions, ‘things out of place’ and “mysteries or extremes” (Munro 8). Hooper considers this to be the instance of omniscient narration. However, it is clear that the distribution of Et as the focalizing subject is such that she is absolutely dominant among the characters, or rather, the deictic center of the third-person narration only relates perceptions *about* or *her* experience *of* other characters.

Et does not figure in the story as the focalized object, unless she positions herself as such. Instead, her experience of other characters’ qualities strategically blends into third-person perspective. It is Et’s perception of Blakie as attractive, yet “corrupted by charm” (Munro 2004: 9), as is the absence of corruption in Char, and the deictic strategy in narration adds another layer to the narrative – the dissociation of Et from the suggested involvement in the death of her sister. The maneuver, the covert metafictional nature of the narration allows for the slips or the incongruities to provide more information than the character, as the focalizing subject, actually wants to reveal. Absences, though not ellipses per se, are a distinguishing feature of Munro’s storytelling technique, for these provide additional clues on the narrative flow and the culmination that resists denouement.

Another straightforward example of an external focalized object is the already mentioned bottle of rat poison Et finds in the kitchen cup-

board while making Arthur's eggnog (Munro 2004: 15). The "strange liquid" (Munro 2004: 15) is the expression of Et's perception of the bottle and not necessarily the intrusion of omniscient narration. All the information provided, all the details, are available from Et's vantage point. Et as the focalizing subject gives the physical description and the assessment of the perceptible qualities of the focalized object in her hand. Similarly, a keen observer that she is, she will give her account of Blaikie Noble's behavior with women on the tour bus (Munro 2004: 3) she herself is on, and these observations are undoubtedly infused with her internalized values and beliefs. In other words, it is Et who evaluates women as "scrawny or silly" (Munro 2004: 3), as well as his look as "a gentle and laughing but ultimately serious" (Munro 2004: 3). Even though Char is on the bus, with the protagonist, her perception never breaks through to the narrative discourse, and this is because she, ironically, much like the other two characters, represents only the object to Et's *mind's eye*. The additional layer to the already focalized scene is contained in the brackets where Et's thought process is presented (Munro 2004: 3), and all of these support the angle here that narration is done exclusively from her own vantage point. As the focalized object, in this case Blaikie, is spatially in proximity to the focalizing subject (Munro 2004: 3), Et observes his movements and body language, and yet the focalization then shifts to Blaikie's "look" – or what she believes is the "look" in his eyes – the imperceptible focalized object. So, the focalized object would have been external in the case of third-person narration, but here, it is entirely internal because it refers to Et's understanding of his motivation to find a connection to every one of the women present. By extension, the object of focalization is Et's understanding of passion. Et remarks a "look" that she believes might be the "look" that a man could have looking into the eyes of a woman whom he desires sexually, and this conclusion is based on her observing him with her sister. The use of modal verbs also goes in favor of the proposition that narration is never omniscient in "Something I've Been Meaning to Tell You" – poly-modality implies hypothetical reasoning on the part of Et who does not describe or relate a direct account of her memory, but reveals her own process of piecing together the puzzle that are her sister and her former lover.

The open-ended closure of the story containing the dramatic element that is the title (Munro 2004: 26), produces the final effect in that it reverses the deictic center of the entire narrative process even though at the level of the sentence it persists. What becomes evident is that the sole source of representation is the protagonist herself – the narrator, masked as character, the focalizing subject.

### CONCLUSION

In conclusion, third-person narration usually creates the illusion of reliability, which in the case of “Something I’ve Been Meaning to Tell You” simply does not work, despite the intentional deictic centering at the sentential level of the discourse. The narrating instance voicing Et as the focalizing subject does not only rely on the literary convention promising reliability, but the flow of the discourse cleverly *guides* to conclusions about its veracity within the story-world, especially in combination with anachronous episodes which gradually provide additional information about whether the narrator is to be *trusted*, or whether there might be any manipulative strategies shaping the discourse. This also emphasizes the metafictional quality that the third-person narration should conventionally strive to disguise. In the case of “Something I’ve Been Meaning to Tell You,” the narrator purposefully allows for the events to be incompletely communicated – as a subjective account of one character’s life is presented, but in such a way so as not to persuade, but rather to dissuade, awaken suspicion and, ultimately, to create the singular effect that characterizes the short story as a genre, and in this case, in a typically postmodern manner. Considering that the narrator must be the filter of what is related to the reader, the dominant and exclusive focalization of a single character’s consciousness suggests the complex plotting scheme of the implied author, which is another argument against understanding third-person narration in this story as extra-diegetic and omniscient.

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## ФОКАЛИЗАЦИЈА У КРАТКОЈ ПРИЧИ АЛИС МАНРО „НЕШТО САМ ХТЕЛА ДА ТИ КАЖЕМ“ – ТУМАЧЕЊЕ ИЗ УГЛА КОГНИТИВНЕ ПОЕТИКЕ

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### Резиме

У раду се испитују димензије фокализације из угла когнитивне поетике, и то полазећи од идеје да фокализација директно утиче на искуство читања, односно на рецепцију дискурса наратива. На примеру кратке приче ауторке Алис Манро, „Нешто сам хтела да ти кажем“, показује се важност деиктика и њихове референцијалне вредности у процесу приповедања, а самим тим и у рецепцији текста. Фокализација се на овај начин третира као реторички инструмент који утиче на различите слојеве наративног дискурса, а стратешки наводи процес рецепције наратива.

Кроз дискусију која се бави, како прегледом литературе из области когнитивне поетике, тако и деиксама, а затим и рецепцијом текста, рад се фокусира на реторичку димензију фокализације у процесу приповедања ослањајући се на појам фикционалности, и истражује лингвистичке, али и друштвено-културолошке димензије текста које могу утицати на разумевање представљеног дискурса. Дискурс наратива у књижевности посматра се као свет који се тек референцијално ослања на реалност, односно на конвенције света чији искуствени квалитет користи у стварању фикционалног света. У том смислу, на примеру кратке приче Алис Манро „Нешто сам хтела да ти кажем“, конвенционални поглед на фокализацију из трећег лица тестира се кроз примену инструмената које нуди теоретичарка Мике Бал, што доводи до закључка да структуралистички поглед на фокализацију не може нужно објаснити пластичност наративног поступка. Ова постмодерна кратка прича пример је метафикцијског наратива, и показатељ да на самом лингвистичком нивоу, кроз пажљиво читање и анализу деиктика, јесте могуће препознати мета-фикционални тренутак који конвенцију нарације и проповедања из трећег лица руши. У конкретном примеру приче „Нешто сам хтела да ти кажем“, приповедање из трећег лица које обећава објективно (или барем екстра-дијегетичко) сагледавање света наратива, односно лажно ослањање на конвенцију која се код читаоца схвата као својеврсни код за тумачење, представља само облик реторички усмерене фокализације чији је центар, фокализујући субјекат, главни лик приче.





