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C O N T E N T S
С А Д Р Ж А Ј

ASPIRING EARLY CHILDHOOD TEACHERS' SELF-PERCEPTION OF THEIR COMPETENCE IN THE INTEGRATION OF DIGITAL TECHNOLOGIES INTO EARLY CHILDHOOD EDUCATIONAL PRACTICE

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Abstract

The aim of this research is to consider the differences in aspiring early childhood teachers' self-perception of their competence in the integration of digital technologies into early childhood educational practice, before and after the realization of the teaching process, and before and after passing the exam for the elective course titled "An early childhood teacher in a digital environment". The research sample consisted of thirty-five third-year students of the Preschool Teacher Training and Business Informatics College of Applied Studies - Sirmium, who took and passed the exam in the elective subject "An early childhood teacher in a digital environment". The results of the study show that aspiring early childhood teachers assess their competence for the integration of digital technologies into early childhood educational practice more positively after attending classes and taking the exam in the course "An early childhood teacher in a digital environment". Future early childhood teachers feel more competent in applying digital technologies to all four areas of early childhood teachers' work: direct work with children, real program development, professional development and professional public action.

Key words: digital technologies, aspiring early childhood teachers' self-perception of competence, optional course, preschool education program, early childhood educational practice

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САМОПЕРЦЕПЦИЈА КОМПЕТЕНТНОСТИ БУДУЋИХ ВАСПИТАЧА ЗА ИНТЕГРАЦИЈУ ДИГИТАЛНИХ ТЕХНОЛОГИЈА У ВАСПИТНО-ОБРАЗОВНУ ПРАКСУ

Апстракт

Циљ истраживања је сагледавање разлика у самоперцепцији компетентности будућих васпитача за интеграцију дигиталних технологија у васпитно-образовну праксу пре и након реализације наставе и положеног испита из изборног предмета - Васпитач у дигиталном окружењу. Узорак истраживања чинило је 35 студената треће године студија Високе школе струковних студија за васпитаче и пословне информатичаре – Сирмијум који су одслушали и положили испит из изборног предмета Васпитач у дигиталном окружењу. Резултати студије показали су да будући васпитачи позитивније процењују своју компетентност за интеграцију дигиталних технологија у васпитно-образовну праксу након слушања и полагања испита из предмета Васпитач у дигиталном окружењу. Будући васпитачи се осећају компетентнијим да дигиталне технологије примењују у сва четири подручја рада васпитача: подручје непосредног рада са децом, подручје развијања реалног програма, подручје професионалног развоја и подручје професионалног јавног деловања.

Кључне речи: дигиталне технологије, самоперцепција компетентности будућих васпитача, изборни предмет, програм предшколског васпитања и образовања, васпитно-образовна пракса

INTRODUCTION

Today's generations of children consider digital technologies a natural and interesting part of growing up, and they are often in contact with them from the earliest age. However, the use of digital technologies in the process of children's learning and development in preschool institutions is still rare. Therefore, the application of digital technologies in the process of learning and development of preschool children in our preschool institutions and, more broadly, in early childhood educational practice, is limited to equipping institutions and kindergartens, and to developing the digital competencies of employees, students, or aspiring early childhood teachers.

The challenge we as teachers in institutions of higher education face is related to the preparation of aspiring early childhood teachers for the integration of digital technologies into the preschool program, which is of a different orientation compared to the previous ones. Why is this important? It is because the orientation of the preschool curriculum determines the attitude towards digital technologies and the way digital technologies are used in early childhood educational practice, and that, in turn, influences the design of subjects aimed at preparing aspiring early childhood teachers.

In order to fully understand the issue of integrating digital technologies into early childhood educational practice, we will refer to the need for continuous changes in the study programs for early childhood teach-

ers, which are conditioned by scientific knowledge and new educational policy documents.

The paradigmatic shift from the empirical-analytical (positivist) to the interpretive and critical paradigm (Vujičić, 2017) has caused changes in the perception of the child, educational practice, and the role of early childhood teachers. The modern paradigm understands the child as an active co-constructor of his own knowledge, and the theories and hypotheses about the world he lives in and interacts with on a daily basis (Barth, 2004). The child learns through social interactions with all actors in the early childhood educational process, and actively participates in decision-making, building knowledge and changing the image of the world around him. An early childhood teacher is not a person who transfers knowledge, but a professional who continuously researches and learns about ways and strategies of teaching children, and who constantly tests ways and means of creating knowledge in the specific conditions within the pre-school institution (Miljak, 2005). In other words, according to this conception, an early childhood teacher is not someone who executes pre-prescribed programs, but a researcher of real processes of children's learning and development, and a creator of real programs in early childhood educational practice.

In accordance with the aforementioned shift, changes were made in the documents related to the education policy of the Republic of Serbia. Since 2019, the Bases of Preschool Education and Education Program "Years of Rise" have been successively introduced into Serbia's education policy ("Official Gazette of the Republic of Serbia - Education Gazette", No. 16/2018). The Rulebook on Standards of Competence for the Profession of Early Childhood Teachers, important for our work and for the early childhood teachers' professional development ("Official Gazette of the Republic of Serbia - Educational Gazette", No. 16/2018), is also harmonized with the new Concept.

According to the new Concept, an early childhood teacher, starting from the theoretical-value postulates and goals of the program aimed at supporting the welfare of the child through actions and relationships, and using strategies based on the principles of the real program, develops a real program in a concrete context which consists of the culture and structure of the institution, or the physical space and the children, early childhood teacher(s), family and community which inhabit it. It follows from this that early childhood educational practice is not something that is determined, and can be predicted and planned in advance, but something that is rich in unpredictable, unexpected and unplanned influences and activities.

Taking the mentioned changes into consideration, we designed and implemented an elective subject – "An early childhood teacher in a digital environment", with which we tried to contribute to building students'

competence in the field of integrating digital technologies into early childhood educational practice, in all four areas of early childhood teachers' work: direct work with children, development of a real program, professional development and professional public action. In this paper, we want to see how students, aspiring early childhood teachers, see their competence in the field of using digital technologies in their future professional practice.

THEORETICAL BACKGROUND

The Role of Students' Education in Building Competencies for the Integration of Digital Technologies into Future Early Childhood Educational Practice

Educational colleges and faculties play an important role in providing students with the opportunities for building competencies for the adequate application of digital technologies in early childhood educational practice. "If we expect digital technologies to reach kindergartens, they should first reach early childhood teachers' schools" (Sillat, Kollom & Tammets, 2017: 1806). This indicates that it is necessary that the curriculum in the initial education of early childhood teachers also contains subjects with syllabi aimed at developing digital competencies. Regarding this, higher education teachers have a double responsibility: they should not only use digital technologies in their own teaching but should also provide opportunities for students to learn how to integrate digital technologies into future professional practice in accordance with the modern understanding of preschool children's learning and development.

Recent research shows that there is a mismatch between the level of digital competence expected of future teachers/early childhood teachers and the level of training for the integration of digital technologies which they are provided during their education (Instefjord & Munthe, 2017). The authors (Kalogiannakis, 2010; Liu & Pange, 2015; Romero-Tena et al., 2020) point to the correlation between the digital technologies courses that students attend during schooling and the use of digital technologies in practice, inadequate course plans and the inadequate preparation of aspiring early childhood teachers for their professional practice. On the other hand, it is emphasized that the adequate preparation of future early childhood teachers during their studies can determine the extent to which they will use digital technologies in their future professional practice (Nikolopoulou & Gialamas, 2015).

What do we mean by adequate preparation of future early childhood teachers? Regarding this question, it is necessary to explain the terms 'competence for something' and 'competence of an individual'. Competence for something exists in a real context and is developed in professional practice – it enables the individual to achieve goals that

he/she deems desirable. The competence of an individual is manifested through their ability to use resources in order to take action, and it is part of an intentional and planned practice (Martiner, Raymond & Gauthier, 2001).

Being competent implies more than the sum of selected and individual skills and knowledge. The triad of 'know, do and be' (or 'knowledge, skills and values') should be integrated in such a way that the individual is able to combine different aspects of their knowledge and skills in response to situations and challenges in a given context in accordance with basic values (Pavlović Breneselović, 2014a). By using the term competence (knowledge of doing something) instead of the term 'skills', the difference between the technical understanding of early childhood educational work, as the application of individual skills, and the ethical nature of early childhood educational practice, which is essentially reflective and value-based, is highlighted. These values are derived from understanding the nature of the child and how they learn, the values given through the concept of preschool education programs, and understanding the place and role of technology in the modern world and in relation to children's welfare (Pavlović Breneselović, 2014b).

Competence for the integration of digital technologies in preschool education is understood as practical wisdom that integrates values, a child's knowledge and their learning potential, and the potentials and limitations of digital technologies. All this knowledge can build skills for using digital technologies in a way that supports children's welfare and a quality program (Pavlović Breneselović, 2014a). Practical wisdom is developed through reflection, by looking at practice from different perspectives, and by looking at and understanding situations in a new way so as to use this understanding as a basis for developing new and different practices (Ryan & Grieshaber, 2005).

The adequate preparation of aspiring early childhood teachers should take into account the fact that ways of integrating digital technologies as a learning resource in real preschool education programs should be framed by the conceptual starting points of the program value-theoretical postulates about children and how they learn, the characteristics of kindergarten practice and the way of adults' (early childhood teachers, parents and members of the local environment) participation (Pavlović Breneselović, 2021). This would mean that the successful preparation of aspiring early childhood teachers in this field implies support for the development of early childhood teachers as researchers of their own practice, and that learning, in addition to teaching at an institution of higher education, should take place in direct practice. This is achievable through collaboration with colleagues, the early childhood teachers and teachers of a higher education institution, or by including reviews of the program and its starting points. Furthermore, it can be based on developing a specific topic/project. Improvement can also be expected by provid-

ing time and opportunity for experimentation and reconsideration, including the development of digital skills through participation in specific activities in all four areas of early childhood teachers' work.

The Integration of Digital Technologies into Early Childhood Educational Practice: Possibilities and Limitations

Decisions on whether and how to use digital technologies in early childhood educational practice depend on the attitudes, knowledge and skills of teachers/early childhood teachers (Hew & Brush, 2007). Research shows that the integration of technology into educational practice requires teachers'/early childhood teachers' access to relevant equipment, support in the workplace and positive attitudes towards technology (Kopcha, 2012). Ertmer et al. (2012), distinguish between first - and second-order barriers to digital technology integration. First-order barriers are defined as external, and they include areas such as access to resources, training and support, while second-order barriers are internal and include teachers' trust in, beliefs about, and perceived value of technology. Kopcha (2012) points out five barriers to technology integration that are dominant in the research literature: lack of access to technology, teachers' vision regarding technology, teachers' beliefs about the usefulness of technology, time required for the preparation of use of technology, and lack of professional development related to the use of technology in professional work (Kopcha, 2012).

Similarly, the technology integration model – will, skill, tool (WST model) (Knezek & Christensen, 2008), was developed to explain the reality of digital technology integration in an educational context. The model identifies three key elements for a high level of technology integration: the teacher's willingness to use technology in the classroom (attitudes about technology), his or her skills in using technology (digital competence) and satisfactory access to technology as a tool (access to technology) (Knezek & Christensen, 2008).

Pajares (1992) suggests that attitudes are formed on the basis of a set of beliefs about a particular object or situation, which in turn direct a person's behavior (Eisen, 2001). When groups of beliefs are organized around an object or situation and predisposed to action, this holistic organization becomes an attitude. Beliefs can also become values, which include evaluative, comparative and judgment-judging functions. Beliefs, attitudes and values form an individual's belief system (Pajares, 1992). A teacher/early childhood teacher can have many positive and negative beliefs about the use of technology, about his/her self-efficacy as a teacher/early childhood teacher, about his/her students/children. Ultimately, his or her attitude toward integrating technology into practice will be based on an overall assessment of these beliefs. It follows that one of the fun-

damental reasons why digital technologies are or are not used in the early childhood educational practice is directly related to the intentions and capacities of teachers/early childhood teachers to integrate them (Gialamas & Nikolopoulou, 2010). That is why we should pay attention to psychological factors, such as teachers' self-perception of their competencies for digital technology integration. The psychological context of practice, especially the perceptions of teachers/early childhood teachers, is crucial for understanding their daily work with digital technologies (Wang et al., 2008). Thus, the perceptions that teachers/early childhood teachers have about the use of digital technologies can strongly influence their classroom/group practice (Austin et al., 2010). Teachers' beliefs and perceptions are important because they provide the best indicators of the decisions that individuals make throughout their lives. Therefore, they act as guides for thinking and behaving, and positively or negatively affect individual work and learning (Vries, Van de Grift & Jansen, 2014). The study (Dong, 2018) points to a high correlation between teacher's perception and pedagogical practice, and the importance of providing effective learning and development programs so that teachers/early childhood teachers can use a wider range of pedagogical strategies to support children's use of digital technologies.

So far, there have been several studies (Romero-Tena et al., 2020; Sillat, Kollom & Tammets, 2017) that explore the changes needed in the education of future early childhood teachers to support the development of their digital competencies and the integration of digital technologies into their future professional practice. Our research is aimed at examining whether students', or aspiring early childhood teachers', self-perceptions of their competence for the integration of digital technologies into early childhood educational practice can be improved under the influence of the elective subject "An early childhood teacher in a digital environment".

The Concept of the Elective Course
"An Early Childhood Teacher in a Digital Environment"

How did we design the elective course "An early childhood teacher in a digital environment"?

We started from the socio-constructivist, postmodernist and poststructural perspectives, which are today present in the perception of various aspects of the system of social care for children and preschool education, the preschool curriculum and teaching methods (Woodhead, 2012).

'Developmentally appropriate practice' (DAP) has long been a catalyst for significant debates about what should be the framework of preschool education policy and practice. The concept of 'developmentally appropriate practice' was most explicitly formulated by the National Association for the Education of Young Children in the United States in the 1980s as a 'scientific defense' of play-based preschool programs (Bredekampf, 1987). The DAP

concept largely reflects the values based on the traditional child-centeredness of preschool programs, reinforced by Piaget's theory of development, emphasizing the universal stages of development, the importance of free play, research and learning that is based on the child's activities, as well as the guiding and supporting role of trained practitioners (Woodhead, 2012). One of the ways of opposing idealized universal developmental assumptions and implicit 'developmentally appropriate practices' is the alternative concept of 'contextually appropriate practice' (KAP) (Woodhead, 1998). By providing an alternative concept, attention is drawn to a different understanding that early childhood policies, services, educational programs and practices must take into account the contexts in which children live, the material and cultural resources available to their parents and community, and the expectations and aspirations of parents and the community in relation to children (Woodhead, 2012). By placing the concept of 'contextually appropriate practice' against the concept of 'developmentally appropriate practice', attention is drawn to a key theoretical discussion of the nature of child development. A significant portion of sociocultural research challenges the idea of defining development by age (Rogoff, 2003; Vygotsky, 1998). This research, therefore, also challenges the idea that development and age can be used to define and construct programs. Three key topics which are important for preschool education policy are particularly highlighted: (1) diversity in early childhood (respect for diversity between and within societies, and recognizing the challenges of social changes, such as migration and multiculturalism, are essential issues for social care policy and practice in relation to children and preschool education); (2) development as a social and cultural process (instead of viewing early childhood as a universal, decontextualized process of development towards maturity, which is taken for granted, attention is drawn to the inclusion of young children in a range of environments, relationships, activities and skills through which they acquire cultural competences and build identity); and (3) early childhood as a social construct (the socio-cultural paradigm emphasizes that the contexts and processes of early childhood are shaped through human activity which is by its nature social and always mediated by cultural processes, including different, sometimes opposing cultural viewpoints on the needs of young children in relation to their individuality, gender, ethnicity, as well as a number of other factors) (Woodhead, 2012). Socio-constructivist, postmodernist and post-structuralist perspectives in particular have influenced the liberation from narrow definitions of what is considered natural, normal and necessary in development, creating room for a historical and political perspective on how our knowledge and beliefs about young children, and early childhood institutions, policies, practices and theories shape children's lives (Qvortrup et al., 1994; James & Prout 1990; according to: Woodhed, 2012).