## THE RELATIONSHIP BETWEEN THE DSU ARTICLES 21(5) AND 22 AND THE ISSUE OF THE LITIGATION DEADLOCKS IN THE DISPUTE SETTLEMENT SYSTEM OF THE WORLD TRADE ORGANIZATION

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### Abstract

In December 2019, the World Trade Organization (WTO) litigation system was deadlocked. One of the important concerns which arose then was how the blockage of the litigation system could affect Dispute Settlement Understanding (DSU) procedural provisions governing the suspension of concession and other obligations. In the light of these circumstances, we need to discuss the “sequencing” issues regarding the claimant’s procedural right to seek authorization for suspension in accordance with Article 22 of the DSU and implementation procedure envisaged in Article 21(5). Thus far, the WTO judicial bodies have been inclined to the position that there is no “sequencing condition” for exercising procedural rights provided in Article 22. Contrary to the position of the WTO jurisprudence, academics mostly advocate that the relationship between Articles 21(5) and 22 of the DSU exists through sequencing prerequisite. However, this problem needs to be redefined in the light of the irregular circumstances that may be created by the blockage of the litigation system. Therefore, exclusively in situation where litigation is in blockage, the claimant should be entitled to commence the Article 22 procedure, without prior employment of the implementation procedure in accordance with Article 21(5) of the DSU. In normal circumstances, the claimant must respect a sequencing prerequisite.

**Key words:** World Trade Organization, Dispute Settlement System, sequencing, implementation procedure, countermeasures

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## ОДНОС ИЗМЕЂУ ЧЛАНОВА 21(5) И 22 DSU СПОРАЗУМА И ПИТАЊЕ БЛОКАДЕ СИСТЕМА РЕШАВАЊА СПОРОВА У СВЕТСКОЈ ТРГОВИНСКОЈ ОРГАНИЗАЦИЈИ

### Апстракт

Од децембра 2019. године, систем решавања спорова у оквиру Светске трговинске организације је блокиран. Тада се јавила значајна забринутост око тога како ће блокада решавања спорова у њиховој парничној фази утицати на процедуралне одредбе Договора о правилима и процедурама за решавање спорова (*Dispute Settlement Understanding – DSU*) којима се уређује суспензија концесија и других обавеза. У светлу ове околности, потребно је да се преиспита „питање редоследа“ између процедуралног права тужиоца да тражи одобрење суспензије у складу са чланом 22 *DSU* споразума и његовог права да покрене имплементациону процедуру, предвиђену чланом 21(5) истог Споразума. До сада су судећа тела СТО била наклоњена ставу да не постоји услов „редоследа“ за покретање процедуре која је предвиђена чланом 22. Истовремено, академска јавност заузима супротан став, истичући да се однос између чланова 21(5) и 22 мора посматрати кроз призму условљености одговарајућим редоследом коришћења права која су предвиђена овим одредбама – пре захтева за суспензију се мора покренути имплементациона процедура. Свеједно, поглед на ово питање се мора редефинисати у светлу нерегуларних околности које могу бити успостављене блокадом парничног механизма у систему решавања спорова пред СТО. С тим у вези, једино у случају када је парнични систем у блокади, тужилац може покренути процедуру суспензије на основу члана 22, без услова да претходно покрене имплементациону процедуру на основу члана 21(5). У редовним околностима, тужилац мора да поштује редослед ових правних овлашћења.

**Кључне речи:** Светска трговинска организација, Систем решавања спорова, Имплементациона процедура, услов редоследа, контрамере

### INTRODUCTION

In December 2019, the WTO dispute settlement system (DSS) confronted the most serious crisis in its 25-year history. The appeal system was blocked given that the terms of office (mandates) had expired for two of the three remaining Appellate Body (AB) members. This was the result of the US veto on the appointment of new AB members since 2017. Thus, the AB has lost the quorum necessary for its work and the entire appeal system became inoperative. Moreover, the mandate of Hong Zhao, the last remaining AB member, expired on 30 November 2020. Therefore, from 1 December 2020, the AB became an entirely “empty” body. It was the first time in the WTO dispute settlement history that litigation system was deadlocked.

This circumstance has raised many political and legal issues and dilemmas. In terms of legal dilemmas, the main practical concern was how the DSS should overcome the crisis and continue to operate in both pending and new cases. The academic community offered several solu-

tions for the interim functioning of the DSS until the crisis is overcome, either through the change of the US veto policy or through some new multilateral trade deals (Pauwelyn, 2019, p. 297).

The main concern introduced and addressed in this article is how the litigation system blockage could affect the procedural DSU provisions governing the suspension of concession and other obligations (counter-measures) in post-litigation stage of disputes. This concern has to be clarified in the context of the described AB crisis, but it is even more important in light of similar DSS litigation deadlocks that may occur again in the future.

Many academics have raised the “sequencing” issue regarding the procedural right of the claimant to seek authorization for suspension in accordance with Article 22 of the DSU and the implementation procedure envisaged in Article 21(5) of the DSU. The WTO members may concurrently commence Article 21(5) and Article 22 procedures. Accordingly, the question is whether the Article 22 procedure may be finished prior to the Article 21(5) procedure. Consequently, the question is also what the Dispute Settlement Body (DSB) should do in a situation when the request for suspension (along with the arbitral award) is on the table.<sup>1</sup> In the WTO, this scenario can occur in normal circumstances, even without any kind of blockage or veto that would interrupt the overall operation of the DSS. On the other hand, the respondent member may always claim that it brought its measures in conformity with recommendations from the original panel or the AB report, and thus provoke endless series of implementation procedures. In such a case, the question is whether the complaining member should constantly be precluded from seeking suspension before the DSB. The WTO judicial bodies, as well as the academic community, have offered certain solutions to some of these questions. Yet, those solutions correspond to the regular conditions in the WTO DSS and can be applied in normal circumstances. Hence, the author of this article considers that this problem needs to be re-examined in light of the irregular circumstances that may be created by the litigation system blockage. In particular, this article discusses the situation briefly described in the text that follows. The complainant WTO member makes a request for suspension of concession and other obligations, claiming that the respondent member did not implement the recommendations contained in the original report adopted by the DSB. On the other hand, the respondent member claims

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<sup>1</sup> “In its role of authorizing sanctions, the WTO becomes the gatekeeper. The DSU requires that sanctions be approved (even if *pro forma*) by the DSB and provides an opportunity for the defendant government to seek arbitration of the amount of sanctions.” (Charnovitz, 2001, p. 813).

that they have implemented the recommendations and thus triggers the implementation procedure. The implementation procedure cannot be finished due to the blockage of the litigation system. Procedural provisions in Article 22 are not subject to any appeal provisions in the DSU. The respondent member can only object to the proposed level of suspension and pursue an arbitration procedure that is not subject to appeal (a request for authorization of suspension commonly triggers an arbitration procedure under Article 22.6). Unlike litigation proceedings (such as implementation procedure), the procedure for authorization of suspension under Article 22 cannot be vetoed by the WTO members. Then, should the complainant WTO member be enabled to fully exercise its procedural rights in accordance with Article 22? In other words, should the respondent member be allowed to take advantage of the litigation blockage and keep acting contrary to the WTO norms?<sup>2</sup>

This article is divided into three parts. The first part discusses the relationship between the two DSU provisions: Article 21(5) and Article 22. Article 21(5) of the DSU governs the procedure which becomes necessary when there is disagreement between parties in dispute, as to the existence or consistency with a covered agreement of measures taken by the respondent to comply with the DSB recommendations and rulings. Article 22 of the DSU provides rules and procedure for the final resort which the claimant in the original dispute may pursue – suspension of concessions and other obligation against the respondent. This may occur in cases where the respondent fails to implement the DSB recommendation and rulings, i.e. fails to bring its internal measures in conformity with the WTO law. The main concern is how to interpret the relationship between these two provisions: is the claimant entitled to use the rights from these provisions independently, or is it obliged to respect the sequence of procedures? In this article, the author discusses this issue by referring to the relevant WTO judicial practice and the pertinent argumentation in literature. The second part focuses on bilateral sequencing agreements between parties in disputes dealing with the application of these two provisions. In this part, the author offers clarification of such kinds of procedural agreements and their effect on obligations in the overall WTO membership. The third part provides the author's remarks on the relationship between the implementation and the suspension procedure in case the litigation procedure is blocked.

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<sup>2</sup> Professor Colares describes a typical situation when the respondent member obstructs the suspension of concession: "...offending members may at times abuse the system to gain a temporary trade advantage—first, violating a rule; second, litigating a potentially meritless case; third, resisting compliance by exploiting procedural tactics at the compliance stage..." (Colares, 2011, p. 422).

*RELATIONSHIP BETWEEN ARTICLES 21(5) AND 22 OF THE DSU*

The first sentence of Article 21(5) DSU reads as follows:

“Where there is disagreement as to the existence or consistency with a covered agreement of measures taken to comply with the recommendations and rulings such dispute shall be decided through recourse to these dispute settlement procedures, including wherever possible resort to the original panel.”

According to this provision, parties in the original dispute may take recourse to the so-called “implementation procedure,” when there is disagreement as to the existence or consistency with a covered agreement on measures to be taken to comply with the DSB recommendations and rulings. The implementation procedure is subject to all DSU procedural provisions which generally apply to original procedures. The implementation procedure should take place before the original panel wherever possible. In the implementation procedure, the panel examines whether the respondent member has taken measures to comply with the recommendations and rulings from the original panel report. Like panel reports in original disputes, panel reports in implementation procedures are also subject to appeal before the AB. Finally, such reports are adopted by the DSB through the negative consensus rule. The main purpose of the implementation procedure is to reach a multilateral determination on whether the measures found to be inconsistent with a covered agreement have been taken into compliance with the WTO law. Article 21(5) does not refer to Article 22 provisions or to any kind of situation described in Article 22.

Article 22 of the DSU entitles the complaining member to request authorization from the DSB to suspend the application to respondent member of the concessions or other obligations under the covered agreements if the respondent member fails to bring the measure found to be inconsistent with a covered agreement into compliance within a reasonable period of time. If the respondent member objects to the requested level of suspension, or claims that the principles and procedures envisaged in Article 22 have not been followed, the matter will be referred to arbitration. The issues concerning the merits (such as, whether the respondent member has brought its measures into compliance) cannot be examined by means of arbitration procedure set out in Article 22. Unlike the reports in the original or implementation procedure, arbitration decisions are final. The DSB shall grant authorization to suspend concessions or other obligations where the request is consistent with the arbitrator’s decision, unless the DSB decides by consensus to reject the request. Article 22 does not refer to Article 21(5) provisions or to any kind of situation described in Article 21(5).

Therefore, neither the DSU nor other WTO agreements clarify or deal with the issue of relationship between these two DSU provisions alt-

though the logical connection is quite visible. Thus, we need to find the answers in the WTO judicial practice and relevant academic literature.

The issue of connection between Articles 21(5) and 22 of the DSU is not new. This topic has been discussed in a large number of published articles. The most important question in literature is whether these two provisions should be interpreted as provisions in “symbiosis” or as two independent norms – the so-called “sequencing dilemma”. The manner of addressing this question is crucial for elaboration on the topic of this article. If we consider that Articles 21(5) and 22 of the DSU are “symbiotic” provisions that need to be interpreted and applied together, then it is logical that the procedures under Article 22 could not be carried out until the litigation procedure under Article 21(5) is finished. In that case, the arbitration procedure envisaged in Article 22 should be suspended until the implementation procedure is completed. On the other hand, if we interpret these provisions as separate and independent provisions entailing different aims and purposes, then the claimant can engage provisions contained in Article 22 irrespective of prior use of the implementation procedure envisaged in Article 21(5). In that situation, Article 22 arbitration procedure may ensue and result in a final decision pertaining to the level of suspension. That decision would further create grounds for the DSB to authorize suspension. Nevertheless, the arbitration does not have competence to examine the issues on merits (such as whether the respondent member implemented the recommendations from the original dispute). The DSU provisions strictly specify that arbitration procedure is to determine the level of suspension. In other words, the arbitration cannot simultaneously act as the compliance panel envisaged in Article 21(5), regardless of the fact that, in principle, the same persons are engaged in both procedures. Issues on the merits can be discussed only in appropriate litigation procedure. In our scenario, the litigation system blockage prevents the resolution of those issues on the merits .

The WTO judicial practice and academic community have offered certain solutions to these issues. In this part of the article, the author examines those assertions in an attempt to clarify the grounds for his own position on these issues in the context of the litigation system blockage in the WTO DSS.

#### *Position of the WTO Jurisprudence*

The practice of the WTO judicial bodies on the sequencing dilemma pertaining to Articles 21(5) and 22 of the DSU is not very substantial. There are several cases in which the AB, panels and arbitrations discussed this problem.

In relevant literature, the most cited case on this issue is the famous *Bananas* case.<sup>3</sup> The parties in this dispute submitted confronting arguments on the issue of sequencing. The United States (acting as the claimant) asserted in its argumentation that the claimant has the right to request authorization for suspension of concessions when it considers that the respondent member failed to implement the recommendations from the original report in a reasonable period of time. According to the submitted US' argumentation, there is no "sequence" between Article 21(5) and Article 22; therefore, the claimant can commence Article 22 procedures irrespective of the implementation procedure. The United States argued that the integrity of the DSS system would deteriorate if the complainant member cannot enforce countermeasures at the end of the reasonable time period for compliance, which would ultimately be in favor of the WTO members that disregard the DSB rulings.<sup>4</sup> Furthermore, in the view of the US, if the claimant could not make a request for authorization to suspend concessions within the Article 22(6) time-period (30 days)<sup>5</sup>, it would preclude its right to do so afterwards.<sup>6</sup>

On the other hand, the European Community (acting as the respondent) claimed that sequence exists between the two DSU provisions. The EC argued that the implementation procedure must be conducted prior to the Article 22 procedures. According to the EC, multilateral determination on compliance is a precondition for using the Article 22 procedural rights. The EC claimed that complainants could not have the right to unilaterally determine whether implementation measures comply with the covered agreements and the DSB rulings. Therefore, the EC considered that Arbitration should suspend its work until it is determined in the implementation procedure that the EC did not comply with the recommendations from the original report.

The Arbitration did not agree with the EC's argumentation and supported the US's position. According to the Arbitration, there are no provisions envisaged in the DSU that govern sequencing between Articles 21(5) and 22 of the DSU. The arbitrators concluded that their terms of

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<sup>3</sup> Full case title: Decision by the Arbitrator, *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Arbitration by the European Communities under Article 22.6 of the DSU*, WT/DS27/ARB, 9 April 1999, DSR 1999:II.

<sup>4</sup> See more detailed discussion on this Case and argumentation of the parties: (McCall Smith, 2006).

<sup>5</sup> The first sentence of the Article 22(6) of the DSU states: 'When the situation described in paragraph 2 occurs, the DSB, upon request, shall grant authorization to suspend concessions or other obligations within 30 days of the expiry of the reasonable period of time unless the DSB decides by consensus to reject the request.'

<sup>6</sup> According to many authors, the time-limits mismatch for procedural actions provided in Articles 21(5) and 22 of the DSU is a root of the "sequencing" issue.

reference are limited to those envisaged in Article 22 (paragraphs 6 and 7) of the DSU. Consequently, they do not have competence to resolve the relationship between those articles.<sup>7</sup> According to the Arbitration, its competence is limited to the following issues governed by Article 22 provisions: a) whether the proposed level of suspension is equivalent to the level of nullification or impairment; b) whether the proposed suspension is allowed under the covered agreement; and c) whether the principles and procedures set forth Article 22 (paragraph 3) have been followed.