Support in designing the elective course came from the Basics of the preschool education program "Years of Rise" ("Official Gazette of

RS - Education Gazette", No. 16/2018) and its main points: (1) the child is understood as a unique and complete being full of potential; (2) the child is creative, an active participant, committed to learning, and a playful gamer and explorer; (3) the aim of the program is to support the personal, professional and social well-being of the child through action and relationships; (4) the child learns in an integrated manner, and learning is a process of the co-construction of knowledge with peers and adults in situations that have personal sense and meaning for the child; (5) space has physical, social and symbolic dimensions that support research, exchange, participation and a sense of belonging (Pavlović Breneselović and Krnjaja, 2014); (6) the educator develops the program through planning, joint development, and monitoring and evaluation through documentation; (7) the dominant methodical approach is project learning – connecting with specific experiences and life topics of children; (8) research of alternative solutions; (9) the appreciation and strengthening of children's power (Pavlović Breneselović and Krnjaja, 2014); (10) the project is guided by a question, an idea and/or the intention of in-depth research into a problem that is meaningful and challenging for children to research and through which they create authentic solutions ("Official Gazette of RS - Education Gazette", No. 16/2018); and (11) documentation is in the function of developing a realistic program through dialogue and critical review.

In addition to the theoretical assumptions and the "Years of Rise", the Rulebook on Standards of Competences for the profession of an early childhood teacher and his professional development ("Official Gazette of RS – Education Gazette", No. 16/2018) had an important role in creating the syllabus of the elective course "An early childhood teacher in a digital environment".

In the following text, we state the goal of the course, its expected outcomes, and the content of the course (theoretical and practical teaching).

The aim of the course. The aim of the course is to develop a culture of using digital technologies in the professional practice of early childhood teachers. The development of digital competencies in the function of realizing the professional role of early childhood teachers is addressed through four areas: direct work with children, developing a real program, professional development and professional public action.

Outcome of the course. The course is expected to result in students knowing the place, role and importance of digital technologies integration in all four areas of early childhood teachers' work. A student should be able to: assess the quality, reliability and usability of information; apply digital technologies in direct early childhood education practice; use digital technologies in planning activities and designing the necessary materials, and in observation, evaluation and documentation; use digital technologies to work with data; control the dangers of digital

technologies; develop awareness and habits in children and parents for the adequate use of digital technologies; apply digital technologies in the exchange of information with family, colleagues, associates, the local community and other stakeholders and institutions; and use digital technologies for professional development and professional public action.

Theoretical teaching. Digital environment – basic concepts and terminological determinants; digital competence in the standards of competence for the early childhood teachers profession and his professional development; creating an environment for the use of digital technologies in professional practice; Internet search; a student works on a project in a digital environment; digital technologies in the function of exchanging information with a family, colleagues, local community; immediate early childhood education practice with children with the support of digital technologies; planning with the support of digital technologies; joint development of programs with the support of digital technologies; monitoring, documentation and evaluation with the support of digital technologies; professional development of early childhood teachers with the support of digital technologies; professional public action with the support of digital technologies; limitations and shortcomings of the application of digital technologies in professional practice; child safety on the Internet; challenges of parenting in a digital environment.

Practical teaching. Practical teaching outcomes include a focus on sources of knowledge in a digital environment; solving problems in the web environment; digital tools for collaboration and communication; digital tools for creating presentations; digital tools for creating and processing, photography, video and audio content; digital tools for creating didactic games, quizzes, questionnaires; digital tools for creating interactive books; project work; application of digital tools in planning; application of digital tools in program development; application of digital tools in observation, evaluation and documentation; application of digital tools in the field of practice research; use of digital tools in professional development; use of digital tools in the function of promoting preschool education and the profession of early childhood teachers; risks in a digital environment.

METHODOLOGY

The aim of this research is to see the differences in aspiring early childhood teachers' self-perceptions of their competence for the integration of digital technologies into early childhood educational practice, before and after attending classes and passing the exam in the elective course "An early childhood teacher in a digital environment".

We wanted to find out if there was a change in the self-assessment of competence in aspiring early childhood teachers for the integration of

digital technologies under the influence of the implementation of the elective course "An early childhood teacher in a digital environment".

  The research sample consisted of 35 third-year students of the Preschool Teacher Training and Business Informatics College of Applied Studies - Sirmium who took and passed the exam in the elective course "An early childhood teacher in a digital environment" (Table 1). The research was realized during the summer term of the school year 2020/2021.

Table 1. General characteristics of the respondents

	[ALL] N=35
Gender:	
Male	0 (0%)
Classes Female	35 (100%)
Rating, mean ± standard deviation (range)	8,31±1,18 (6 – 10)

  Based on the Rulebook on Standards of Competences for the profession of an early childhood teacher and his professional development ("Official Gazette of RS – Education Gazette", No. 16/2018), a scale for the self-assessment of students' competence was constructed for the purposes of this research. The students performed the evaluation of their competence immediately before attending lectures (February, 2021) and after passing the exam for the elective course "An early childhood teacher in a digital environment" (July, 2021) through a Google questionnaire, which was distributed to them by email.

  The first part of the questionnaire contained questions for collecting general information about the respondents (respondents' gender and results in the exam in the elective course, "An early childhood teacher in a digital environment"). The second part of the questionnaire was a five-point Likert-type scale, consisting of twenty-eight statements (items) (Table 2). The questionnaire showed high reliability (Cronbach's Alpha = 0.903).

Table 2. Claims (IT items) from the research instrument

Code	Item Definition Code
IT1	I can use digital technologies in finding and collecting relevant information and educational materials for early childhood educational practice.
IT2	I can use digital technologies in planning early childhood educational practice.
IT3	I can use digital technologies to follow modern professional literature and trends in the development of early childhood education
IT4	I can use digital technologies to share information with family, colleagues, associates, the local community and other stakeholders and institutions.
IT5	I can use digital technologies together with children to access information and different sources of learning.
IT6	I can use digital technologies to summarize, compare and consolidate information from different digital sources.

IT7	I can use digital technologies together with children to express and present in the function of play and research.
IT8	I can use digital technologies in the implementation of professional development (online seminars, for professional contributions and materials, to access various platforms for exchange).
IT9	I can use digital technologies together with children to document various activities and processes in the early childhood group, kindergarten, local community.
IT10	I can use digital technologies in the realization of a parent meeting (for preparation and presentation, for presentation of practice, for creating questionnaires, materials ...).
IT11	I can use appropriate digital tools to create materials for early childhood educational practice.
IT12	I can use the possibilities of free access to educational resources (applications, platforms) to support children's play and research.
IT13	I can use digital technologies to document and analyze my own practice (video camera, camera, computer).
IT14	I can use digital tools to participate in the development of reflective practice through collaboration, exchanges and joint research with professional associates and colleagues.
IT15	I can use digital tools to organize and classify information (chart diagrams, charts, planners, schedules, mind maps, animations, video tutorials, etc.).
IT16	I can use digital technologies for managing pedagogical documentation (for managing thematic/project portfolio, monitoring project activities, children's statements).
IT17	I can use digital tools to engage in the local community to promote the rights of the child and the family and to promote pre-school education.
IT18	I use digital technologies to document children's learning and development (children's portfolio).
IT19	I use digital technologies to promote preschool education and the profession of educators by participating in professional gatherings, publishing professional papers.
IT20	I know ways to develop children's habits for the safe use of digital technologies.
IT21	I know how to work with parents on the safe use of digital technologies.
IT22	As a future early childhood teacher, I believe that I am always able to control the shortcomings and dangers of the application of digital technologies.
IT23	I am aware of the disadvantages and dangers of children's use of digital technologies.
IT24	I consider myself competent to use digital technologies in the field of professional development.
IT25	I believe that I am competent to use digital technologies in the field of professional public action.
IT26	I believe that I am competent to use digital technologies in the field of direct work with children.
IT27	I consider myself competent to use digital technologies in the field of program development.
IT28	I think it is important for an early childhood teacher to use digital technologies for their professional development.

Frequencies, percentages, and sample mean value (arithmetic mean) with the corresponding standard deviation were used to describe the parameters of importance, depending on their nature. Both the minimum and the maximum sample values of numerical variables are presented. Principal components (Direct Oblimin Rotation) were used to examine the factor structure of the questionnaire. The reliability of the questionnaire was determined by the Cronbach's Alpha coefficient. Paired Samples t-Test was used to examine the differences before and after the program (two time intervals). The probability level was set at $p \leq 0.05$. Statistical processing and analysis were done in the statistical package SPSS ver. 25.0 (Statistical Package for the Social Sciences) for Windows.

The respondents were asked to express their degree of agreement with 28 statements of the questionnaire on the Likert five-point scale (1 = I do not agree at all, 5 = I completely agree). The factor structure of the questionnaire was examined. Direct Oblimin Rotation of the factors was used. The formation of the factor model is based on the assumption that variables can be grouped into different groups according to their correlations. Within each group there are mutually highly correlated variables. The intrinsic values are shown in Table 3. The intrinsic value is the part of the variance that is explained by one main component, and the goal is to extract as much of the variance as possible in the first few main components. According to the Kaiser-Guttman criterion, factors with an intrinsic value greater than 1 should be retained. According to this criterion, two components meet the condition, explaining a total of 43.2% of the variance. The first main component explains 32.9% of the total variance, while the second main component explains 10.3% of the variance. By examining the interrelationship of the obtained factors, it was found that the correlation was low ($r = 0.209$).

Table 3. Intrinsic values

Component	Intrinsic value	Percentage of total variance	Cumulative percentage of total variance
1	9,221	32,932	32,932
2	2,884	10,3	43,232

Display of components with Intrinsic values above 1.

The grouping of items around individual factors is shown in Table 4. Two factors have been singled out. The first factor consists of 18 items of the questionnaire, with factor saturations on this factor ranging from 0.884 to 0.467. The second factor consists of 10 items with a factor saturation of 0.612 to 0.482. The factors are named on the basis of the items that make them up: *Professional development and professional public action* and *Development of a real program and direct work with children.*

Table 4. Factor structure of the questionnaire

Factors	Items	Component	
		1	2
	IT 21	0,884	
	IT 23	0,834	
	IT 27	0,826	
	IT 25	0,779	
	IT 24	0,719	
	IT 20	0,695	
	IT 28	0,693	-0,353
Professional	IT 10	0,666	
development	IT 26	0,655	
and professional	IT 15	0,644	
public action	IT 22	0,644	
	IT 19	0,632	
	IT 18	0,629	
	IT 3	0,555	
	IT 17	0,549	0,451
	IT 16	0,519	
	IT 8	0,501	
	IT 14	0,467	0,338
	IT 1		0,818
	IT 4		0,612
	IT 12	0,349	0,612
Developing a	IT 13		0,599
real program	IT 9		0,576
and direct work	IT 5		0,559
with children	IT 11	0,304	0,489
	IT 6		0,482
	IT 7		0,477
	IT 2		0,320

Principal Component Analysis. Direct Oblimin.
Factor saturations greater than 0.3 are shown.

RESULTS AND DISCUSSION

The self-perception of students' competence for the application of digital technologies in early childhood educational practice was examined before and after the implemented program (Table 5). Differences in use were tested by t-Test for paired samples. Differences were noted in almost all items of the questionnaire. After deciding on the elective course and passing the exam, the respondents believe, in relation to the initial measurement, that they are more competent in the following fields of use: digital technologies in finding and collecting relevant information and educational materials for the early childhood educational practice (IT1); digital technologies in the planning of the early childhood educational

practice (IT2); digital technologies for monitoring modern professional literature and trends in the development of preschool education (IT3); digital technologies for the exchange of information with family, colleagues, associates, local community, and other stakeholders and institutions (IT4); digital technologies for summarizing, comparing and aggregating information from different digital sources (IT6); digital technologies together with children for expression and presentation in the function of play and research (IT7); digital technologies together with children for documenting various activities and processes in the early childhood group, kindergarten, and local community (IT9); digital technologies in the realization of meetings with parents (IT10); appropriate digital tools for creating materials for the early childhood educational practice (IT11); free access to educational resources (applications, platforms) in support of children's play and research (IT12); digital technologies for documenting and analyzing one's own practice (IT13); digital tools for participating in the development of reflective practice through cooperation, exchange and joint research with professional associates and colleagues (IT14); digital tools for organization and classification of information (IT15); digital technologies for keeping pedagogical documentation (IT16); digital tools for engaging in the local community to promote the rights of children and families, and to promote preschool education (IT17); digital technologies for documenting children's learning and development (IT18); and digital technologies for promoting preschool education and the profession of an early childhood teacher by participating in professional gatherings, publishing professional papers (IT19). The respondents showed higher scores after the program in relation to the initial testing on the following items: I know ways to develop children's habits for safe use of digital technologies (IT20); I know how to cooperate with parents in terms of the safe use of digital technologies (IT21); I believe that as an aspiring early childhood teacher I am always able to control the shortcomings and dangers of the application of digital technologies (IT22); I consider that I am competent to use digital technologies in the field of professional development (IT24); I consider that I am competent to use digital technologies in the field of professional public action (IT25); I think I am competent to use digital technologies in the field of direct work with children (IT26); and I consider myself competent to use digital technologies in the field of program development (IT27).

No statistically significant difference was found for the following items: I use digital technologies together with children to access information and different sources of learning (IT5); I use digital technologies within the realization of professional training (IT8); I am familiar with the shortcomings and dangers of children using digital technologies (IT23); and I think it is important that digital technologies are used for the professional development of early childhood teachers (IT28).

Table 5. Self-assessment of the use of digital technologies in the early childhood educational practice before and after the course

Items	I measurement	II measurement	95% Confidence Interval of the Difference		t	df	*p* Value
			Lower	Upper			
IT1	4,2±0,68	4,74±0,44	-0,784	-0,302	-4,584	34	< 0,001
IT2	3,8±0,53	4,54±0,51	-0,998	-0,488	-5,928	34	< 0,001
IT3	4,06±0,68	4,4±0,5	-0,665	-0,021	-2,163	34	0,038
IT4	4,17±0,71	4,51±0,51	-0,606	-0,080	-2,652	34	0,012
IT5	3,94±0,87	4,2±0,72	-0,624	0,109	-1,426	34	0,163
IT6	3,97±0,66	4,34±0,48	-0,636	-0,107	-2,853	34	0,007
IT7	3,66±0,73	4,49±0,51	-1,123	-0,534	-5,720	34	< 0,001
IT8	4,43±0,74	4,6±0,5	-0,466	0,123	-1,183	34	0,245
IT9	3,46±0,92	4,29±0,62	-1,241	-0,416	-4,084	34	< 0,001
IT10	3,43±1,09	4,37±0,73	-1,414	-0,472	-4,069	34	< 0,001
IT11	3,29±1,05	4,29±0,57	-1,391	-0,609	-5,201	34	< 0,001
IT12	3,77±0,94	4,4±0,55	-0,930	-0,327	-4,239	34	< 0,001
IT13	3,77±0,73	4,57±0,56	-1,131	-0,469	-4,909	34	< 0,001
IT14	3,49±0,7	4,43±0,61	-1,231	-0,655	-6,655	34	< 0,001
IT15	3,89±0,9	4,37±0,6	-0,862	-0,110	-2,625	34	0,013
IT16	3,09±1,12	4,14±0,55	-1,528	-0,586	-4,563	34	< 0,001
IT17	3,6±1,01	4,34±0,64	-1,186	-0,299	-3,404	34	0,002
IT18	3,43±0,81	4,26±0,74	-1,265	-0,392	-3,855	34	< 0,001
IT19	3,51±1,15	4,14±0,55	-1,100	-0,157	-2,707	34	0,011
IT20	3,51±0,78	4,23±0,65	-1,043	-0,386	-4,415	34	< 0,001
IT21	3,49±1,04	4,14±0,6	-1,020	-0,295	-3,683	34	0,001
IT22	3,49±0,82	4,2±0,58	-1,043	-0,386	-4,415	34	< 0,001
IT23	4,26±0,7	4,4±0,55	-0,277	0,335	0,190	34	0,851
IT24	3,63±0,55	4,23±0,6	-0,891	-0,309	-4,190	34	< 0,001
IT25	3,49±0,74	4,06±0,59	-0,897	-0,246	-3,565	34	0,001
IT26	3,69±0,53	4,23±0,55	-0,811	-0,275	-4,117	34	< 0,001
IT27	3,46±0,66	4,17±0,51	-1,021	-0,407	-4,730	34	< 0,001
IT28	4,14±0,69	4,4±0,55	-0,525	0,011	-1,950	34	0,059

Mean ± standard deviation is shown in the table.
Abbreviations: t=paired t-test, df=degree of freedom.