Therefore, if we strictly follow the arbitrators' terms of reference, we can determine that arbitration can fully conduct the Article 22 procedures; the complainant member can subsequently obtain authorization for suspension regardless of Article 21(5) procedures.<sup>8</sup> Moreover, the Arbitration found that 30-day deadline predicted in the Article 22(6) "runs independently from any other DSU provision" (Mavroidis, 2000, p. 796). According to the Arbitration, if the claimant cannot make a request for authorization to suspend concessions within the Article 22(6) time-period, it loses its right to do so, at least under circumstances where the negative consensus rule of Article 22(6) applies.<sup>9</sup>

Another example where the WTO judicial bodies examined the sequencing issue is the case *US — Certain EC Products*.<sup>10</sup> The subject matter of this case were countermeasures that the US put in place against the EC, claiming that the EC did not implement recommendations from the report in the *Bananas* dispute. The US actually imposed a so-called "3 March Measure" against the imports of certain EC products, in the absence of a prior DSB authorization. The EC filed a claim against the US, arguing that the US violated its obligations under Article 23(2)(a) and Article 21(5) of the DSU.

The AB confirmed the previous position of the Panel that the obligation under Article 21(5) was comparable and similar to the prohibition of "unilateral determinations" under Article 23(2)(a)<sup>11</sup> of the DSU, although the obligation in Article 21(5) was "another" DSU obligation. The AB also recognized the fact that, when the US put in place its counter-

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<sup>7</sup> See footnote 11 of the Decision.

<sup>8</sup> See para. 2.9 and paras 4.11 – 4.13. of the Decision.

<sup>9</sup> See para. 4.11 of the Decision.

<sup>10</sup> Appellate Body Report, *United States – Import Measures on Certain Products from the European Communities*, WT/DS165/AB/R, adopted 10 January 2001, DSR 2001:I, p. 373.

<sup>11</sup> Article 23(2)(a) of the DSU: '...Members shall: (a) not make a determination to the effect that a violation has occurred, that benefits have been nullified or impaired or that the attainment of any objective of the covered agreements has been impeded, except through recourse to dispute settlement in accordance with the rules and procedures of this Understanding, and shall make any such determination consistent with the findings contained in the panel or Appellate Body report adopted by the DSB or an arbitration award rendered under this Understanding;'



measures, the WTO-consistency of the EC's implementing measures had not been determined through recourse to the WTO dispute settlement procedures as required by Article 21(5) of the DSU.<sup>12</sup> There are opinions in literature that the AB actually held that the Article 21(5) panel determination is a “prerequisite to undertaking a suspension of concessions” (Charnovitz, 2002, p. 409, fn. 4). However, the AB did not explicitly express that the claimant cannot exercise its rights from Article 22 of the DSU and obtain authorization for suspension without a prior Article 21(5) procedure. Moreover, the AB confirmed the existence of an ambiguous relationship between Articles 21(5) and 22 of the DSU and concluded that it had no competence to provide an authentic interpretation of that relationship. According to the AB, only WTO Members have the authority to amend the DSU or to adopt interpretations within the meaning of Article IX:2 of the WTO Agreement.<sup>13</sup>

Further examples where the AB ruled on the sequencing issue may be found in the cases *United States — Continued Suspension*<sup>14</sup> and *Canada — Continued Suspension*.<sup>15</sup> In those cases, the AB ruled that the WTO member could continue to apply authorized countermeasures during ongoing procedure on the respondent's new (modified) measures. These cases actually covered the extent and limits of panel's standard of review in a post-suspension situation, where parties did not initiate the Article 21(5) proceedings, but where the panel performs “functions similar to those of an Article 21(5) panel”.<sup>16</sup> According to Professor Brewster, this approach could generally provide the resolution to the sequencing issue between Article 21(5) and Article 22(6); the WTO members can use the Article 22(6) procedure concurrently with the Article 21(5) compliance procedure (Brewster, 2011, p. 157).

In the case *US — Tuna II (Mexico) (Article 22.6 - US)*<sup>17</sup>, the Arbitration did not support the US' claims that each time a respondent modifies a measure and asserts that it has brought the measure into compliance, and Article 22(6) arbitration is subsequently conducted, a new im-

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<sup>12</sup> See paragraphs 124-126 of the AB Report.

<sup>13</sup> See paras 91-92 of the AB report.

<sup>14</sup> Appellate Body Report, *United States – Continued Suspension of Obligations in the EC – Hormones Dispute*, WT/DS320/AB/R, adopted 14 November 2008, DSR 2008:X, p. 3507

<sup>15</sup> Appellate Body Report, *Canada – Continued Suspension of Obligations in the EC – Hormones Dispute*, WT/DS321/AB/R, adopted 14 November 2008, DSR 2008:XIV, p. 5373.

<sup>16</sup> Appellate Body Reports, *US/Canada – Continued Suspension*, paras 359 and 580.

<sup>17</sup> Decision by the Arbitrator, *United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products – Recourse to Article 22.6 of the DSU by the United States*, WT/DS381/ARB, 25 April 2017, DSR 2017:VIII, p. 4129.

plementation procedure is necessary before the DSB can authorize any suspension of concessions. According to the Arbitration:

“...in such a situation, new compliance panel proceedings under Article 21(5) needed to be undertaken every time a measure already found to be inconsistent at the expiry of the reasonable period of time were modified and compliance was claimed, this could very substantially delay, and in theory effectively thwart, a complaining party's efforts towards obtaining DSB authorization to suspend concessions.”<sup>18</sup>

Moreover, the Arbitration expressed that such an outcome would not be consistent with the DSU objectives: to preserve the rights of the WTO members and to promote the prompt settlement of disputes.<sup>19</sup>

There are also examples where arbitrators concluded that they do not have a mandate to resolve whether sequencing between Articles 21(5) and 22 is required under the DSU. In the case *Brazil – Aircraft (Article 22.6 – Brazil)*<sup>20</sup>, the arbitrators explicitly expressed this view. In a few other arbitration cases, arbitrators implicitly expressed this view by referring to the limits of their mandate. For example, in *EC – Hormones (US) (Article 22.6 – EC)*<sup>21</sup>, arbitrators referred to the minimum requirements that should be attached to a request for suspension. According to the Arbitration, the minimum specificity requirements are: a) a specific level of suspension, i.e. a level equivalent to the nullification and impairment caused by the WTO inconsistent measure, pursuant to Article 22(4); and b) specification of the agreement and sector(s) under which concessions or other obligations would be suspended, pursuant to Article 22(3) of the DSU.<sup>22</sup> In *EC – Bananas III (Ecuador) (Article 22.6 – EC)*<sup>23</sup>, the Arbitration connected these specificity requirements on request for suspension with the limits of its jurisdiction:

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<sup>18</sup> Para. 3.53. of the Decision.

<sup>19</sup> *Ibid.*

<sup>20</sup> Decision by the Arbitrator, *Brazil – Export Financing Programme for Aircraft – Recourse to Arbitration by Brazil under Article 22.6 of the DSU and Article 4.11 of the SCM Agreement*, WT/DS46/ARB, 28 August 2000, DSR 2002:I, p. 19, footnote 7.

<sup>21</sup> Decision by the Arbitrator, *European Communities – Measures Concerning Meat and Meat Products (Hormones), Original Complaint by Canada – Recourse to Arbitration by the European Communities under Article 22.6 of the DSU*, WT/DS48/ARB, 12 July 1999, DSR 1999:III, p. 1135.

<sup>22</sup> Para. 16 of the Decision.

<sup>23</sup> Decision by the Arbitrator, *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Arbitration by the European Communities under Article 22.6 of the DSU*, WT/DS27/ARB/ECU, 24 March 2000, DSR 2000:V, p. 2237.

“The jurisdiction of the Arbitrators includes the power to determine (i) whether the level of suspension of concessions or other obligations requested is equivalent to the level of nullification or impairment; and (ii) whether the principles or procedures concerning the suspension of concessions or other obligations across sectors and/or agreements pursuant to Article 22.3 of the DSU have been followed.”<sup>24</sup>

Through these statements, both arbitrations actually clarified the issues that covered by their jurisdiction. Other issues, such as the sequence of the implementation procedure and the arbitration procedure, do not fall into the scope of arbitration competence.

From the above analysis of the WTO jurisprudence, we can conclude that the WTO judicial bodies (particularly the AB and arbitration) in several cases expressed their views on the relationship between Articles 21(5) and 22 of the DSU. According to their points of view, the DSU does not provide any kind of specification or clarification on that relationship. Moreover, the AB has stated that it has no competence to interpret the relationship between those two DSU provisions. However, both AB and arbitrations have been inclined (thus far) to the position that there is no “sequencing condition” for exercising procedural rights provided in Article 22, meaning that the claimant in the original dispute can commence Article 22 procedure irrespective of a prior procedure under Article 21(5).

#### *Positions in Academic Literature*

Contrary to the position of the WTO jurisprudence, academics mostly advocate that the relationship between Articles 21(5) and 22 of the DSU exists through sequencing prerequisite. According to Kearns and Charnovitz, the objective findings of the Article 21(5) panel are a ground for the DSB to determine whether respondent has implemented recommendations and, consequently, to authorize suspension if the respondent has failed to do that (Kearns & Charnovitz, 2002, p. 335). That would mean that the procedure conducted under Article 21(5) is a precondition for the procedure under Article 22.

Two decades ago, Professor Mavroidis published a notable and commonly cited article, titled “*Remedies in the WTO Legal System: Between a Rock and a Hard Place*”, (Mavroidis, 2000, p. 796), discussing the sequencing issue. In that article, Mavroidis generally claims that sequencing between Articles 21(5) and 22 stems from the DSU context. However, Mavroidis also raises the question of whether the respondent may always obstruct the procedure for authorization of countermeasures through continual claims that it did *something* to implement the recom-

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<sup>24</sup> Para. 22 of the Decision.

mendations. If the claimant considers that this *something* is not adequate, it raises the condition for the implementation procedure that can proceed in “endless circle” (Mavroidis, 2000, p. 794). This stands if we accept the position of some authors that countermeasures may be approved exclusively after multilateral determination at the DSB meeting that this *something* is not adequate. In order to prevent such illogical interpretation of the DSU provisions, Mavroidis offered a reasonable clarification. The claimant can make a request for authorization of suspension in the absence of a prior implementation procedure only in case the respondent did not do anything to implement the recommendations. On the other hand, if the respondent did *something*, then the implementation procedure becomes necessary before using the Article 22 procedures (Mavroidis, 2000, p. 797). Moreover, the respondent member may claim that it is in compliance after taking little or no action to implement the DSB recommendations from the original dispute (Brewster, 2011, p. 115). Mavroidis, nevertheless, makes an important correction of this attitude: when the first implementation procedure is completed with findings of non-implementation, then the claimant can request suspension. In that situation, the respondent cannot obstruct the Article 22 procedure by triggering new implementation procedures under the allegation that it modified the implementation action again. New implementation procedures may take action, but they cannot affect the Article 22 procedure (Mavroidis, 2000, p. 799). Mavroidis also refers to the principle of effective treaty interpretation concerning time limits provided in the Article 22. According to Mavroidis, a thirty-day period could be counted at the end of the reasonable period of time when the respondent member did not take any implementation action. On the other hand, if the respondent member took some implementation actions and the compliance panel finds that those activities were inadequate, the thirty-day period should be counted as of the date when the compliance panel issues its report (Mavroidis, 2004, p. 61).

In one of his articles, Professor Fukunaga refers to the compliance panel report in the case *EC – Bananas III (Article 21.5 – EC)*, which states that the implementation measures taken in good faith by the WTO member are presumed to be in conformity with the DSB recommendations and the WTO Agreements.<sup>25</sup> According to Fukunaga, this presumption implies that, when the respondent member alleges to have implemented the DSB recommendations, the complaining member shall first have recourse to Article 21(5) (Fukunaga, 2006, p.407). This position is

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<sup>25</sup> Panel Report, *European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Article 21.5 of the DSU by the European Communities*, WT/DS27/RW/EEC, 12 April 1999, and Corr.1, unadopted, DSR 1999: II, p. 783, para. 4.13.

taken by other authors as well.<sup>26</sup> Fukunaga argues that, if the complaining member requests authorization for the suspension even though the respondent member claims that it took implementation measures, the DSB should dismiss this request because the claimant is not entitled to make such a request. (Fukunaga, 2006, p.407). Fukunaga (and some other authors) also refers to the beginning of the first sentence of Article 22(2) of the DSU:

“If the Member concerned fails to bring the measure found to be inconsistent with a covered agreement into compliance therewith or otherwise comply with the recommendations and rulings within the reasonable period of time...”

In the context of the whole text of Article 22(2), this part of the first sentence needs to be interpreted as a precondition for any following actions described in that provision (such as a request for suspension as a final resort). This precondition is reflected in establishing that the “Member concerned” failed to bring the measure into conformity with a covered agreement. According to Article 23 of the DSU, the establishment of that fact must be taken multilaterally, through the recourse to the DSU procedures and consequent decision of the DSB. Therefore, any request for suspension on the basis of unilateral determination regarding non-conformity of the respondent’s implementation action would be against the first sentence of Article 22(2) (Fukunaga, 2006, p.407).<sup>27</sup>

Generally, this point of view does make sense. It is obvious that the provisions contained in Article 22 refer to a situation of non-compliance. Therefore, those provisions cannot be invoked without a prior multilateral establishment of non-compliance (Shahani, 2015, p. 526). Many writers interpret Article 22 provisions in that manner. Professor Davey argues that it is logical that a decision on consistency of implementation actions must be made before the authorization of suspension (Davey, 2000, p. 17). Furthermore, complaining member can only retaliate after the adjudication and compliance phases (Lester, S., Mercurio, B., Davies, A. & Leitner, K., 2008, p. 172-174). Although it is not explicitly

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<sup>26</sup> For example, Pelzman and Shoham argue that “under this set of acceptable presumptions, any allegations of non-compliance and non-implementation of the DSB recommendations requires that the complaining party shall first have recourse to the Article 21.5 review. In effect, this puts a stop to a complaining party attempt to seek authorization for suspension until the procedures under Article 21.5 are complete.” (Pelzman & Shoham, 2007, p. 6-7).

<sup>27</sup> “If the complaining party requests authorization for the suspension, although the Member concerned has allegedly taken the implementation measures, the DSB should pronounce that the request is inadmissible or invalid since the condition prescribed in the first sentence of Article 22.2 of the DSU is not met.” (Fukunaga, 2006, p.407, fn. 96).

stated in Article 22, Professor Brewster claims that the complaining member can request that the DSB authorize the suspension of trade benefits to the respondent member only if the AB finds that the respondent member is still in violation of the WTO agreements after the compliance stage (Brewster, 2011, p. 116).