We also examined whether the score on the components of the questionnaire was statistically significantly different before and after the implemented program (Table 6). There are statistically significant differences on both factor 1 (Professional development and professional public action) (3.66 ± 0.55 vs. 4.28 ± 0.34, p <0.001) and factor 2 (Real program development and direct work with children) (3.80 ± 0.40 vs. 4.43 ± 0.31, p <0.001) before and after the program.

The results of our research are in compliance with the results of a study conducted by Romero-Tena et al., whose results indicate that attending the course "Application of Information and Communication Technology in Preschool" was a key element for improving the self-

perception of the digital competence of aspiring early childhood teachers (Romero-Tena et al., 2020).

Table 6. Self-assessment of components of digital technologies application in early childhood educational practice before and after program implementation

Components	I measurement	II measurement	95% Confidence Interval of the Difference		t	df	*p* Value
			Lower	Upper			
F1	3,66±0,55	4,28±0,34	-0,839	-0,388	-5,532	34	< 0,001
F2	3,80±0,40	4,43±0,31	-0,788	-0,479	-8,343	34	< 0,001

Mean ± standard deviation is shown in the table.
Abbreviations: t=paired t-test, df=degree of freedom.

The sample consisted of 4th year students of early childhood educational studies who attended the University of Seville during the academic years 2016/2017, 2017/2018 and 2018/2019. A total of 535 students participated in the research. Statistically significant changes were found before and after the implementation of teaching in the mentioned subject. In the study of their profiles, changes in the self-perception of their competence were identified: while before the training students were grouped into newcomers and categories of researchers, after the training they were grouped into the highest profiles – those of an integrator and an expert (Romero-Tena et al., 2020).

Both our and the above-mentioned research point to the importance of and need for enabling an aspiring early childhood teacher to acquire an adequate education during their studies in order to ensure that the student perceives himself/herself competent enough to integrate digital technologies into their future professional practice.

CONCLUSION

In this paper, we wanted to shed light on two issues related to the implementation of digital technologies into early childhood educational practice: how to design a curriculum that supports the development of students'/aspiring early childhood teachers' competencies for the integration of digital technologies into their early childhood educational practice, and whether a carefully designed and implemented subject syllabus contributes to a change in students' self-perception of digital competence for the integration of digital technologies into their future professional practice.

We decided on these two questions based on research findings that indicate, on the one hand, that the hindering factor in the development of digital competences of teachers/early childhood teachers and the imple-

mentation of digital technologies may appear in the training of teachers/early childhood teachers at different levels of professional development, because little support for certain digital skills is offered, and little attention is paid to the use of technology in the function of children's learning and development (Liu, Toki & Pange, 2014). On the other hand, research findings also indicate that one of the important factors that determines whether future educators will integrate digital technologies in their future work is their self-perception of the use of digital technologies, that is, the self-perception of competence for the integration of digital technologies into future professional practice (Romero-Tena et al., 2020).

The results of the study show that aspiring early childhood teachers assess their competence for the integration of digital technologies into early childhood educational practice more positively after attending lectures and taking the exam in the optional course "An early childhood teacher in a digital environment". Moreover, aspiring early childhood teachers are of the opinion that their digital competencies improved after attending the lectures of the subject program and passing the exam within both separate factors: *Professional development and professional public action* and *Development of a real program and direct work with children*. Namely, aspiring early childhood teachers feel more competent to apply digital technologies in all four areas of early childhood teachers' work: direct work with children, real program development, professional development and professional public action. These results are encouraging, as research findings indicate that attitudes, the development of digital competencies and adequate training have a positive impact on the integration of digital technologies into early childhood educational practice (Gialamas & Nikolopoulou, 2010) and that, on the other hand, the same factors may hinder digital technology integration into early childhood educational practice (Sillat, Kollom & Tammets, 2017).

We believe that this is the result of the research related to the content of the program and the questionnaire itself being harmonized with the modern understanding of a child, their learning and development, and the role of early childhood teacher and new educational policy documents. This points to the importance of the integration of digital technologies as a learning resource into the preschool education program, and to the fact that the integration should be framed by the conceptual starting points of the program. Furthermore, this implies harmonization of the subject syllabi within the study programs for early childhood teachers' education with theoretical settings and requirements of early childhood educational practice. The next step is to harmonize first- and second-order barriers, external and internal, as Ertmer et al. (2012) call them, in order to adequately support the integration of digital technologies into early childhood educational practice during their studies.

We see the limitation of this research in a small sample of respondents and in its reliance only on the aspiring early childhood teacher's self-perceptions. Further research should be focused on examining and understanding the students' competence for the integration of digital technologies in their direct work in a kindergarten during methodological exercises and/or professional practice. Based on these findings, the subject syllabus is to improve.

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САМОПЕРЦЕПЦИЈА КОМПЕТЕНТНОСТИ БУДУЋИХ ВАСПИТАЧА ЗА ИНТЕГРАЦИЈУ ДИГИТАЛНИХ ТЕХНОЛОГИЈА У ВАСПИТНО-ОБРАЗОВНУ ПРАКСУ

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Резиме

Будући да су дигиталне технологије саставни део контекста одрастања деце, рад се посредно бави питањем укључивања дигиталних технологија у праксу предшколског васпитања и образовања, а непосредно развојем компетенција будућих васпитача за интегрисање дигиталних технологија у њихову будућу праксу. Парадигматски помак од позитивистичке ка интерпретативној и критичкој парадигми условио је промене у сагледавању детињства и детета, васпитно-образовне праксе, као и улоге васпитача. У складу са тим помаком дошло је до промена у документима образовне политике Републике Србије. С друге стране, у недавним истраживањима се истиче да постоји неусклађеност између нивоа дигиталне компетентности која се очекује од будућих наставника/васпитача и обуке за интеграцију дигиталних технологија која им се пружа током образовања. Истраживања, такође, указују да перцепције које наставници/васпитачи имају о употреби дигиталних технологија могу снажно да утичу на њихову професионалну праксу. Полазећи од наведених промена и налаза истраживања обликовали смо и реализовали изборни предмет „Васпитач у дигиталном окружењу", којим смо настојали да допринесемо изградњи компетентности студената у домену интегрисања дигиталних технологија у васпитно-образовну праксу, у сва четири подручја рада васпитача: подручја непосредног рада са децом, подручја развијања реалног програма, подручја професионалног развоја и подручја професионалног јавног деловања. Након одслушаног изборног предмета и положе-

ног испита, сагледали смо како студенти перципирају своју компетентност у домену коришћења дигиталних технологија у будућем раду. Самоперцепције компетентности будућих васпитача испитане су применом петостепене скале Ликертовог типа креиране на основу Правилника о Стандардима компетенција за професију васпитача и његовог професионалног развоја ("Сл. гласник РС – Просветни гласник", бр. 16/2018). С обзиром да су самопроцене компетентности будућих васпитача након положеног испита из изборног предмета „Васпитач у дигиталном окружењу" позитивније у сва четири подручја рада васпитача, важно је истаћи да начини интегрисања дигиталних технологија треба да буду уоквирени концепцијским полазиштима програма, а то даље имплицира усклађивање курикулума предмета у оквиру студијских програма за образовање васпитача са теоријским поставкама и захтевима васпитно-образовне праксе.

L2 ENGLISH ARTICLE SUPPLIANCE AMONG TERTIARY LEVEL STUDENTS: THE IMPACT OF SPECIFICITY

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Abstract

The aim of this paper was to determine the role of specificity in the English article suppliance of L1 Serbian speakers. Its impact on the suppliance of the definite article (*the*), the indefinite article (*a/an*), and the zero article ($\varnothing$) was determined based on a 40-item questionnaire. The items were classified into four groups defined by the combinations of two semantic features: [±specific] and [±definite]. Differences in article suppliance were studied between a group of English and non-English language majors in order to take into account the level of L2 proficiency. The population of L1 Serbian/L2 English speakers was chosen since Serbian is an articleless language and is, unlike English, considered to code specificity. The results indicated statistically significant differences between the participants in terms of correct article suppliance and L2 proficiency in favor of the English language majors. However, no impact of specificity on article suppliance was noted for either group of participants.

Key words: specificity, L2 proficiency level, English article instruction, tertiary level education

УПОТРЕБА ЧЛАНОВА У ЕНГЛЕСКОМ ЈЕЗИКУ КОД СТУДЕНАТА НА ТЕРЦИЈАРНОМ НИВОУ СТУДИЈА: УТИЦАЈ СПЕЦИФИЦИРАНОСТИ

Апстракт

Циљ истраживања био је да се утврди утицај специфицираности на употребу чланова у енглеском језику на узорку испитаника чији је матерњи језик српски. Утицај овог фактора на употребу одређеног, неодређеног, и нултог члана анализиран је на основу одговора датих у упитнику који се састојао од 40 питања. Питања су даље подељена у четири групе дефинисане комбинацијом одлика [±специфициран] и [±одређен]. Разлике у употреби чланова испитиване су на узорку групе студената енглеског језика и групе студената са других студијских програма како би се у обзир узео и ниво познавања енглеског језика. Популаци-

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ja изворних говорника српског језика одабрана је због изостанка граматичке категорије члана у овом језику, и чињенице да се српски језик доводи у везу са одликом [±специфициран], а не [±одређен] као што је то случај у енглеском језику. Резултати су указали на статистички значајне разлике у тачној употреби чланова у корист групе студената енглеског језика, као и значајне разлике у нивоу познавања енглеског језика. Утицај специфицираности на употребу чланова у испитаној популацији није потврђен.

Кључне речи: специфицираност, ниво познавања енглеског језика, учење
чланова у енглеском језику, терцијарни ниво образовања

INTRODUCTION

The English article system is not acquired with ease by L2 learners, due to its semantic complexity (Ionin et al. 2004; Ionin et al. 2008; Ionin et al. 2009; Ionin et al. 2011; Trenkić 2008; García Mayo 2009; Lopez 2017 inter alia) and its apparent imperviousness to long-term effects of instruction (Akakura 2012). Articles are non-salient or fragile features (Ellis 2006) for which exposure alone will not facilitate perception or acquisition. More advanced learners still struggle with article suppliance (Cowan 2008; Snape 2008; Umeda et al. 2017), which leads to persistent errors of article omission and article substitution.

The languages in which specificity and definiteness have been studied are numerous,[1] as are the morphosyntactic forms by which they are conveyed in various languages. The relationship between them is based on the identifiability of the referent. Specifically, if a referent is identifiable to both the speaker and the hearer, then a definite NP is required; if it is identifiable only to the speaker, or if there is referential intention on the part of the speaker, that is, if the referent possesses a feature considered noteworthy to the speaker, a specific indefinite NP is required (Givón 1978; Hedberg et al. 2009 inter alia); finally, if it is not possible to identify the referent, a non-specific indefinite NP is used (von Heusinger 2002: 249).

In some languages, referential relations are based on definiteness (English), while in others, they are based on specificity (Serbian). L2 learners are taught that definiteness is conveyed using the definite article in English, and indefiniteness by using the indefinite article. Yet, in the very same language, the feature '(non)specific' is used in relation to definites and indefinites alike (see examples (1)-(4)). Serbian relies on a variety of parts of speech and even word order to convey what is in other languages expressed

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[1] They include the African language of isiXhosa (Visser 2008), Russian and Korean (Ionin et al. 2004), Chinese (Lopez 2017), Samoan inter alia (Tryzna 2009), Japanese (Umeda et al. 2017), Abui (Kratochvíl & Delpada 2015), Spanish (Garcia-Mayo 2009), Turkish (Snape & Kupisch 2010), Turkish and Persian (Hedberg, Görgülü, Mameni 2009), and Croatian (Martinović & Balenović 2020), inter alia.

through the use of articles (see Đorđević (1989) and Trenkić (2002, 2004)). For L1 Serbian learners, the issue is further convoluted by the fact that Serbian is an articleless language, and by the fact that the material used for L2 article instruction in the Serbian linguistic environment makes no overt reference to specificity, as seen in Veličković (2021).

In some languages, specificity can be encoded in the article system, as in Samoan (Lyons 1999), or in affixes, as in Turkish (Enç 1991). When it comes to the Serbian language, specificity is said to be found in the aspect of adjectives. Trenkić (2004: 1045-1046) illustrated the distinction between *mudar čovek* and *mudri čovek*, where the latter refers to a specific wise man. Based on an analysis of further examples, the author concludes that what is at stake is the speaker's own ability to identify the referent as salient, without any indication of the status of the referent for the hearer. With the exception of Avery and Radišić (2007), Ko et al. (2008), Trenkić (2002, 2004), and Veličković (2018, 2019a, 2019b inter alia), the number of studies focusing on L1 Serbian speakers is limited. Thus, the L2 article suppliance of L1 Serbian learners of English of all levels still represents a fertile ground for study.

The paper is organized as follows. The first section provides a theoretical account of both specificity and definiteness, and an overview of selected previous studies. The next section presents the methodology and the results of this study, followed by a discussion section. The paper ends with concluding comments on the limitations of the study, and proposals for further research.

THEORETICAL BACKGROUND

Definiteness and Specificity: an Overview

Traditionally, definiteness has been linked to four features (Russel (1905), Christopherson (1939), Jespersen (1949), Donnellan (1966), Hawkins (1978, 1991), Lyons (1999), von Heusinger (2002) inter alia). First, there are identifiability and uniqueness, which indicate that the speaker assumes the referent to be 'uniquely identifiable' to the hearer (Givon 1978: 296). Second, there is familiarity, which is defined as a discourse pragmatic property usually ascribed to previously mentioned referents (von Heusinger 2002: 252). Finally, there is maximality, or totality, which refers to scope (Hawkins 1978, 1991).

Accounts of specificity date back to the 1960s, and are linked to theoretical concepts associated with definiteness, such as discourse anaphora, referential and attributive readings, or even referential and existential readings. Specificity is a term initially used to account for the use of indefinite NPs, but has, over time, evolved to include: Referential Specificity, Scopal Specificity, Epistemic Specificity, Partitive Specificity, Topical Specificity, Noteworthiness Specificity, and Discourse Promi-

nence (von Heusinger et al. 2011). They are illustrated, respectively, as follows (ibid, p. 1027-1028, comments added):

(1) Paula believes that Bill talked to an important politician. (existential entailment)

(2) If a friend of mine from Texas had died in the fire, I would have inherited a fortune. (escaping scope islands in conditional clauses)

(3) A student in Syntax 1 cheated in the exam. I know him: It is Jim Miller. (speaker's knowledge)

(4) 50 students entered the room. I knew two girls. (part of an already introduced set)

(5) Some ghosts live in the pantry; others live in the kitchen. (topical element)

(6) He put a 31 cent stamp on the envelope, and only realized later that it was worth a fortune because it was unperforated. (intention to refer to a noteworthy feature)

(7) There was a king and the king had a daughter and he loved his daughter … (referential persistence, introducing a referent that will be mentioned again).

Due to the distribution of either specificity or definiteness in the world languages, *the* or *a/an* will at times exemplify both features, neither, or a combination thereof. Examples include the following (Lyons 1999: 167, original emphasis):

(1) Joan wants to present the prize to **the winner** – but he doesn't want to receive it from her. [+definite, +specific]

(2) Joan wants to present the prize to **the winner** – so she'll have to wait around until the race finishes. [+definite, −specific]

(3) Peter intends to marry **a merchant banker** – even though he doesn't get on with her at all. [−definite, +specific]

(4) Peter intends to marry **a merchant banker** – though he hasn't met one yet. [−definite, −specific]

Ambiguity can and does occur, as can be seen from the example provided by Kratochvíl and Delpada (2015: 182):

(5) John would like to marry a girl his parents don't approve of.

If we were to provide a [+specific] reading, a claim would be made that the speaker has a particular referent in mind. And if John does have a partner, then that criterion would be satisfied. But if he has not yet met that person, and is merely looking, then the reading is marked as [-specific].