### THE QUESTION OF SEQUENCING AGREEMENTS

The WTO litigants have often resolved the tension between Articles 21(5) and 22 of the DSU by negotiating and concluding a bilateral *ad hoc* sequencing agreements. These agreements usually provide that Article 21(5) and Article 22 procedures can be requested at the same time, but the parties may also agree to postpone the Article 22 procedure while the implementation procedure is underway. These bilateral sequencing agreements enable the complainant to retain its right to retaliate in the future, if the implementation procedure ends with findings of non-compliance.<sup>28</sup>

There are many standpoints in the literature on the common “bilateral agreement” practice pertaining to the sequencing of the implementation procedure and suspension provisions. Kearns and Charnovitz argue that complaining WTO members, in reality, take recourse to Article 22 only in situations when respondent members have not taken any implementation activity (Kearns & Charnovitz, 2002, p. 338). They (and many other authors as well) refer to the common practice of negotiating bilateral procedural agreements in post-litigation stage, where parties in disputes envisage sequencing of procedures contained in Articles 21(5) and 22 of the DSU (Kearns & Charnovitz, 2002, p. 339; Valles & McGivern, 2000, p. 83-84). Fukunaga indicates the prevailing behaviour of complaining WTO members where they refrain from recouring to Article 22 provisions until the ongoing implementation procedure is completed (Fukunaga, 2006, p. 407). The issue of binding sequencing agreements is important because some authors are prone to conclude that the WTO members, by adopting the practice of these agreements, constituted customary international law that the WTO judicial bodies should respect (Shahani, 2015, p. 537).

According to Article 3(1) of the DSU and subsequent WTO jurisprudence, the jurisdiction of the WTO judicial bodies is limited to the clarification of the covered agreements. From the perspective of the WTO

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<sup>28</sup> There are several variations of these bilateral agreements. Parties may agree to suspend the Article 22 procedure until the implementation procedure is completely over (including the appeal procedure). On the other hand, the claimant may agree to wait only for the circulation of compliance panel report to reactivate the Article 22 procedure. *See*, for example, the analysis of such agreement in the case *Australia – Salmon* (Tsai-yu, 2005, p. 934).

law, customary international law falls into the scope of extrinsic sources of law that the WTO judicial bodies may apply in certain limited situations. Pertaining to the customary international law, the only recognized function of that particular legal source can be reflected in the interpretation of the covered agreements, in line with Article 3(2) of the DSU. Namely, that DSU provision refers to the customary rules of interpretation of public international law for clarification of provisions of the covered agreements.<sup>29</sup> In that regard, the practice of the WTO judicial bodies and legal theory agree that interpretation provisions contained in the Vienna Convention on the Law of Treaties from 1969 (VCLT) need to be considered as “customary rules of interpretation of public international law” from the language of Article 3(2) of the DSU.<sup>30</sup> In the context of the VCLT terms, the sequencing agreements may constitute a “subsequent practice” of the parties which may be relevant for interpretation of the WTO law, in accordance to Article 31(3)(b) of the VCLT.<sup>31</sup> However, the AB demonstrated a restrictive approach in recognizing facts and practice to fall within the phrase “subsequent practice” in the context of Article 31(3)(b) of the VCLT. In one of its first reports, in the case *Japan – Alcoholic Beverages II*, the AB reversed the finding of the Panel that previously adopted GATT reports and the DSB reports are “subsequent practice” which needs to be relevant in interpreting covered agreements.<sup>32</sup> The AB stated that an isolated act (particularly an adopted DSB report) is generally insufficient to establish subsequent practice:

“Generally, in international law, the essence of subsequent practice in interpreting a treaty has been recognized as a “concordant, common and consistent” sequence of acts or pronouncements which is sufficient to establish a discernable pattern implying the agreement of the parties regarding its interpretation. An isolated act is generally not sufficient to establish subsequent practice; it is

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<sup>29</sup> Article 3(2) of the DSU: ‘The dispute settlement system of the WTO is a central element in providing security and predictability to the multilateral trading system. The Members recognize that it serves to preserve the rights and obligations of Members under the covered agreements, and to clarify the existing provisions of those agreements in accordance with customary rules of interpretation of public international law ...’

<sup>30</sup> See, for example, the AB report in *US-Gasoline* case (page 17) and in *Japan-Alcoholic Beverages* case (page 9).

<sup>31</sup> Article 31(3)(b) of the VCLT provides: ‘There shall be taken into account, together with the context: (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation.’

<sup>32</sup> *Japan – Taxes on Alcoholic Beverages*, WT/DS8/R, WT/DS10/R, WT/DS11/R, adopted 1 Nov. 1996, as modified by Appellate Body Report WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, DSR 1996:I, 125, pp. 12-15.

a sequence of acts establishing the agreement of the parties that is relevant.”<sup>33</sup>

The AB concluded that the “subsequent practice” in the context of the VCLT may be developed only through the activities of the Ministerial Conference and the General Council, as exclusive authorities for interpretation of the covered agreements in accordance to Article IX(2) of the WTO Agreement.<sup>34</sup>

Although the previously mentioned position of the AB refers to the status of adopted GATT and DSB reports, this opinion is also relevant for bilateral sequencing agreements. These agreements are also “isolated acts” that are negotiated and concluded only between parties in disputes. Other WTO members do not participate in that process. Hence, other WTO members cannot be subject to practice that has been developed through activities of several members. For the establishment a “subsequent practice” as a customary international law, the whole WTO membership must be included, through the activities and decisions of the Ministerial Conference and the General Council, as exclusive authorities for interpretation of the covered agreements. In other words, the Ministerial Conference (or the General Council) has to recognize the status of “subsequent practice” to bilateral sequencing agreements by adopting an interpretation on the relationship between Articles 21(5) and 22 of the DSU.

### *NEW REALITY – NEW APPROACH*

From the succinct analysis above, we have established all pertinent points regarding the interpretation of the relationship between Articles 21(5) and 22 of the DSU. The DSU neither clarifies nor refers in any manner to that relationship. The WTO jurisprudence has been (at least) implicitly inclined to interpret those provisions as independent provisions. On the other hand, academics mostly argue that a sequencing of those norms exists. Those academics submit their standpoints with strong ar-

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<sup>33</sup> See pages 12 and 13 of the AB report.

<sup>34</sup> The AB stated: “We do not believe that the CONTRACTING PARTIES, in deciding to adopt a panel report, intended that their decision would constitute a definitive interpretation of the relevant provisions of GATT 1947. Nor do we believe that this is contemplated under GATT 1994.” There is specific cause for this conclusion in the WTO Agreement. Article IX:2 of the WTO Agreement provides: “The Ministerial Conference and the General Council shall have the exclusive authority to adopt interpretations of this Agreement and of the Multilateral Trade Agreements”. Article IX:2 provides further that such decisions “shall be taken by a three-fourths majority of the Members”. The fact that such an “exclusive authority” in interpreting the treaty has been established so specifically in the WTO Agreement is reason enough to conclude that such authority does not exist by implication or by inadvertence elsewhere.’ See page 13 of the AB Report.



guments. The solution offered by Professor Mavroidis two decades ago seems to be acceptable for filling the gap in the DSU text. At that time, this was a “fresh” legal and academic issue, and Mavroidis reacted with a reasonable proposal for interpretation of the two conflicting provisions: the claimant can make a request for authorization of suspension in the absence of prior implementation procedure exclusively in case the respondent did not do anything to implement the recommendations. If the respondent did *something*, then the implementation procedure becomes necessary before the engagement of Article 22 procedures. After the first implementation procedure is completed with findings of non-implementation, the claimant can request suspension. New implementation procedures may take action, but they cannot affect the Article 22 procedure. This solution is logical and corresponds to the nature and purpose of the DSU.

Nevertheless, we can accept these arguments exclusively in “normal” circumstances, where litigation and appeal can function properly. Otherwise, this approach would upgrade obstacles to justice in the WTO dispute settlement system. The implementation procedure may commence, but it cannot be finished as long as the blockage of the AB is in force. Therefore, if we accepted the concept proposed by Mavroidis and other scholars (that the implementation procedure must take place prior to Article 22 procedure), we would recognize that the claimant should be disabled from implementing legal suspension in the unforeseeable period of time. This would create a comfortable situation for the respondent to invoke procedural rights and obstruct the authorization of the suspension by the DSB. That concept would be also against the DSU principles, particularly against the aim of the dispute settlement mechanism to secure a positive solution to a dispute. As a matter of fact, the primary goal of the countermeasures is to induce compliance with the WTO law. The countermeasures are contemplated as a final resort for the claimant in a situation when the respondent is persistent to maintain measures that are multilaterally established to be inconsistent with the covered agreements. Without that possibility, we can hardly expect from the respondent to bring its measures in conformity with the WTO law. On the other hand, in the absence of any kind of legal solution, the claimant would be continuously exposed to illegal measures that cause nullification or impairment of benefits.

We may propose a possible *middle* solution: the claimant can seek authorization for suspension if the prior implementation procedure is not completed in a reasonable period of time. On the one hand, we must recognize that the claimant should act in accordance with the logical relationship between Articles 21(5) and 22 of the DSU. Therefore, the claimant should first commence the implementation procedure if the respondent *did something* and claims that it brought their measures in conformity with the WTO law (Mavroidis’s opinion). On the other hand, if the im-

plementation procedure is not finished in the period of time envisaged in the DSU provisions, then the claimant can commence Article 22 procedure. The period of time for the implementation procedure may be determined through the text of the DSU norms. In particular, Article 21(5) regulates:

”The panel shall circulate its report within 90 days after the date of referral of the matter to it. When the panel considers that it cannot provide its report within this time frame, it shall inform the DSB in writing of the reasons for the delay together with an estimate of the period within which it will submit its report.”

Hence, for the panel procedure that time should be 90 days plus some additional period of time proposed by the panel. Considering the appellate procedure, the Article 17(5) of the DSU provides:

“As a general rule, the proceedings shall not exceed 60 days from the date a party to the dispute formally notifies its decision to appeal to the date the Appellate Body circulates its report... When the Appellate Body considers that it cannot provide its report within 60 days, it shall inform the DSB in writing of the reasons for the delay together with an estimate of the period within which it will submit its report. In no case shall the proceedings exceed 90 days.”

Hence, the maximum period of time for the appellate procedure is 90 days from the date the disputing party formally notifies its decision to appeal. Therefore, if the AB does not submit its report in 60 or 90 days from the date of formal notification of decision to appeal, the claimant should have the right to seek retaliation in accordance with Article 22. Even in the WTO judicial practice, there was a case (*Australia-Salmon*) where the parties agreed a modified sequencing approach: the claimant and the respondent agreed that Article 22 procedure would be suspended until the Article 21(5) procedure was completed.<sup>35</sup> If the compliance panel finds WTO-inconsistency with the implementation measures, then the claimant can un-suspend the Article 22 procedure regardless of whether the panel report is subject to appeal. According to Professor Tsai-yu, who commented on this bilateral sequencing agreement:

“this kind of approach may ensure that the examination of WTO conformity is conducted through a multilateral track, instead of unilateral judgment by the complaining party, before the article 22.6 retaliation review into processing” (Tsai-yu, 2005, p. 934).

Yet, there is another open question: what if the compliance panel finds that the respondent implemented the recommendations? In that situation, the report could not be applied due to the AB blockage and the

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<sup>35</sup> See Panel Report, *Australia – Measures Affecting Importation of Salmon – Recourse to Article 21.5 of the DSU by Canada*, WT/DS18/RW, adopted 20 March 2000, DSR 2000:IV, 2031.

findings of the compliance panel could actually be perceived as final. This would be a very severe situation for the claimant, especially if the compliance panel made some errors in its findings. Thus, if the claimant decides to commence the implementation procedure, it takes risks to make such an unfavorable circumstance for its future position. In addition, the amount of legitimacy for seeking suspension would drastically decrease.

Therefore, from the claimant's interests, the *middle* solution is hazardous. To avoid the implementation procedure, a better solution for the claimant is direct use of the Article 22 procedure. We cannot reasonably expect from the claimant to postpone Article 22 procedures and to get itself involved into a defective implementation procedure which cannot provide the final resolution of the matter. Certainly, the respondent may commence the implementation procedure. In that case, the claimant would be obliged to participate in that procedure. However, the claimant may not be obliged to wait for the final resolution of that procedure as a prerequisite for commencing the Article 22 procedure.

Nevertheless, we need to look at some possible consequences of this *kind of radical, but necessary* approach, which can give rise to several important issues. First, let us suppose that the arbitration has proposed suspension subsequently approved by the DSB. In the meantime, the appellate system starts to function properly, and the implementation procedure (commenced either by the respondent or by the claimant) is finally finished with findings on the WTO conformity with the implementation measures. During all that time, the claimant may apply the DSB-approved countermeasures which eventually appear to have been lacking justification. Who would be responsible in such a case? The DSB approves countermeasures on the basis of the claimant's request and arbitration decision. If we consider that the DSB adopts its decisions on the basis of the negative consensus rule, it brings us to the conclusion that all decisions submitted by the arbitration are automatically adopted by the DSB. According to the DSU provisions, the possibility for non-adoption of an arbitration decision exists only in theory. Therefore, we cannot conclude that the DSB would be responsible for imposing unjustified measures. On the other hand, the arbitration does not have the authority to examine the implementation issues and to establish facts, i.e. whether the respondent did or did not bring its measures in conformity with the WTO law. The competence of the arbitration is strictly limited to establishing the level of suspension and this body cannot decide on the issues concerning the merits and implementation. Therefore, the arbitration cannot be held responsible either. Moreover, arbitration decisions are final and cannot be subject to appeal; they are always "on the road" to receiving the final approval by the DSB.

Hence, we could not argue that either the DSB or the arbitration could be responsible for possible long-term imposition of unjustified countermeasures. So, who can be responsible? Could it be the claimant?

This is also an ambiguous point. First, it is hard to assign all responsibility to the WTO complainant member, and to rely on its *awareness*, *conscience* and good faith. As a matter of fact, the complainant member has every right to consider (in good faith) that the respondent member did not implement the recommendations from the adopted panel report. The complainant member cannot be expected to act as a guardian of the WTO law. This is a task for the WTO collective institutions and judicial bodies. Each WTO member has the right to protect its own interests in accordance with the WTO law. Therefore, if the complainant member fully acts in accordance with the DSB provisions and requests suspension, no one can argue that it acts in bad faith.

There is also another problem related to this issue. Long ago, the AB established a rule that DSB-authorized countermeasures ‘may continue until the removal of the measure found by the DSB to be inconsistent results in substantive compliance’.<sup>36</sup> According to the AB, respondent member cannot require termination of the suspension of concessions simply because a Member declares that it has removed the inconsistent measure, without a multilateral determination that substantive compliance has been achieved. The AB concluded that it would undermine the important function of the suspension of concessions in inducing compliance.<sup>37</sup> Furthermore, the AB holds that parties in dispute must invoke the implementation procedure in accordance with Article 21(5) (in case of a disagreement) to determine whether a new measure achieves compliance (Charnovitz, 2009, p. 564-65).<sup>38</sup> It means that the respondent must use the implementation procedure to reach a multilateral determination of the WTO-consistency of its implementation measures. Until that determination, the claimant is fully entitled to implement the DSB-approved suspension. In other words, the claimant may obstruct multilateral determination of compliance by *shifting* the matter to the AB, which cannot finish its work due to the blockage. In that situation, the respondent cannot use any kind of legal and procedural instrument to terminate suspension, even though it has done everything in good faith to ensure substantial compliance. In those circumstances, everything rests on the claimant’s good faith and *conscience*. A possible solution may also be found through bilateral negotiations and agreement between the disputing parties. However, this remains an open issue for discussion.