The link with definiteness implied here has to do with the established concepts of uniqueness or maximality, identifiability, and anaphora, as well as discourse prominence, a feature linked to the use of the definite article by Epstein (2001). Therefore, in light of the mutual relationship between the [±specific] and [±definite] features, their impact on L2

English article suppliance warrants further consideration. The question therefore is: how important is specificity for L2 article suppliance?

Previous Research

Numerous authors have weighed in on what in theory affects L2 article production: Ionin (2003) and the Article Choice Parameter Hypothesis; Goad et al. (2003) and the Prosodic Transfer Hypothesis; Trenkić (2002, 2004, 2007) and the Syntactic Misanalysis Account; White (2003, 2008) and White et al. (2012) and the definiteness effect (per Milsark, 1977); Avery & Radišić (2007) and the non-Uniformity Assumption, to name but a few.

Ionin (2003; Ionin et al. 2004; Ionin 2006; Ionin et al. 2008; Ionin & Montrul 2009) studied languages with and without an article system, which code either specificity or definiteness. Their proposed theoretical framework for L2 article use included the Article Choice Parameter and the Fluctuation Hypothesis.[2] These accounts are founded on the premise that the same article is used in both definite and indefinite contexts at the same time, and sometimes even by the same speaker. These mistakes, or fluctuations, in L2 article use are not random; they indicate how far the learner has come in attempting to mimic native speaker-like article production. The process, not being linear, leads to fluctuations between relying on definiteness or specificity in article choice.

Analyzing the possible combinations of the [±specific] and [±definite] features, Ionin et al. (2004) determined which combination could pose potential difficulties for correct L2 article suppliance among NNSs.[3] It was indicated that L2 English learners overuse *the* in [-d +s] contexts, correctly use it in [+d +s] contexts, and correctly use *a* in [-d +s] ones. A fourth combination of the features, [+d -s], was considered a problem for NNSs, and an overuse of *a/an* was predicted. Thus, an overuse of *the* with indefinites and an overuse of *a* with definites was determined in the study. Ionin et al. (2008) later explained that this occurrence is the result of definite NPs which can be described as having the [+specific] rather than the [-specific] feature being more likely to occur in the English language. As a result, they reached the conclusion that NNSs respond to specificity much more easily than to definiteness. It was also determined that advanced language learners tended to use articles more accurately in situations where fluctuation was expected, proving the impact of L2 proficiency on L2 article suppliance.

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[2] For more information on fluctuation and transfer see also Zdorenko & Paradis (2008).

[3] Note: the abbreviations used are uniform throughout the text, including the tables: [+d+s] - [+definite +specific]; [+d-s] - [+definite -specific]; [-d+s] - [-definite +specific]; and [-d-s] - [-definite -specific].

Veličković (2019a) analyzed whether two groups of L1 Serbian/L2 English speakers would follow the same pattern of overuse in the same measuring instrument used by Ionin et al. (2004). The subgroup of English language majors supplied *the* in the [-d +s] context, at a rate of almost 40%, while no such extensive use of *a/an* was noted in the [+d -s] context (5%). However, *a/an* were unexpectedly used in the [+d +s] context (20%). The subgroup of non-English language majors did use *the* more than expected, but in the [-d -s] context at a rate of 25%, and also used *a/an* in the [+d +s] one, at a rate of less than one-fifth of the responses. The results supported the 'miscellaneous pattern' of article suppliance, and also suggested that further analysis of the impact of the [±specific] feature was needed in the L1 Serbian population.

Based on the aforementioned, the following research question was formulated: does the [±specific] feature have an impact on the L2 article suppliance of the selected population?

METHODS

The Participants

The study was carried out on a sample of L1 Serbian/L2 English speakers, university level students majoring in various subjects at the Faculty of Philosophy, University of Niš. The tertiary level of education was chosen since higher levels of language proficiency are expected, and because it provides a fertile ground for the study of a wide variety of aspects of the EFL learning and teaching process (cf. Bojović 2017; Danilović-Jeremić 2018; Lazarević 2020; Stojković 2021, inter alia). At the onset, the number of participants was N=89 (N=31, English language majors: G1; N=58, non-English language majors: G2). Twelve participants were excluded from the study as they failed to provide all the necessary data. Data analysis was ultimately carried out on N=77 participants (N=31, English language majors: G1; N=46, non-English language majors: G2).

The Measuring Instruments

Over a period of two weeks, the participants were asked to complete two questionnaires. The first was a forced-choice elicitation task (the measuring instrument used by Ionin et al. (2004)). It consisted of 40 items specifically designed to accommodate the [±specific] and [±definite] features: 12 [+specific +definite] contexts; 8 [+specific -definite] contexts; 8 [-specific +definite] contexts; 12 [-specific -definite] contexts.

Each context was presented in the form of a dialogue, with a multiple choice option of *the*, *a/an*, or the zero article *Ө*.

For statistical analyses, the items were divided into four groups to keep track of L2 article suppliance: the [+s +d], [+s -d], [-s +d], and the [-

s -d] group. The individual responses obtained from each participant were classified as: the correct response, as required, and three incorrect responses (incorrect *a*, incorrect *the*, and incorrect *Ɵ*). The percentage of correct and incorrect responses was calculated for both G1 and G2. Two more groups of items were formed for analysis, one containing twenty items with the [+specific] feature, and another with the [-specific] feature. For more details see Tables 2 and 3.

The second questionnaire was used to measure the participants' level of proficiency. It was the forced choice task of the grammar section of the Michigan test of L2-proficiency (as per Ionin et al. (2004)). The test format was multiple choice.

All of the data obtained were coded for analysis in the SPSS program. Descriptive statistics, a repeated measures method, and a correlation were calculated.

THE RESULTS

The results of the Michigan test of L2 proficiency determined G1 to be at the upper intermediate level, and G2 at the lower intermediate. A more detailed overview of these characteristics is given in Table 1.

Table 1. Characteristics of the participants

Variables	English language majors		Non-English language majors	
	Mean (CI 95%)	SD	Mean (CI 95%)	SD
Level of L2 proficiency	25.42* (10.89-15.16)	2.71	12.39 (11.13-14.92)	5.52

Note: *-Statistical significance (p<.05)

The results indicate a statistically significant difference between the two groups in favor of G1.

The results from the article suppliance test are presented in Table 2. It provides an overview of the correct responses (40 items), the type of incorrect response (40 items), and the number of correct responses provided for the [+specific] and [-specific] items (20 each).[4] The results for both G1 and G2 can be found in the table.

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[4] For the two formed groups of [+specific] and [-specific] items, it was possible to produce both *the*, and *a/an* as a response, due to the different possible combinations with the [±definite] feature. The same applies for the data in Table 3. The zero article was not the correct response on any of the items.

Table 2. Percentage of responses by item type and group

Variables	English language majors		Non-English language majors	
	Mean (CI 95%)	SD	Mean (CI 95%)	SD
Correct responses: all 40 items	37.81* (36.5-39.11)	3.55	23.04 (20.88-25.20)	7.27
Incorrect response *the*: all 40 items	1.13* (.21-2.5)	2.5	4.24 (3.38-5.09)	2.87
Incorrect response *a*: all 40 items	.94* (.24-1.63)	1.89	5.74 (4.79-6.69)	3.19
Incorrect response Θ: all 40 items	.16* (-.7-.4)	.63	6.85 (5.42-8.28)	4.82
Correct responses on the [+specific] items: 20 items	18.61* (17.81-19.41)	2.18	11.74 (10.52-12.96)	4.09
Correct responses on the [-specific] items: 20 items	19.16* (18.45-19.88)	1.95	11.3 (10.14-12.47)	3.93

Note: *-Statistical significance ($p < .05$)

A statistically significant difference between G1 and G2 can be noted for the number of correct responses (40 items) (G1-37.81 ± 3.55 vs G2-23.04 ± 7.27), in favor of G1. Further statistically significant differences were observed for the correct responses provided for items with the feature [+specific] and [-specific], respectively. For the former, G1-18.61 ± 2.18 vs G2-11.74 ± 4.09, and for the latter, G1-19.16 ± 1.95 vs G2-11.3 ± 3.93, ($p < .05$). Once again, the difference was in favor of G1. A statistically significant difference between G1 and G2 was determined in the number of incorrect responses when classified into the following groups: "Incorrect response *the*", "Incorrect response *a*", and "Incorrect response Θ" (for Incorrect response *the*, G1-1.13 ± 2.5 vs G2-4.24 ± 2.87, for Incorrect response *a*, G1-.94 ± 1.89 vs G2-5.74 ± 3.19, and for Incorrect response Θ, G1-.16 ± .63 vs G2-6.85 ± 4.82, $p < .05$). The difference was once again in favor of G1.

However, a within-group comparison of the correct responses for the [+specific] and [-specific] items did not indicate a statistically significant difference for either group (G1- $p = .149$ and G2- $p = .383$). Therefore, the [±specific] feature did not have an impact on the L2 article suppliance for either group of participants.

For incorrect responses, G1 reported a slightly greater occurrence of the definite article, while G2 reported the same for the zero article. However, the numerical differences between the possible incorrect responses were not great enough to warrant any conclusions regarding preference for a particular response, for either group.

The types of incorrect responses, broken down based on group and item type, are shown in Table 3.

Table 3. Percentage and type of incorrect responses

Variables	English language majors					Non-English language majors					
	Correct (%)	Incorrect (%)	Incorrect a (%)	Incorrect the (%)	Incorrect zero (%)	Correct (%)	Incorrect (%)	Incorrect a (%)	Incorrect the (%)	Incorrect zero (%)	Missing
[+d, +s]	356 (95.69)	16 (4.31)	15 (4.03)	/	1 (0.26)	313 (56.7)	235 (42.57)	133 (24.09)	/	102 (18.47)	4 (0.72)
[+d, -s]	233 (93.95)	15 (6.04)	11 (4.43)	/	4 (1.61)	234 (63.58)	142 (36.42)	54 (38)	/	88 (61.97)	2 (0.54)
[-d, +s]	221 (89.11)	27 (10.88)	/	27 (100)	0 (0)	233 (63.31)	135 (36.69)	/	70 (51.85)	65 (48.14)	0 (0)
[-d, -s]	367 (98.65)	11 (1.35)	/	11 (100)	0 (0)	396 (71.73)	156 (28.27)	/	96 (61.53)	60 (38.46)	0 (0)
20 [+specific] items	577 (93.06)	43 (6.93)	16 (2.58)	26 (4.19)	1 (0.16)	539 (58.58)	377 (40.97)	140 (15.21)	70 (7.6)	167 (18.15)	4 (0.43)
20 [-specific] items	594 (95.8)	26 (4.19)	17 (2.74)	5 (0.8)	4 (0.64)	529 (57.5)	389 (42.28)	126 (13.69)	125 (13.58)	148 (16.08)	2 (0.21)
All 40 items	1171 (94.43)	69 (5.56)	35 (2.82)	29 (2.33)	5 (0.4)	1060 (57.6)	774 (42.06)	195 (10.59)	264 (14.34)	315 (17.11)	6 (0.32)

Note: the percentage of Incorrect *the*, Incorrect *a*, and Incorrect θ were calculated from the total of incorrect responses.

In terms of the participants' performance on the four groups of items identified based on the combination of the [±specific] and [±definite] features, the distribution of the results is as follows. The percentage of correct responses for G1 was in the high 90s, and the most frequently incorrectly used article was *the*, as the only incorrect response recorded for the [-d, +s] group, and the [-d, -s] group, at a rate of 10.88% and 1.35% respectively. The indefinite article occurred less than 6% of the time in the [+d, -s] group. Therefore, no overuse was recorded.

For G2, the percentage of correct responses ranged in the high 60s, while the type of incorrect responses varied and their percentage was much higher than for G1. In the [+d, +s] group, almost one-quarter of the incorrect responses was *a/an*. In the [+d, -s] group, the most frequently incorrectly used article was *Ө*, at a rate of almost 62%. However, it was once again *the* that was noted as the most frequent incorrect response in the [-d, +s] and [-d, -s] group of items, accounting for 51.85% and 61.53% of all the incorrect responses, respectively. However, the overall percentage of incorrect responses for G2 once again did not indicate overuse.

Regarding the two groups of items marked [+specific] and [-specific], both groups tended to provide correct responses, with G1 once again outperforming G2 on the percentage of correct responses (low 90s vs high 50s). Of the incorrect responses, G2 tended to use *a/an* in the [+specific] group of items, and *Ө* in the [-specific], while G1 infrequently used *the* in the [+specific] group of items, and *a/an* in the [-specific].

DISCUSSION

The aim of this study was to analyze whether specificity affects the L2 article suppliance of a sample of L1 Serbian learners at the tertiary level of education. The proposed impact was most clearly outlined in the work of Ionin et al. (2004) who concluded that a particular combination of the [±specific] and [±definite] features will result in the overuse of *the* in the [-d, +s] and an overuse of *a* in the [+d, -s] combinations. Similar results were also determined by Veličković (2019a). To analyze the issue further, the 40-item measuring instrument designed by Ionin et al. (2004) was used to provide empirical data pertaining primarily to the effects of specificity on the L2 article suppliance of the aforementioned population. Furthermore, the impact of factors such as level of L2 proficiency was also analyzed, in light of the claim that increased proficiency levels do not preclude errors of article omission and substitution (Cowan 2008; Snape 2008; Umeda et al. 2017). A statistically significant difference was noted between the groups for L2 proficiency in favor of G1 ($p < .05$). These results confirm those of Ionin et al. (2004), that an increase in proficiency does affect the accuracy of L2 article use, contrary to the aforementioned claims.

Despite the theory that NNSs are more susceptible to specificity than to definiteness, no overuse of *the* or *a/an* was noted for G1 and G2, either a numeric or a statistically significant one, for any of the 40 items. Moreover, lower L2 proficiency was also assumed to render EFL learners more susceptible to the aforementioned impact of the [±specific] feature. However, neither G1 nor G2, between whom a statistically significant difference was noted in terms of L2 proficiency, indicated any signs of overuse on [+specific] items (Table 3). The results of the current study do not support the claim that the [±specific] feature had any quantifiable impact on L2 article suppliance. This is congruent with Trenkić's (2008) conclusion that there is no 'unequivocal evidence' that specificity affects L2 article suppliance, in part due to issues regarding the operationalization of specificity, a point discussed in the concluding segment of this paper.

If specificity had no quantifiable impact, and neither G1 nor G2 showed signs of overuse despite their significant difference in proficiency levels, then the relationship between the [±specific] and [±definite] features must be reviewed. If the participants were not susceptible to specificity, definiteness must be considered as a factor of some importance. This echoes White et al.'s (2012) claims of a 'definiteness effect', where EFL learners may become more sensitive to the definiteness feature which impacted their performance, to a certain extent. Ionin (2003) also found that more proficient groups of participants grow accustomed to the [±definite] setting and therefore produce L2 articles in a manner different than that of their less advanced counterparts, who, in the aforementioned study, and the current one, provided a greater range of possible responses on the [+specific] and [-specific] groups of items.

Based on these findings, I propose that L1 Serbian learners to an extent 'equate' the [±definite] and the [±specific] feature, i.e. that they do not distinguish clearly between specificity and definiteness. This may come about as a result of some of their overlapping features: discourse prominence, anaphora, and familiarity, to name a few, and the fact that specificity can be defined as the existence of a 'noteworthy' feature of the referent (Ionin et al. 2008) which might deceive (L1 Serbian) learners into concluding that it is in some way pertinent, singled out for discourse prominence, and not merely being 'introduced', even in the [-d, -s] group of items. For example (taken from Ionin et al. (2004)):

> Mary: I heard that it was your son Roger's birthday last week. Did he have a good celebration?

> Roger: Yes! It was great. He got lots of gifts – books, toys. And best of all – he got (a, the, --) puppy!

The 'vagueness' of the noteworthy feature, as pointed out in later work done by Trenkić (2008), can be noted in this example: perhaps the speaker did not have an 'intent to infer', but enough information is con-

tained in this example to render the referent in question identifiable (or sufficiently described) so as to confuse NNSs into using *the*. This information includes the name of the child, Roger, the fact that it was the occasion of his birthday, that the birthday was celebrated, that many gifts were exchanged, and that one in particular is being singled out as 'best of all'.

The fact that the definite article is the most frequently occurring incorrect response for G1 is not a surprising occurrence. NNSs with an articleless L1 more frequently use *the* in contexts where a particular feature of the referent in question stands out (akin to the aforementioned noteworthiness), but also in contexts where it has been noted that the speaker is 'acquainted' with the referent in question (the aforementioned specific indefinite contexts (Ionin et al. 2004; Snape 2008; Hawkins et al. 2006; Tyrzna 2009). The presence of a noteworthy feature could therefore be of vital importance in the instruction process of L1 Serbian/L2 English learners. It accounts for the use of *the* in the [-d, +s] context (Ionin et al. 2004; Veličković 2019a), but also for the occurrence of incorrectly used instances of *the* in the current study. Here, this pattern in L2 article suppliance is easier to determine among the more advanced L2 learners. Furthermore, finding *the* in [+specific] contexts is also particularly frequent with CSg nouns (Ogawa 2015) which were the only type of nouns included in the questionnaire used in this study.

Similarly, Ko et al. (2008) analyzed the L2 article suppliance of a group of L1 Serbo-Croatian speakers. The study proposed that semantic universals have an independent, or even unequal, impact on L2 article use, with some features exerting a more persistent influence, especially on low-proficiency learners. The study showed that SC learners overused *the* in [+specific] contexts, but that, like in the current study, no main effect of specificity was empirically noted.

Even though the aforementioned account mostly focused on the frequent inappropriate uses of the definite article identified among the results noted for G1, the same account could be extended to the uses of the definite article registered for G2, with the addition that the latter group showed a much greater range of incorrect responses. They included all three articles in a variety of item groups: *a/an* in the [+d, +s] group, *Ө* in the [+d, -s] group, *the* in the [-d, +s] and [-d, -s] groups. The frequent inappropriate use of the zero article could be ascribed to an earlier theory proposed by Trenkić (2004), that an excess of identifiable information might lead NNSs to omit articles altogether. Trenkić (2004, 2008) focused on the occurrence of adjectives in the NP and the possibility of determiners in general being misinterpreted as adjectivals (with the literal meaning of 'can' and 'cannot be identified'), which had a proposed impact on article suppliance/omission. Using the example *Pass me the BLUE mug.* (Trenkić 2008: 10, original emphasis), the author states that L2 learners might consider it redundant to use an article if, contextually speaking, the referent

was identifiable based on the physical situation the interlocutors find themselves in, with the provided modification. However, based on my experience as a practitioner at the tertiary level, I still believe that more convincing proof for this theory lies beyond the scope of this study.

Although the overall number of incorrect responses for G2 did not indicate overuse, these findings could to an extent be connected to the Fluctuation Hypothesis (Ionin 2003), or the 'miscellaneous pattern' of article acquisition proposed by Avery and Radišić (2007). Based on the non-Uniformity Assumption and L1 interference in particular, the authors concluded that the idiosyncrasies of various groups of learners could be explained by the fact that each individual learner is at their own stage of developing interlanguage grammar, which indicates the absence of a universal account of patterns of behavior in L2 article production. Thus, there may be no predictable pattern of L2 article suppliance for some groups of EFL learners. It would be interesting to note the L2 article suppliance of some of the less proficient participants individually, to find further support for these conclusions. However, this too lies outside the scope of this paper.

CONCLUSION

The findings of the current study indicated that no overuse of either the definite or indefinite article was noted, and no statistically significant effect of specificity was found on L2 article suppliance for either group. Based on the type of incorrect response, the less proficient group was determined to adhere to the miscellaneous pattern of article acquisition.

There is no doubting the semantic complexity of the English article system. With such a system, exposure without properly designed instruction will not bring about desired L2 proficiency. The current findings support the connection between specificity and definiteness, and yet certain characteristics of the Serbian language, to date insufficiently unexplored, may as yet in the end facilitate the L2 article instruction process. There may be the need for L2 learners to be exposed to more explicit evidence that *the* is not associated with the [+specific] feature, with more details provided about semantic-pragmatic categories such as specificity during the instruction process. To that we add the miscellaneous individualized L2 article production patterns, as well as the previously criticized source material used in the Serbian linguistic environment with underrepresented accounts of definiteness and specificity, and what emerges is the basis for developing a new, improved method of instruction.

As a final note, certain limitations and implications for further study need to be taken into consideration. Trenkić (2008: 3-4) stated that the way specificity is coded could have an impact on L2 article suppliance. The author claimed that a distinction should be made between speaker specificity and discourse specificity, which was missing from the

questionnaire. Furthermore, it was also stated that speakers oftentimes do have more information regarding the referent at their disposal, which merely, at that point in time, is not considered 'noteworthy' enough as it does not contribute to the ensuing discourse. It is possible that L2 learners are not be able to make this distinction, which leads to potential confusion regarding article suppliance, especially pertaining to discourse prominence.

Future studies should include a greater number of English and non-English language majors, to indicate whether alternate patterns that might have a bearing on the results would emerge. Secondly, since non-English language majors come from different backgrounds, a more in-depth look at this subgroup, both as part of this dataset, and in general, may be key for unearthing information that could lead to increased and improved L2 article suppliance. Closer attention should also be paid to the classification of participants based on their L2 proficiency, to determine whether statistically significant differences would be noted, and to which extent particular levels of proficiency affect production. This requires including participants of a greater variety of proficiency levels. Considering the fact that this study was a quantitative one, a further qualitative analysis could offer further in-depth insight into L2 article suppliance.

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УПОТРЕБА ЧЛАНОВА У ЕНГЛЕСКОМ ЈЕЗИКУ КОД СТУДЕНАТА НА ТЕРЦИЈАРНОМ НИВОУ: УТИЦАЈ ПОЗНАВАЊА ЈЕЗИКА И СПЕЦИФИЦИРАНОСТИ

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Резиме

У овом истраживању анализиран је утицај неколико фактора на употребу чланова у енглеском језику на узорку студената Универзитета у Нишу. Ту спадају утицај одлика [±одређен] и [±специфициран] као и општи ниво познавања енглеског језика. Истраживање је базирано на подацима који указују на то да управо чињеница да језици могу имати само једну од ове две одлике, [±одређен] или [±специфициран], може утицати на то до које би се мере могла научити тачна употреба чланова у енглеском језику. Како ове одлике, а пре свега [±специфициран], нису према сазнањима овог аутора у већем обиму истраживане на српском говорном подручју, постојала је потреба за даљим истраживањем.

У истраживању је учествовало укупно 77 студената, подељених у две групе. Једну гурпу чинили су студенти Департмана за англистику, док је друга група обухватила студенте различитих департмана. Испитаници су попунили претходно припремљене и у пракси проверене упитнике. Један упитник коришћен је како би се утврдио ниво познавања употребе чланова, у коме су ајтеми класификовани у четири групе према одликама [±одређен] и [±специфициран], а други је коришћен за утврђивање нивоа познавања енглеског језика студената. Добијени одговори кодирани су за статистичку анализу. Након статистичке анализе дат је одговор на следеће истраживачко питање: да ли специфицираност утиче на тачну употребу чланова. Резултати су указали на статистички значајне разлике у тачној употреби чланова, као и у нивоу познавања енглеског језика, у корист групе студената енглеског језика. Утицај специфицираност на употребу чланова у енглеском језику није утврђен.

IDENTIFYING THE DIMENSIONS OF THE SCHOOL CLIMATE FROM THE PERSPECTIVE OF PRIMARY SCHOOL STUDENTS

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Abstract

The school climate is a significant factor in the development of students' cognitive, emotional and social competencies. Starting from the fact that the quality of educational work largely depends on the school climate, the aim of this research was to identify the factors influencing the development of a positive school climate, and to determine the differences in the perception of its dimensions in relation to gender and student success. The sample for this research consisted of 216 primary school students in the Republic of Serbia. An instrument composed of 43 items was used in the research. Factor analysis identified 6 factors that affect the school climate: support and consistency in the work of teachers, student autonomy, the academic support of teachers, negative peer relationships, disciplinary rigor and collaborative peer learning. The students' perception of the dimensions of the school climate was influenced by school success and the gender of the students. This research offers a comprehensive theoretical perspective for all researchers for whom the field of school climate is at the center of interest, as well as potential solutions in terms of improvement in educational practice.

Key words: academic support, discipline, interpersonal relationships, school climate, students' perception

ИДЕНТИФИКОВАЊЕ ДИМЕНЗИЈА ШКОЛСКЕ КЛИМЕ ИЗ УГЛА УЧЕНИКА ОСНОВНИХ ШКОЛА

Апстракт

Школска клима представља значајан фактор у развијању когнитивних, емоционалних и социјалних компетенција ученика. Полазећи од тога да од школске климе у многоме зависи и квалитет образовно-васпитног рада, циљ рада је био да се идентификују фактори који утичу на развијање позитивне школске климе и утврде разлике у перцепцији њених димензија у односу на пол и успех ученика. Узорак истраживања чинило је 216 ученика основних школа у Републици

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Србији. У раду је коришћен инструмент састављен од 43 ајтема. Факторском анализом утврђено је 6 фактора који утичу на школску климу: подршка и доследност у раду наставника, аутономија ученика, академска подршка наставника, негативни вршњачки односи, дисциплинска строгост и колаборативно вршњачко учење. Резултати показују и да су школски успех и пол ученика утицали на перцепцију ученика о димензијама школске климе. Рад нуди свеобухватну теоријку перспективу за све истраживаче којима је област школске климе у центру интересовања, али и потенцијална решења њеног унапређивања у образовно-васпитној пракси.

Кључне речи: академска подршка, дисциплина, интерперсонални односи,
                           школска клима, перцепције ученика

INTRODUCTION

The school climate is one of the dominant areas of research today. The school climate reflects the character of school life and affects the cognitive, emotional and social development of students. The quality of the social environment and the work of teachers depend on the school climate (Altaf, 2015). Therefore, it is an indispensable element, on the quality of which the success of the entire teaching process largely depends.

In school climate research, most research starts from determining the perceptions of teachers (Gray et al., 2017; Tam, 2020) or students (Chatters & Joo, 2018; La Salle et al., 2016; Waasdorp, 2020). Therefore, many studies have shown that a positive school climate is associated with: a higher level of peer attachment and social skills (Acosta et al., 2019), student achievements (Hultin et al., 2018), teacher satisfaction and self-efficacy (Aldridge & Fraser, 2016), and physical security and lower levels of school violence (Shukla et al., 2019).

Having in mind that the school climate is one of the crucial factors in attaining educational achievements, prosocial behavior, and quality interpersonal relationships, this research sought to determine the factors influencing the development of a positive school climate and the differences in the perception of its dimensions in relation to the students' gender and success in school.

THEORETICAL APPROACH TO THE RESEARCH

The school climate implies the experience of the school environment, where the interactions between, and mutual experiences of the participants play an important role. The experience of the school climate includes mutual respect, trust, support and a sense of belonging in the school community (Osher et al., 2020). The definition of the school climate also refers to the attitudes of its members and includes their norms, culture, moral values, and productivity, and the contribution of individuals in achieving success. Accordingly, the school climate can have a positive or negative effect on its members (Gonder & Hymes, 1994). Freiberg

(1999) says that the school climate is the heart and soul of the school. The quality of the school largely depends on the quality of the climate, which includes developing creativity, fostering children's interests and motivating teachers to work.

One of the basic prerequisites for the successful education of students is a positive school climate. The efficiency of learning depends on the affirmation of relationships, and the integration of social, emotional and academic skills of students. The teacher has the primary influence in achieving the goals of education. The task of the teacher is to teach students how to learn, offering them support in the form of teaching strategies (Darling-Hammond & Cook-Harvey, 2018). The quality of the school climate depends on the quality of life, work, and the interaction of students at school (Đorđić & Damjanović, 2016: 310). Research has shown that the level of students' school achievements also depends on the academic and social support of teachers. With increasing teacher support, both self-efficacy and the cognitive engagement of students increase (Jansen et al., 2019). On the one hand, students' perception of the support provided by teachers correlates with motivation and the use of learning strategies (Yıldırım, 2012). Therefore, the supportive approach of the teacher has a positive effect on the student's motivation and increases his self-efficacy, i.e. the subjective experience of the student's competencies in the realization of various goals and tasks. On the other hand, the openness, commitment and high expectations of teachers contribute to the development of a favorable learning climate (Hoy & Hannum, 1997).

Although it has been shown that motivation to learn depends on the educational support of teachers, research findings confirm that motivation to learn is higher if students feel that their teachers provide them with personal support, which contributes to better educational outcomes (Kim et al., 2018). On the other hand, meaningful work that connects to students' prior knowledge and experiences, and actively engages them in motivating tasks supports their competence, self-efficacy, and self-directed learning (Darling-Hammond & Cook-Harvey, 2018).

From the perspective of the teaching process, the optimal learning environment implies the application of innovative methods and forms of work in teaching. With the support and innovative approaches of teachers, students show a higher level of scientific creativity and interest in involvement in activities of a scientific nature (Akkanat & Gökdere, 2018). The results of research indicate that the participation of teachers in designing creative and innovative activities is important. However, its role in nurturing students' positive attitudes toward school is equally important (Hui et al., 2018). The results of a two-year longitudinal study confirm that students' attitudes about learning and school are positively related to academic performance.

The application of innovative methods and forms of work, along with the other previously mentioned characteristics important for attaining higher educational achievements, communicate the necessity to form an authoritative school climate. As the most desirable model, the authoritative school climate is characterized by the supportive approach of teachers and the multiple types of support provided to students. Such a climate model contributes to greater student participation and higher academic achievement (Konold et al., 2018). However, teachers' work motivation is one of the key elements in the students' attainment of educational achievements. Teachers' attitudes and expectations are related to student achievement outcomes (McGiboney, 2016). Also, the level of their support in the school community depends on the knowledge of the school climate and the factors that contribute to the well-being of teachers (Gray et al., 2017). Accordingly, the professional development of teachers is one of the key preconditions for achieving a favorable school climate, which, in turn, increases the educational achievements of students.

Interpersonal relationships in school are key indicators of the school climate. The creation of a positive pedagogical atmosphere in the classroom depends on the understanding, and mutual trust and communication between teachers and students. Teacher acceptance provides a sense of security and contributes to the constructive, productive and creative progress of students. Taking into account the above, it can be said that the teacher's personality and their way of work are extremely important in the formation of positive interpersonal relations in the classroom. Teachers are expected to show emotional stability and warmth towards students, to be tolerant and kind during communication, and to encourage students (Milošević, 2015). Through their actions, teachers influence the formation of the emotional climate in the classroom, and, with their pedagogical approach, they contribute to the development of the moral and prosocial personality of students (Jevtić & Vasić, 2014). Research has shown that the personality traits teachers consider important for working with students are honesty, empathy, closeness and consistency. Student knowledge, and the effective use of non-verbal messages and skills needed to deal with negative behavior are mentioned as the most important communication strategies (Ozsezer & Saban, 2016). On the other hand, research conducted in the Republic of Serbia has found that students single out tolerance, human kindness and willingness to help students as the most important characteristics of teachers (Milošević, 2015).

A positive attitude towards the school, and support from the school, parents and peers, are significant protective factors (Florić, Pavlović & Ninković, 2021, p. 1132). As a regulator of social relations in the classroom, the teacher has the task of continuously monitoring and supporting the positive interactions between students, and reducing the negative ones. Students who form positive relationships stand out for their

positive social behavior, mutual support and integration, and for making smart decisions (Moolman et al., 2020). On the other hand, if a student does not feel safe in his/her school and if he/she is isolated from other children, they may begin exhibiting destructive behavior towards himself/herself and others (McGiboney, 2016). The appearance of negative forms of behavior towards individuals may suggest that positive interactions do not develop among students, which indicates a negative and unfavorable school climate.