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<sup>36</sup> See AB report in US-Continued Suspension, para. 306. Full title of the Report: Appellate Body Report, *United States – Continued Suspension of Obligations in the EC – Hormones Dispute*, WT/DS320/AB/R, adopted 14 November 2008.

<sup>37</sup> *Ibid*, para. 308.

<sup>38</sup> See also: *ibid*, paras. 345, 348, 358, 368.

### CONCLUSION

In December 2019, the system of appeal in the WTO dispute settlement system became inoperative as the terms of office of the AB members expired and the AB lost the necessary quorum. It was the first time in the WTO dispute settlement history that litigation system was deadlocked. After more than two decades of proper functioning, the WTO litigation system proved to be absolutely liable to blockage. One of the important emerging concerns was how the blockage of the litigation system could affect DSU procedural provisions governing the suspension of concession and other obligations (countermeasures) in post-litigation stage of disputes. More specifically, we need to address the *sequencing* issue regarding the procedural right of the claimant to seek authorization for suspension in accordance with Article 22 of the DSU and the implementation procedure envisaged in Article 21(5) of the DSU. Should these two provisions be interpreted as provisions in “symbiosis” or as two independent norms? Neither the DSU nor other WTO agreements clarify or deal with the relationship between these two DSU provisions.

In several cases, the WTO judicial bodies (particularly the AB and arbitrations) expressed their views on the relationship between Articles 21(5) and 22 of the DSU. From their point of view, the DSU does not provide any kind of specification or clarification of that relationship. Moreover, the AB has stated that it has no competence to interpret the relationship between those two DSU provisions. However, both the AB and arbitrations have been inclined to the position that there is no “sequencing condition” for exercising procedural rights provided in Article 22 of the DSU; it means that the claimant in the original dispute can commence Article 22 procedure irrespective of a prior procedure under Article 21(5). Contrary to the position of the WTO jurisprudence, academics mostly advocate that the relationship between Articles 21(5) and 22 of the DSU exists through sequencing prerequisite.

However, this problem needs to be re-examined in light of the irregular circumstances that may be created by the blockage of the litigation system. The implementation procedure may be commenced, but it cannot be finished as long as the blockage of the AB is in force. Therefore, if we accepted the concept proposed by the majority of scholars (that the implementation procedure must take place prior to the Article 22 procedure), we would recognize that the claimant should be prohibited from implementing the legal suspension in the unforeseeable period of time. This would create a favorable situation for the respondent to invoke procedural rights and obstruct the authorization of suspension by the DSB. That concept would also be against the DSU principles, particularly against the aim of the dispute settlement mechanism to secure a positive solution to a dispute. Therefore, *exclusively in situation where litigation is in blockage*, the claimant should be entitled to commence the Article 22

procedure, without prior use of the implementation procedure in accordance with Article 21(5) of the DSU. In normal circumstances, the claimant must respect a sequencing prerequisite. We should accept that position, although such a scenario may have some peculiar implications. However, those implications are subject to further discussion, aimed at finding the best possible solution in the future.

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## ОДНОС ИЗМЕЂУ ЧЛАНОВА 21(5) И 22 DSU СПОРАЗУМА И ПИТАЊЕ БЛОКАДЕ СИСТЕМА РЕШАВАЊА СПОРОВА У СВЕТСКОЈ ТРГОВИНСКОЈ ОРГАНИЗАЦИЈИ

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### Резиме

Децембра 2019. године систем решавања спорова у Светској трговинској организацији (СТО) је постао нефункционалан, с обзиром да су мандати једног броја чланова Апелационог тела истекли, чиме је ово најзначајније судеће тело остало без неопходног кворума за одлучивање. Ово је уједно и први случај блокаде у историји решавања спорова у СТО, након више од две деценије нормалног функционисања. Међу бројним питањима и дилемама које су искреле услед ове околности, појавила се и недоумица у погледу начина утицаја блокаде Апелационог тела на процедуралне одредбе Договора о правилима и процедурама за решавање спорова (*Dispute Settlement Understanding – DSU*) које уређују суспензију концесија и других обавеза (тзв. контрамере) у постпарничној фази спора између чланица СТО. Појавила се потреба да се одговори на „питање редоследа“ у коришћењу процедуралног овлашћења тужиоца да тражи одобрење за примену контрамера у складу да чланом 22 *DSU*, с једне, и његовог права да покрене тзв. имплементациону процедуру на основу одредбе 21(5) *DSU*, с друге стране. Прецизније, проблем се састоји у питању да ли се ове две одредбе могу тумачити као одредбе у „симбиози“ или као две независне норме? Споразум *DSU*, нити било који други СТО споразум, не дају одговор на постављено питање.

Судећа тела СТО (пре свега Апелационо тело и арбитраже) су у неколико случајева исказали свој поглед на питање односа између чланова 21(5) и 22 *DSU*. Ова тела су у више наврата протумачила да *DSU* не садржи било какво разјашњење овог односа. Чак, Апелационо тело је заузело становиште да оно нема надлежност да тумачи однос између ових процедуралних норми. Ипак, Апелационо тело је демонстрирало наклоњеност позицији да не постоји „услов редоследа“ када је у питању употреба процесног овлашћења које је предвиђено чланом 22 *DSU*; то значи да чланица СТО – тужилац може покренути процедуру одобрења контрамера без обзира да ли је претходно спроведена имплементациона процедура на основу члана 21(5). Исти став су исказале и арбитраже које су поступале у споровима поводом захтева за примену контрамера. Насупрот позицији коју је установила пракса судећих тела СТО, академска јавност углавном заговара став да се однос између чланова 21(5) и 22 *DSU* рефлектује кроз услов редоследа коришћења овлашћења из ових одредби: најпре се мора окончати имплементациона процедура, па тек након тога тужилац може покренути процедуру за примену контрамера.

Међутим, оно што се намеће је потреба да се описани проблем преиспита у светлу нередовних околности које могу бити, као што можемо посведочити, изазване блокадом парничног процеса у СТО систему решавања спорова. Докле год траје блокада Апелационог тела, имплементациона процедура може бити започета, али се не може окончати, уколико једна од страна у поступку упути жалбу Апелационом телу. Стога, ако прихватимо мишљење које предлаже већина академске јавности (да се имплементациона процедура мора спровести пре про-

цедуре из члана 22), признали бисмо то да тужилац треба бити онемогућен да примени контрамере током непредвидивог периода. Тиме би се онда успоставио повољан амбијент за тужену чланцу СТО која може, користећи процедуралне технике, у недоглед опструирати одобрење контрамера против себе. Овакво полазиште би такође било у супротности са принципима *DSU*, нарочито са принципом позитивног решења спора. С тим у вези, требало би прихватити становиште да искључиво у ситуацији блокаде парничне процедуре, тужилац може покренути процедуру на основу члана 22 *DSU* и захтевати контрамере без претходно спроведене имплементационе процедуре. У редовним околностима, тужилац мора поштовати логичан редослед ових процесних права.



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