Since the occurrence of negative forms of behavior among students is more frequent in educational practice, a negative school climate is prevalent. Research findings confirm that a negative school climate influences the occurrence of violent student behavior (Chatters & Joo, 2018). Students' exposure to violence in the local community is associated with peer victimization (Starkey et al., 2019), and peer victimization is associated with social trust. Students who were exposed to victimization showed a lower level of social trust than those who were not (Lundberg & Abdelzadeh, 2019), which again indicates the existence of a negative climate. However, the results also show that the students' participation in reporting negative behaviors has a positive effect on reducing the negative climate in schools (Bosworth et al., 2018).

Thus, the engagement of students in recognizing and reacting in the event of violence is one of the important aspects of reducing the negative school climate. However, the teacher has a bigger role in this process. Teachers, who should monitor the mutual relations of students, promote positive relations and react in a timely manner in the reduction of negative peer interactions, are the main actors who influence the formation of a positive climate. If teachers promote prosocial behavior, clearly express negative attitudes about violence, and develop awareness of the presence of violence and report violent behavior, there will be no intolerance and violence among students (Wang et al., 2013). Research shows that the development of friendships, which creates a pleasant classroom atmosphere, is observable in classes whose teachers express tolerance and understanding for their pupils, and encourage their cooperation and solidarity, which is not the case with classes whose teachers encourage competition and the pursuit of prestige in their pupils (Jevtić & Jovanović, 2017, p. 600). Hence, it is necessary for the teacher to apply a democratic style of classroom management (Jevtić & Vasić, 2014) and possess interpersonal competencies (ability to criticize and self-criticize, teamwork, interpersonal skills, ability to communicate, respect for diversity, etc.) (Milošević, 2015) in order to feel safe in their role as a regulator of social relations, and in order to form a positive environment for the growth and development of each student.

RESEARCH METHODOLOGY

Research Aim and Research Questions

Starting from the fact that the students' assessment of the school climate largely reflects its quality, the aim of this research was to examine students' perceptions of the school climate and determine its dominant dimensions. This research started with the following research questions: 1) what factors have an impact on the school climate from a student's perspective; and 2) can gender and school success influence students' perceptions of the school climate.

Research Tasks

The role of the school is extremely important in terms of developing and improving the capacity of students. Providing personal and academic support, encouraging positive interpersonal communication, and a pedagogical and innovative approach by teachers are crucial to students' overall progress. The aforementioned dimensions of the school climate represent the most important predictors of the quality of educational work in the school community.

In order to investigate the school climate, the following research tasks have been defined:
1) determine the most dominant dimensions of the school climate from a student's perspective;
2) examine the differences in the perception of the dimensions of the school climate in relation to the gender of students;
3) discover if there are differences in students' perceptions of the dimensions of the school climate in relation to school success.

General Research Hypothesis

This research started from the assumption that students will positively perceive the academic and social dimensions of the school climate and that students' perceptions of the identified dimensions of the school climate will differ according to their gender and success in school.

Research Sample

The research sample consists of 216 primary school students from the Republic of Serbia. Primary education in Serbia includes 8 grades, and the research sample consists of students from grades five through eight, ages 11 through 15. Random sampling was applied, and the research was conducted in the area of southeastern Serbia. In relation to gender, 95 (44%) male students and 121 (56%) female students participated in the research. Out of the total sample, the school success of 5 (2.3%) students was graded as insufficient, the success of 14 (6.5%) stu-

dents was graded as sufficient, the success of 33 (15.3%) students was graded as good, the success of 62 (28.7%) students was graded as very good and the success of a maximum of 102 (47.2%) respondents was graded as excellent. Since the participants are minors, the parents were informed about the purpose of this research and gave their consent for the participation of their children. Students who participated in the research were guaranteed anonymity.

Instrument and Procedure

An instrument containing 43 items was developed for the purposes of this research. Students' perceptions of the school climate were examined through an assessment scale, taking into account the different dimensions of the school climate. The assessment scale is of the Likert type, and students had the opportunity to circle the following values: 1 - I do not agree at all, 2 - I do not agree, 3 - I do not agree or disagree, 4 - I agree, and 5 - I completely agree . The reliability of the instrument was calculated, and its Cronbach's Alpha coefficient is .910. The normality of the distribution was examined by the Kolmogorov-Smirnov and Shapiro-Vilk tests, with a resulting significance level of .001.

Data Analysis

For the purposes of this research, the following were used: factor analysis as a form of multivariate data processing, via the categorical principal component analysis method; instrument reliability (Crombach Alpha); analysis of variants (ANOVA) for determining differences between variables; and the Kaiser-Meyer-Olkin test and Bartlett's test. The normality of the distribution was verified by the Kolmogorov-Smirnov and Shapiro-Vilk tests. Statistical analysis was performed in the SPSS software package.25.

THE RESULTS OF THE RESEARCH

The assessment scale is composed of 43 questions and is intended to examine primary school students' perceptions of the school climate. In order to reduce the data to latent factors, a statistical technique – factor analysis was applied. Data validity was checked by the Kaiser-Meyer-Olkin test and shown in Table 1.

Table 1. KMO and Bartlett's test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.904
Bartlett's Test of Sphericity	Approx. Chi-Square	5901.197
	df	780
	Sig.	.000

Table 1 presents the .904 value of the Kaiser-Meyer-Olkin (KMO) test, with the value of Bartlett's test showing a statistical significance of less than .05. Based on the obtained results, it can be concluded that the implementation of factor analysis was justified.

The latent structure of the scale was determined by applying the Gutmann-Kaiser criterion for factor extraction, whereby varimax rotation of the factor was performed in order to maximize the sum of the variances of the square of the factor loads (Table 2).

Table 2. Matrix structure of extracted factors

	Initial value			Factor load extraction sum			The rotational sum of the factor load		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.897	32.242	32.242	12.897	32.242	32.242	7.402	18.505	18.505
2	3.496	8.740	40.981	3.496	8.740	40.981	4.240	10.601	29.106
3	2.717	6.792	47.773	2.717	6.792	47.773	4.053	10.132	39.238
4	2.297	5.742	53.515	2.297	5.742	53.515	3.096	7.740	46.978
5	1.332	3.330	56.845	1.332	3.330	56.845	2.792	6.981	53.959
6	1.114	2.784	59.629	1.114	2.784	59.629	1.885	4.713	58.672
7	1.080	2.700	62.329	1.080	2.700	62.329	1.463	3.657	62.329

Table 2 shows that seven factors with a high cumulative percentage of variance (62.32%) were isolated. Six factors were taken into account for further analysis, because the rotation of items determined that the last component contains only one item, which does not make it a significant factor for further analysis.

The first factor explains 18.50% of the total variance. Claims concerning the role of teachers in providing assistance in student work, as well as its consistency in classroom management, are grouped within this factor. In accordance with the content of the items, the factor is called *support and consistency in the work of teachers*. Subjects covered by this factor relate to the teachers' efforts to provide personal support in overcoming student barriers, teacher responsiveness to student demands, student involvement in work, and clarity and consistency in classroom conduct and management.

The second factor explains 10.60% of the total variance and brings together items related to providing students with the opportunity to express their own opinions, to participate in the selection of methods and forms of work, and to contribute to ideas and important decisions in the school community. In accordance with the content of the item, the name chosen for this factor is *the autonomy of students*.

The third factor which stood out explains 10.13% of the total variance. The grouped claims include the teacher's orientation towards crawling support in attaining high student achievement. Accordingly, the factor is named *academic support of teachers*.

The fourth factor explains 7.74% of the total variance, and the items within this factor refer to peer relationships. Claims that include negative interpersonal relationships of students expressed through negative behaviors in mutual interactions are grouped within this factor. Accordingly, the fourth factor is called *negative peer relationships*.

The fifth factor explains 6.98% of the total variance. The items that are part of this factor called *disciplinary rigor* are focused on the orientation of teachers towards maintaining order and discipline in the classroom. The items include the teacher's approach in setting rules aimed at controlling student behavior by applying various classroom discipline strategies (involving students in classroom discipline decision-making, rewards for good behavior, punishments for bad behavior, etc).

The sixth and last factor taken into consideration explains 4.71% of the total variance. The factor is named *collaborative peer learning*, because it includes items related to encouraging collaborative learning among students, to organizing activities that encourage cooperation and teamwork among students, and to the application of innovative teaching methods and forms of work that develop collaborative relationships.

To determine the difference in the male and female students' responses regarding their perception of the school climate based on grouped factors, a t-test for independent samples was applied. The results are shown in Table 3.

Table 3. Differences in the perception of the dimensions of the school climate in relation to the gender of students

Factor	Gender	N	M	SD	t	df	p
Negative peer relationships	male	95	2.19	.74	2.788	167.382	.006
	female	121	2.54	1.01			

Of the six defined factors, statistically significant differences in relation to gender were found in the fifth factor, which indicates negative peer relationships. Table 3 shows that male students assessed peer relationships more positively than female students. More precisely, as opposed to male students, females assessed negative peer interactions as more prevalent, and it can be assumed that such perceptions are conditioned by experience and greater sensitivity to negative peer behaviors.

Table 4. Students' perceptions of the dimensions of the school climate
in relation to school success

	School success	N	M	SD	F	df	p
Support and consistency in the work of teachers	insufficient	5	3.08	1.12	7.219	4	.000
	sufficient	14	3.32	1.47			
	good	33	3.46	.95			
	very good	62	4.64	.97			
	excellent	102	4.59	1.12			
Student autonomy	insufficient	5	1.88	.43	5.808	4	.000
	sufficient	14	3.68	1.37			
	good	33	3.55	1.17			
	very good	62	4.15	1.18			
	excellent	102	4.14	1.23			
Academic support of teachers	insufficient	5	1.86	1.33	5.417	4	.000
	sufficient	14	3.05	1.17			
	good	33	3.46	.97			
	very good	62	3.43	.81			
	excellent	102	3.62	1.02			

The results in Table 4 show that the value of p is less than .01, which indicates that there are statistically significant differences in students' responses about the school climate in relation to their school success. Differences were found in relation to three dimensions: support and consistency in the work of teachers (F = 7.219, df = 4, p<.01), student autonomy (F = 5.808, df = 4, p<.01) and academic support of teachers (F = 5.417, df = 4, p <.01). Based on the comparison of the values of arithmetic means, it can be seen that students with lower school success rated all three dimensions of the school climate more negatively than students with better school performance.

DISCUSSION

Using factor analysis, six key factors of the school climate were identified: support and consistency in the work of teachers, student autonomy, academic support of teachers, negative peer relationships, disciplinary rigor and collaborative peer learning. The selected factors indicate that, in order to determine students' perceptions of the school climate, it is important to take into account different segments, i.e. dimensions of measuring the school climate. The identified factors indicate the importance of understanding the personal characteristics, and the organizational and professional skills of teachers necessary to create a positive school climate. Some of these factors have been discussed in other studies. Specifically, the study examining school climate impact factors in the natural sciences identified 4 factors: teacher enthusiasm, teachers' efforts

in promoting overall student development, the social aspects of teaching, and the existence of and adherence to rules (Grecmanová et al., 2020). The four-factor model was determined in another study, which examined the dimensions of the school climate in a special school. The following indicators were identified: teacher support, positive student connections, negative student interactions and unstructured environment (Beld et al., 2018). On a sample of high school students, factor analysis identified seven factors: student-teacher relations, principal participation in school life, student-student relations, school satisfaction, motivation for achievement, student-teacher relationships, and safety perception (Co-coradă et al., 2018). Six dimensions of the school climate were also dis-covered on a sample of students from the United States and Mexico, where factors contained items related to: teacher connectivity, student connectivity, student achievements, school-wide connectivity, equality culture, and parental involvement (Shukla et al., 2019). Common to these studies is the fact that most of the identified factors of the school climate were related to interpersonal relationships and the provision of personal and academic support to students. The differences in these studies are ob-servable in the fact that, in some studies, emphasis is placed on the role of principals and parents as important factors in developing a positive school climate. The obtained results indicate that, in creating the instrument, it is important to start from all actors who contribute to the development of the school climate and, accordingly, to look at and compare the percep-tions of students, teachers, principals and parents.

Another significant result of this study is the fact that the students' gender and success in school significantly influence the perception of the dimensions of the school climate, which is confirmed by other research (La Salle et al., 2016). Differences in relation to gender occurred in the perception of negative peer relationships. More specifically, female stu-dents recognized a higher level of negative peer interactions than male students. The results suggest that an assumption can be made about the different experiences of boys and girls which arise from relationships with their peer groups. Hence, there are differences in the attitudes, be-havior and skills of students of different genders. Given that some studies have shown that girls show greater empathy than boys (Allemand et al., 2014; Geng et al., 2012), the reason may be in the girls' greater sensitivi-ty to negative interactions, but also in their awareness and successful recognition of negative interactions among peers. However, further re-search is needed in order to be able to claim this with certainty.

When it comes to school success, the identified differences indi-cate more negative assessments by students with lower school success in relation to the following dimensions: support and consistency in the work of teachers, student autonomy and academic support of teachers. The re-sults suggest that students with lower school performance do not perceive

these dimensions as positive. Hence, it can be assumed that students with lower school success are much more exposed to negative experiences in the class. We should keep in mind the results of previous research, which show that the reasons for students' failure in school are the discriminatory behavior of their peers and teachers (Dreyer & Singh, 2016), insufficient support, and conflict with the teacher (Amani et al., 2020). Taking into account the aforementioned facts, it can be concluded that a more negative assessment of the school climate by students with lower school success results from insufficient support from teachers and peers. Students who do not show enviable results are often exposed to negative peer interactions and, due to their failure, they are often neglected by teachers. Those left to themselves do not have enough support to progress, because teachers are more oriented towards providing support to students who achieve better results. However, the obtained results confirm that, in the formation of a positive school climate, it is necessary to create a stimulating atmosphere for the learning and development of all, without differentiating between individuals.

In order to get a complete picture of the school climate, it is important to examine the perceptions of teachers and compare them with students' perceptions. The teachers' self-assessment in achieving a positive school climate is a good indicator of the success and quality of the teachers' work and student satisfaction. All these factors should be borne in mind when planning future research in this area.

CONCLUSION AND PEDAGOGICAL IMPLICATIONS

The main findings of this research indicate that students showed positive perceptions of the academic and social dimensions of the school climate, and that their perceptions of certain dimensions of the school climate differed according to their gender (negative peer relationships) and school success (support and consistency in the work of teachers, student autonomy, academic support of teachers). These findings reveal that different dimensions of the school climate are interdependent. The success of students depends on the personal and academic support of the teacher, but the teacher's enthusiasm and desire to work can also depend on the feedback from their students. In accordance with that, it is important to improve every segment of the school climate, because only in that case will every student feel safe, supported, motivated, respected and equal.

Although the primary schools in the Republic of Serbia strive to develop a positive school climate, content-structural changes would still greatly contribute to the better quality of interpersonal relationships, the development of students' prosocial behavior, and the improvement of students' educational outcomes.

The potential strategies for improving the school climate can be:

- Developing more action plans and programs that would contribute to the improvement of the schools' psychosocial atmosphere, would reduce negative forms of behavior in schools, and would imply the joint action of students, teachers, pedagogues, and parents;
- Organizing various additional extracurricular activities which would encourage activism, volunteerism, and togetherness among students in the school community;
- Organizing seminars and other educational meetings and workshops which would develop the teachers' competence for the application of strategies aimed at developing students' social and emotional competencies;
- Providing better quality training aimed at acquiring leadership skills and independence in writing projects, so as to contribute to solving problems in the school community;
- Promoting a psychology of success in school (cause-and-effect and clarity, student collective identity and sense of belonging, student responsibility, choice and voice, emotional safety, etc).

Implementing these strategies would result in the students' desired school, in which there are no limits to versatile and free development, which keeps pace with innovative changes, and which is in line with the concept of the schools of the future and is based on the idea of a humanistic education.

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ИДЕНТИФИКОВАЊЕ ДИМЕНЗИЈА ШКОЛСКЕ КЛИМЕ ИЗ УГЛА УЧЕНИКА ОСНОВНИХ ШКОЛА

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Резиме

Школска клима је неизоставни елемент образовно-васпитног рада од чијег квалитета умногоме зависи успешност целокупног наставног процеса. Уколико се школска клима размотри као потенцијални елемент за развијање потенцијала ученика, увиђа се њен несумњив утицај на когнитивни, морални, емоционални, и социјални развој ученика. Узимајући у обзир различите класификације димензија школске климе, у теоријском делу рада се разматрају три које се односе на улогу наставника у пружању образовне подршке, одржавање реда и дисциплине, и развијање квалитетних интерперсоналних односа. Полазећи од чињенице да од школске климе у великој мери зависи и квалитет образовно-васпитног рада, циљ рада је био да се идентификују фактори који утичу на развијање позитивне школске климе и да се утврде разлике у перцепцији њених димензија у односу на пол и успех ученика. Истраживање је пошло од претпоставке да ће ученици позитивно перципирати академску и социјалну димензију школске климе и да ће се у односу на идентификоване димензије школске климе перцепције ученика разликовати у односу на њихов пол и школски успех. Узорак истраживања чинило је 216 ученика основних школа на простору југоисточне Србије. Примењена је скала процене Ликертовог типа, састављена од 43 ајтема, која се показала високо поузданом (α=.910). Применом факторске анализе идентификовано је 6 кључних фактора школске климе: подршка и доследност у раду наставника, аутономија ученика, академска подршка наставника, негативни вршњачки односи, дисциплинска строгост и колаборативно вршњачко учење. Други значајан резултат до којег се дошло јесте да су пол и школски успех ученика значајно утицали на перцепцију димензија школске климе. Тачније, показало се да су припадници мушког пола позитивније проценили вршњачке односе од припадница женског пола. Са друге стране, ученици лошијег школског успеха су негативније проценили димензије подршке и доследности у раду наставника, аутономије ученика и образовне подршке наставника од ученика са бољим школским успехом. У раду се указује и на одређене педагошке импликације и нуде се потенцијална решења за унапређивање школске климе у Републици Србији.

COVID-19 AS THE MAGNIFYING GLASS OF CHINA'S FOREIGN POLICY FOR A NEW ERA

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Abstract

The COVID-19 pandemic functioned as a catalyst for the already tense relations between the People's Republic of China and its major Western partners. It also made room for the global span of China's 'wolf-war diplomacy' and 'mask-diplomacy' as two simultaneously exposed faces of its foreign policy. This analysis focuses on China's foreign policy apparatus' performance during COVID-19, and its effect on China's domestic and foreign economic and political agendas. Starting from the theoretical point that China's forceful foreign policy derives from its domestic political dynamism, the analysis shows that such effects were modest. It claims that China's posting will continue to be resistant to the surroundings' impact as long as it serves as a good tool for fulfilling domestic stability and security goals.

Key words: China, foreign policy, COVID-19, wolf-diplomacy, mask-diplomacy

КИНЕСКА „СПОЉНА ПОЛИТИКА ЗА НОВО ДОБА" У УСЛОВИМА ПАНДЕМИЈЕ КОВИДА-19

Апстракт

Пандемија Ковид-19 деловала је као катализатор за већ напете односе између Народне Републике Кине и њених најважнијих партнера са Запада. Истовремено, она је у глобалним размерама отворила простор за кинеску „дипломатију вукова-ратника" и „дипломатију (заштитних) маски", као два истовремено испољена лица њене спољне политике. Ова анализа је фокусирана на функционисање кинеског спољно-политичког апарата за време Ковида-19, и на то како је његов учинак повратно утицао на домаће, али и спољно-економске и политичке планове. Полазећи од теоријског и аналитичког оквира да робусна спољна политика Кине извире из домаћег политичког динамизма, ова анализа показује да су повратни ефекти спољних дешавања на домаће послове били умерени. Кинеско спољно-политичко постављање наставиће да буде отпорно на реакције из окру-

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жења докле год успешно служи остваривању унутрашњих политичких циљева стабилности и безбедности.

Кључне речи: Кина, спољна политика, Ковид-19, дипломатија вукова-ратника, дипломатија маски

INTRODUCTION

The ongoing pandemic has shaken the world in many aspects, including countries' foreign and security policies and international relations, especially when it comes to solidarity and sharing resources, expertise and vaccines. The pandemic was also a catalyst for the worsening ties between the PRC and its major Western partners. China's 'wolf-war diplomacy' and 'mask-diplomacy' were the two faces of its foreign policy that were simultaneously exposed during the pandemic. In this paper, we consider whether the main trends in the People's Republic of China's (PRC) foreign policy remain unaffected by COVID-19. This article argues that China's self-confident foreign policy during the pandemic derives from its domestic political dynamism and the Chinese Communist Party (CCP) leadership's orientation towards stability and security, and that significant changes have not occurred. While accepting ideological, historical and cultural roots beyond China's foreign policy (Blanchard & Lin, 2013), this analysis relied on the recent contributions to the current scholarly debate on the transformation of China's foreign policy, and its roots and motivations.

As opposed to the aftermath of the outbreak of SARS, which likewise occurred in China but did not have the same global reach, China's position following the outbreak of COVID-19 was weakened by the fact that the epidemic began on its territory and spread globally. These facts elicited antagonistic reactions and accusations from many Western capitals, which blamed China for not sharing information with the world and not acting promptly at the early signs of the epidemic in Wuhan during 2019 (Rui, 2020). To deal with the unexpected threat to domestic and global stability that COVID-19 had created, China practised a two-pronged diplomatic approach and foreign policy. On the one hand, it kept calling for globalisation, solidarity, peace and development, mutually beneficial cooperation, and connectivity, which was pleasing to the ears of the audiences. To some extent, China acted according to these appeals. On the other hand, China continued to uncompromisingly perform its assertive foreign policy where its crucial interests were concerned, while pursuing its rising influence with narrowed space for concessions or common ground.

The increasing mistrust between the PRC on the one side, and the Western block on the other, provoked some Western countries to re-examine their economic dependency on China, which was likewise exposed at the beginning of the pandemic. Some continued or started to

back-pedal from globalisation with China at its core, while the majority chose to persistently seek the positive effects of the cooperation. Despite this, China's firm foreign policy mode, created by top policymakers over the past decade and echoed by China's diplomatic personnel, will remain unchanged, especially in regards to its 'core interests', which continue to expand, both in content and in geographic scope (Ekman, 2012), and which, consequently, limit the opportunities for compromises. This increasingly forceful behaviour is also based on the self-confidence China acquired when it efficiently managed to control the epidemic and became the only growth-achieving major economy in 2020. Additionally, it is derived from the realisation of the first of the Two Centenaries goals – the elimination of absolute poverty by 2021 – and from the successful completion of the 13th Five Year Plan. Although these achievements might be challenged from several perspectives, their proclamation, the general acceptance of the official victorious narrative, and the accomplishments made by the CCP serve as sufficient indicators of the success of the CCP's rule at home, publicised around the world by its diplomats and media. An additional contribution to China's success was made by the 'last minute' signing of the principal Comprehensive Agreement on Investment (CAI) with the EU, which represents a political and symbolic victory for China, and which occurred just ahead of the USA's new administration's inauguration (MERCATOR, 2021; Mitrović, 2022, pp. 232-233).

However, despite this success of China's diplomacy, the ongoing trade and technology war between the USA and China, and China's increasingly discordant relationship with the EU, the pandemic has had catalysing effects in both directions: it worsened relations with major global partners and made more room for China to forcefully execute its major power role by using 'mask and vaccine diplomacy'. Beijing saw the EU and USA's initial improper and messy response to the pandemic as an accelerator for its designed global aspirations.

DOMESTIC GOALS AND CHINESE FOREIGN POLICY

In this analysis, we argue that China will continue to energetically pursue its primary strategic goals via its foreign policy by vigorously trying to maximise benefits and to buffer the external downbeats, while straggling to obtain the stability and sustainability of its economic model and its results. Its economic goals will have a high priority since, if met, they grant legitimacy to the rule of the CCP. As the Chinese population has so far expressed a preference for economic rise and material benefits, fulfilled economic goals grant the CCP and the PRC domestic security. China's foreign policy goals will focus on realising the external elements of the China Dream goals, including the Belt and Road Initiative. Realising these economic goals will provide China with international security

and boost its supremacy by creating a robust structural power that would make its influence ever-more pronounced. They will also allow China to offer financial assistance to numerous states and spread its cultural, economic and political influence (Mitrović, 2017).

Other factors contributing to the forcefulness in China's posture on the international stage are closely connected to rising nationalism and national cohesion. Young Chinese people, who do not remember the hardships of their parents and grandparents, and who have only witnessed China's rising path, rightfully feel great pride in China's achievements and its existing strength. At the same time, they mostly tend to lack modesty and an understanding of the importance that good relations with each of China's international partners, including the dominant powers, have played in that rise. The nationalism of new generations, supported and fuelled by the media, pushes China to exercise its power vigorously and renders soft approaches to dispute resolution difficult to accept.

On the other hand, China's economic strategy, aimed at securing the longevity of its model, strongly relies on high technology, and China's attempt to become a global leader in it, bypassing the leading tech-powers such as the USA, Japan and others, is seen by these powers as a challenge; high technology's importance in overcoming the middle-income trap and becoming an advanced economy is pretty apparent (Cronin & Neyhard, 2020). Accordingly, an essential part of China's foreign policy rests on making room for further cooperation with technologically superior partner countries, especially the USA, the simultaneous spread of Chinese technology and ICT standards, and the employment of its state-owned enterprises. However, COVID-19 has made such attempts even more difficult.

COVID-19 AND 'MASK DIPLOMACY'

In many Western capitals, China was seen as trying to seize the opportunity to put itself in a leading position in the global struggle against COVID-19 by demonstrating how the Chinese political system proved to be more efficient than Western democracies in fighting the pandemic. Accusations that China was using the "crisis as an opportunity" (Thomas, 2020) to 'export' elements of its political system and its influence were made. Some scholars view it as a continuation of the 'China solution' platform offered to the world by President Xi Jinping (Thomas, 2020). Eder claims (2018) that Xi sees China at the centre of the new type of international relations, in which the changing global scene, along with the relative decline of USA's power, opened a strategic space for China to increase its global influence. Naturally, from their point of view, it was all seen as very negative and distractive.

Many analysts claim that the overall inefficient reaction to the pandemic by Western democracies assured Beijing that it would surpass USA, and especially the EU, as a global power (Gauttam, Singh & Kaur 2020). The initial spark which supported the emergence of such a conviction, and the corresponding acts by China, occurred during the 2008 global economic crisis. It was based on the belief that China is rising while the West is weakening (Shen 2020; Yu 2020), and that COVID-19 created an opportunity for the fulfilment of China's ambition via 'mask diplomacy' and later 'vaccine diplomacy'.

China's efforts to recover from the initial wave of the pandemic, and its efforts to centralise and expand its globally dominant production of protective medical equipment, medicines, ventilators and other necessary goods enabled it to be in a position to sell and donate those goods. The PRC's help to other countries badly affected by the pandemic has been tremendous in scope: it has sent humanitarian aid (medical equipment, protective masks and medical teams) through its diplomatic missions bilaterally, and via foundations such as the Mammoth Foundation, to more than one hundred and twenty countries around the globe – from ASEAN, and Japan, to Latin American states, EU countries and African states. Jack Ma's Alibaba Foundation sent such donations to more than one hundred and fifty countries (Hatton, 2020). Aside from providing assistance, China was able to sell vast quantities of much needed test kits, ventilators, masks, disinfectants, medicines and other essential goods. Moreover, it was later able to sell and donate vaccines.

China's 'mask diplomacy', with gratitude ceremonies in recipient countries, was meant to change the negative narrative about China in some of these countries, while presenting China as a Good Samaritan and an efficient major country at the core of global governance. The process was extensively covered in Chinese media as 'responsible great power' behaviour. Xinhua reported that "China has actively joined hands with the rest of the world to stem the novel coronavirus disease, with the exports of medical supplies" (Xinhua, 2020), promoting this mercantile activity as philanthropic. China's central role as a global supplier of personal protective equipment, medical devices, antibiotics, and active pharmaceutical ingredients proved to be crucially important for this role. As global demand increased, the Chinese government urged producers to expand or even change production, and to work non-stop to produce the required medical equipment and pharmaceuticals for export. During March and April 2020 alone, China exported medical goods worth US$ 10 billion (Bermingham, 2020). While countries worldwide fought to provide needed goods and to share medical knowledge and protocols, Taiwan and states cooperating with Taipei were either barred from participation by the PRC, even from participating in WHO work, or were threatened with the discontinuation of the supply of the needed goods (Global Times,

2020). The acts and narrative of China as a leading global Good Samaritan have also built national coherency and self-confidence at home, and were echoed daily by its diplomats.

In stark contrast to these developments, numerous quarrels between China and many Western governments started, including the Chinese diplomats' undiplomatic online episodes with citizens in various countries which showed another face of Chinese foreign policy.

'WOLF-WARRIOR DIPLOMACY' AS ANOTHER FACE OF CHINESE FOREIGN POLICY

Simultaneously with 'mask diplomacy', rising blame and anti-China sentiment stemming from accusations that China was the cause of the crisis were becoming very loud in Western countries, specifically Australia, Canada, the USA, the UK and within the EU (De Weck, 2020). Furthermore, the negative image of China was not apparent only to the officials of those countries but also to their general public. The Pew Research Centre's survey of 14 industrialised countries, published in October 2020, found that 73% of these countries' populations regarded Beijing unfavourably, which was a two-fold increase during 2019 (Magnier, 2020). China was accused of 'spreading the poison and selling the cure', and it responded with 'wolf-warrior diplomacy', only further antagonising the public in these countries.

The increase in the number of antagonistic ambassadors and mid-level diplomats has proven that China's foreign policy has changed the dominant code of conduct of the 'reform and opening up' diplomatic approach. As the top-down approach is strictly enforced under President Xi, and foreign policy was reformed to turn the Ministry of Foreign Affairs into a "logistic service" (Eder, 2018), many concluded that these 'wolf diplomats' were merely heeding the decisions from the top, including Xi's call to show a 'fighting spirit', when taking a more aggressive approach in promoting the country's official stance and defending it from the biased assaults of the Western countries. A typical example was China's Ministry of Foreign Affairs' spokesman Zhao Lijian, who stood out with his Twitter posts (though that platform was blocked in China), including the one posted on 12 March 2020 with which he introduced a theory that the USA military had smuggled the coronavirus into China and released it in Wuhan (Reuters, 2020). This act backfired disastrously, deepening distrust and further complicating the already strained Beijing-Washington relationship, as Washington did not find Beijing's accusations aimed at the USA acceptable. Additionally, several of China's ambassadors across the globe publicly claimed that, though the virus appeared in China, it was possible to find its origins somewhere else (Kuo, 2020), which was also described as an unacceptable assault in Western

capitals. It was astounding to see the efforts of the Chinese Ministry of Foreign Affairs and its diplomats, and the lengths they went to in their campaign of denial and anti-propaganda which mainly focused on shifting blame. They gave over four hundred interviews and published more than three hundred articles on COVID-19 during the first few months of the pandemic alone (Verma 2020). Although only recently engaged on Western social media platforms, the number of Twitter and Facebook accounts of Chinese diplomats more than tripled and doubled, respectively, following the end of 2019 (Ji, 2021).

As a consequence of these efforts, during the last week of April 2020 alone, seven ambassadors of the PRC were summoned by hosting Ministries of Foreign Affairs to answer for "spreading insulting rumours" (France and Kazakhstan) and the "racist treatment" of Africans in China (Ghana, Kenya, Uganda, Nigeria and the African Union) (Huang & He 2020). According to various sources (AFP, 2020), Chinese ambassador Lu Shaye was summoned by the French Foreign Minister to explain an unsigned post on the Embassy's webpage that accused French workers of running away from their jobs and "allowing residents to die of hunger and illness" in nursing homes. Also, the Chinese Embassy exchanged viral messages with French citizens on social media regarding the same post (Shi, 2020). In Germany, Chinese diplomats publicly attacked German public figures who were critical of China's handling of the epidemic (Erlanger, 2020). In Australia and Canada, Chinese Embassies accused the locals of spreading propaganda, and threatened to punish them economically after they joined calls for an independent investigation of the virus's origins and reparations from China. Soon after, China forbade the import of Australian beef and barley, and later introduced an unofficial ban on Australian cotton, lobsters, timber and coal, as well as high import tariffs on Australian wine, in 2020 (ABC News, 2020).

Some senior Chinese foreign policy advisers have marked these actions as ill-mannered and counterproductive seeing as, in the long run, this trend could hurt China due to the fact that aggressive Chinese tones have deepened mistrust and fuelled existing doubts about China's rise and intentions (Shi, 2020). However, since Xi Jinping took the key offices in 2012 and 2013, China's foreign policy has experienced significant changes (Hu 2019) that enhanced its performance and confidence. Takahara (2018) pointed out that Xi managed to "successfully strengthen his power and authority and virtually put an end to collective leadership" (p.1). By doing so, Xi managed to create room for manoeuvre, so that China's future external policy can be both 'soft' and 'hard' depending on what was needed – he created what we described as the two faces of China's foreign policy.

Moreover, China's diplomacy budget in 2018 doubled in comparison with the budget from 2011, in order to prepare for a much broader

mission (Clover, Fei & Sh 2018; Mitrović 2022a). We argue that China's new assertive diplomacy, accompanied with a possible penalty for the opponents – from import bans and tariffs, and stopping or lagging projects, to military conflict – as one face of its diplomacy, is a tool for creating a specific perception of China in the targeted countries and globally. This perception rests on the notions that China could be harmful and that it is not possible for any country to try to obstruct China in the pursuit of its interests. Simultaneously, the other face - one that calls for 'peace and development', multilateralism and other generally looked-for themes - will carry on. By the end of 2020, China's foreign vice-minister Le Yucheng defended the manner of Chinese diplomats. He criticised the use of the term 'wolf-warrior diplomacy' as part of the 'China threat theory' and deemed it yet another 'discourse trap' designed to stop China from fighting back when being scolded by those "who have not awakened from their dreams 100 years ago" (Zhou, 2020), announcing the continuation of the two-pronged diplomatic approach.

AGGRESSIVE FOREIGN POLICY IN THE SOUTH AND THE EAST CHINA SEA

Throughout the early months of the pandemic, China had been building up its military and space capacities while occasionally escalating tensions in the South China Sea and the East China Sea, proving its enormous capacity and major power strategic course. China's extended naval presence in these waters came as USA Navy ships in the area were hit by coronavirus outbreaks, and contagion was confirmed among the crews of four USA aircraft carriers. It put some of China's neighbours on alert and added further worries to the ongoing disaster (Mitrović 2022a). On 2 April, a Chinese vessel hit a Vietnamese fishing boat, causing it to sink near the Paracel Islands, with the fishermen being saved by a third party (Reuters 2020). On 3 and 8 April, the Chinese Coast Guard deployed two ships to monitor the China - Philippines contested islands. On 14 April 2020, a Chinese vessel, accompanied by a China Coast Guard ship, was reportedly spotted within Vietnam's exclusive economic zone, while the Chinese Foreign Ministry said on the same day that the ship was "conducting normal activities in waters administered by China". A Chinese vessel reportedly entered Malaysian waters on 16 April, following an exploration vessel of Malaysia's oil company Petronas (Abe, 2020; RFA 2020).

Chinese media reported[1] on the State Council's decision to set up two administrative units on the Paracel and Spratly Islands in the South

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[1] On 18 April 2020;

China Sea: Sansha City was established on 24 July 2012, "to administer the Xisha, Zhongsha and Nansha islands and their surrounding waters in the South China Sea" (Ministry of National Defence of the PRC, 2020). This decision provoked high tensions again as it implicated lasting outcomes and aimed to formalise China's control and make it permanent. Vietnam submitted a formal protest against the decision the following day, and two protests from the Philippines followed. Manila also protested against a Chinese vessel's "pointing of a radar gun at a Philippine Navy ship in Philippine waters". Chinese naval vessels reportedly passed between Taiwan and the Philippines on 23 April (Burke & Ichihashi, 2020). On 2 May, Vietnam complained against 'China's unilateral fishing ban' in the disputed area of the South China Sea, imposed unilaterally by China between 1 May and 16 August (Reuters, 2020). The US resumed the so-called 'back-to-back freedom-of-navigation operations in the South China Sea' on 28 April, sending warships within 12 nautical miles of the artificial islands built by China, which caused China to protest against "intruding into Chinese territory" (Doornbos 2020), While the world was fighting against COVID-19, the geopolitical landscape in the South China Sea experienced some offensive plays. While fighting the pandemic at home and performing its 'mask diplomacy globally', China was, at the same time, harshly executing its military might in the neighbourhood.

China and ASEAN member states are searching for a new feasible code of conduct for the issues in the South China Sea. However, the problems of the South China Sea belong to China's folder of 'core issues' and sovereignty[2] (Ekman, 2012), which, as previously stated, leaves no room for compromise. Nevertheless, it should be mentioned once more that China has been using a two-pronged diplomatic approach while, during the same period, initiating ASEAN plus One activities to combat the economic consequences of the pandemic, and an intensive 'vaccine diplomacy' that these countries could not refuse based on their dependence on China's crucial involvement in their economic and medical affairs.

SOUTH-SOUTH COOPERATION WITH AFRICA SHAKEN BUT NOT DISTRACTED DURING COVID-19

Africa has traditionally been essential to the PRC's foreign policy's goals via offering platforms for South-South cooperation and having China assist the development of the developing countries, but BRI's projects in Africa gave this relation a new dimension. Africa became particularly significant for realising China's economic goals, such as providing crucial resources, deploying its financial placements and its corporations'

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[2] China announced this in 2010, according to USA's diplomatic and other sources.

engagements, among others, while exercising its major country role and empowering China's position in global governance. Although COVID-19 exposed some problems in China-Africa ties, China's significant economic influence in many African economies proved to be a decisive source of its confidence when confronting competitors. However, the economic area has created several controversial issues for their ties, making relations more complex and troublesome. In recent years, there have been growing complaints regarding how China's initiatives, loans, the debt-crises of the recipient countries, and projects carried out by Chinese corporations affected local actors, and how the Chinese side treated their concerns. On the other hand, these problems did not diminish the great importance of China's engagement in Africa for local citizens, the elite and local economic dynamism. At the same time, they provoked new versions of the 'China threat' theory, which was transformed into a 'debt-trap diplomacy' narrative, particularly developed and spread by Western security and media mechanisms (Lo, 2021).

According to the China Africa Research Initiative (CARI) at Johns Hopkins University, China is the biggest lender in Africa, with about US$148 billion in (mostly) BRI projects such as railroads, ports and airports, which are part of the cooperation that provides China with oil and copper, cobalt and other natural resources. CARI found that the debt owed to government creditors in seventy-three developing countries reached US$178 billion in 2020, of which China is owed more than 63%.

Nevertheless, the Chinese loans are, like elsewhere, firmly connected to infrastructure projects built by Chinese corporations and financed by credits from Chinese state-owned banks and various other forms of loaning. As mentioned, there exists a narrative, and criticism based on it, that China has been lending too much to the least developed countries without scrutinising their ability to repay their debt. Still, on several occasions, the Chinese Foreign Ministry rejected criticism based on debt-trap assumptions. On the other hand, official Chinese lenders have "expanded their portfolios dramatically and are not fully participating in the debt rescheduling processes that were developed to soften previous waves of debt," World Bank President David Malpass said in early October 2020 (Takeshi & Iori, 2020). As Ghanaian Finance Minister Ken Ofori-Atta pointed out in the Financial Times, Western countries are allegedly "reluctant to offer concessions for fear that released resources will simply be transferred to Beijing", which explains the ongoing reality of African debt obligations towards China and the attitude of Western creditors (Wigglesworth, 2020).

More unexpectedly, during the ongoing global problems caused by COVID-19, China's foreign relations experienced a blow due to the least predictable argument. In early April 2020, more than one hundred African residents of Guangzhou were confirmed to be infected with

COVID-19, which initiated a discriminatory treatment of African residents there, which, in turn, led to the formal diplomatic protests of four African countries and the African Union against the PRC (Huang & He, 2020). It was the first time the African 'bloc' confronted China on such a broad basis, with a high-profile reaction and on grave grounds amid its 'mask diplomacy' efforts in Africa. China publicly announced investigations and corrective measures, and denied racism, but failed to offer an apology. Although a highly sensitive incident, it did not have any powerful impact on the ongoing cooperation and the great expectations arising from it[3].

Despite all the challenges to China-Africa ties, China's ambitions and growing presence in Africa was never in question, and neither was its importance to African countries. Hence, to use the momentum after closing the CAI ahead of the Biden administration's inauguration in late 2020, in January 2021, Wang Yi headed to Africa to visit six countries: Nigeria, Botswana, Tanzania, the Seychelles, the Democratic Republic of the Congo, and Kenya. Since 1991, Chinese foreign ministers have traditionally first visited Africa, and this visit was crucial due to the rather strong anti-China sentiment built upon the aforementioned discriminatory acts towards Africans in China during the pandemic. No less important was polishing China's hard stand towards easing the debt within the G20 initiative exposed by IMF and the leading figures of the World Bank, and assuring African partners that the BRI was as vital and in as good a shape as ever. During the visit, Botswana and the Democratic Republic of the Congo (DRC) joined the BRI. China cancelled the debt owed to it by the DRC and offered a new funding scheme for infrastructure construction. Above all, the visit was crucial for China to secure the DRC's cobalt, essential for electric vehicles[4], as part of its strategic competition with the USA in Africa (Africa News, 2021).

DE-GLOBALIZATION, DE-COUPLING AND GLOBAL GOVERNANCE

Even though China is the top trading partner of over one hundred and thirty countries, the pandemic has caused further concerns about the form of globalisation with China in its centre, especially after China introduced and insisted on its zero-Covid policy in 2021 and 2022, which cut off the global supply chain from its major financial, administrative and high-tech hubs such as Shanghai and Beijing (Ren, Quand, Cao). Mounting security costs, connected with the disruptions of supply chains, wiped off some of the advantages of the Chinese market, which were ad-

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[3] At the same time, far away from Africa and China, Chinese people, and Asians in general, were facing numerous racist attacks in the US and, to a lesser extent, Western and Central Europe.

[4] According to the IMF, the DRC produces about 60% of the global cobalt output.

ditionally decreased by the rising costs and the discriminatory practices towards foreign businesses that have made the 'playing field very uneven' for state-owned domestic corporations and foreign corporations. The subsidies designated by Japan's government in the early months of the pandemic were focused on helping corporations cover up to two-thirds of their expenses when returning products to Japan. Shortages of protective material at the beginning of the pandemic only revitalised the continuing debate (which has lasted since 2012) over pulling manufacturing out of China. Though small in value and uncertain in their practicability, these subsidies were seen in Beijing as one step that could initiate a shift in the same direction among many foreign investors. In reality, similar moves were made by tech companies from Taiwan, the USA and India, all of which opted to move part of their production out of China. Apart from presenting a vast market, the Indian government also offered subsidies for major global corporations to shift production from China, and start using India as a production base and as their export centre (Marandi, 2020). After a military clash with India in Ladakh in June 2020, fifty-nine Chinese companies were shut out of India, including WeChat and TikTok, 30% of whose global users reside in India (Kuo, 2020).

In an attempt to lessen this trend and the consequences of the trade and technology war with the USA, Chinese leadership began to warm up relations with Japan. In spite of this, amid the COVID-19 crisis and the ongoing state of emergency due to the epidemic in Japan, in April 2020, the Chinese aircraft carrier Liaoning, together with a five-ship group, sailed between the Okinawa and Miyako Islands twice, according to Japanese military authorities. Additionally, according to Japan's Coast Guard reports, Chinese Coast Guard vessels went into the contiguous zone of the Senkaku Islands in the greatest numbers ever, three hundred times greater than in 2012 (Huang 2020). At the same time, in another reflection of China's two-sided foreign policy approach, Wang Yi visited the Republic of Korea and Japan in November 2020 (WHJ, 2020) to convey a message from Xi Jinping to the new Japanese Prime Minister, and in an apparent attempt to revitalise some of China's most important relationships amidst the tough negotiations with the EU over the CAI, and mounting problems with Trumps' outgoing administration.

China-USA relations are loaded with uncertainty and mistrust, as significant differences between the two range from ideological and strategic issues to China's domestic and international business practices which, according to the USA and EU, create uneven conditions for foreign companies, and opportunities for technology theft and for breach of human rights. The aforementioned claims, the sanctions based on them, the increase of security threats in the East and South China Seas, especially re-

garding Taiwan, the Hong Kong democracy crackdown and Uyghurs rights in Xinjiang[5] are just a few of the major points of contention between China and the US. The process of the bilateral ties' rundown fast-tracked after the Obama administration introduced Asia Pivot, and after the Trump administration pointed towards China as a strategic rival and a 'revisionist power' in related documents[6]. China is seen in official documents, and by the broader USA public, as pursuing to "shape a world antithetical to US values and interests". The Trump administration's de-coupling efforts broke thousands of strings of advanced cooperation between the two countries, while its tech-war blacklisted more than three hundred of China's corporations crucial for its global engagement and technological expansion (Reuters, 2020). These measures were to stay for a long time, based on the generally dominant anti-China sentiment, and the more values-based and interventionist foreign policy of the Biden administration.

Wang and Sun (2021) claim that de-globalisation changes in the global economic system, as well as those in USA's and China's respective economies, started after the 2008 crisis, and that a change in the nature of their relations "from symbiotic to increasingly competitive" was one of the factors that caused globalisation to decline, while the pandemic only "gave it momentum". They also say that "regionalisation and localisation" filled the gap as part of the ongoing trend. By focusing the analyses on our topic, we argue that the trade/tech war (which started before the pandemic) and the USA's pressure pushed China towards changing its previous economic strategy, which it began to develop after 2008. Whether China's "Made in China 2025" and "China Standards 2035" strategic policies triggered strategic USA suspicion or were simply adjustments to an altered and deteriorated environment is difficult to surmise, but they strongly affected the two parties and the global economy. However, under Xi's vision of the Chinese economy, 'reform' becomes secondary, and a 'dual circulation' strategy becomes crucial. Essentially, it resembles the "Made in China 2025" technology program's goal of providing a technology platform to substitute essential high-tech imports, and even creating a lead in some crucial hi-tech sectors. Making the economy less exposed to external shocks and securing its uninterrupted

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[5] For more in-depth analyses, please consult: (Trailović, 2019);

[6] An extended period of American over-dependence on China for medicine and medical supplies has led the U.S.-China Economic and Security Review Commission to label it a "security risk" in 2019. It became even more striking in February 2020, when many Chinese producers halted export due to the COVID-19 pandemic, leaving Americans helpless. Six months later, the US Food and Drug Administration (FDA) still declaimed the shortage of 118 drugs. At that point, interdependence on the economic front proved to be a security problem and prompted the USA administration to adopt an even stricter stance against it.

development, while still using all the possible advantages of China's outward economic engagements, are at the core of this strategy, as highlighted throughout the 14th Five Year Plan. This also requires a more prominent role of the state, a further reduction of room for market-oriented reforms, and more sustainable growth in an attempt to regain control over the economy. Making the economy less exposed to external shocks and securing its uninterrupted development is at the core of the 'dual circulation' strategy[7]. After forty-four years of pursuing a 'reform and opening-up policy', China is turning towards self-sufficiency, a position it was in more than sixty years ago. Still, this time it is driven there by the administrative measures of the leader of the liberal global economic order, fuelled by ideology and power struggles. Could this be more of a paradox of history?

This shift, again, exposes China's numerous calls for globalisation, its profession of being a leader in pursuit of it, and its criticism of 'forces that obstruct globalisation', which points towards the USA and its unilateralism. However, at home and abroad, Chinese leadership under Xi is determined to put control above market efficiency which comes with unavoidable fluctuations, as control of the CCP over the economy makes it possible to mobilise the whole society towards achieving the economic and political goals determined by the CCP. Additionally, China's economic strategy strongly relies on high technology and China's attempt to become a global leader by bypassing the leading tech powers; high technology's significance in overcoming the middle-income trap and becoming an advanced economy is pretty obvious, and it also provides a dual-use, which could turn China into a military super-power as well. (Cronin & Neyhard, 2020)

China has engaged in trade negotiations with the USA, hoping to 'handle' the situation and reduce tensions by remaining open to meeting some of the USA's demands, especially in regards to increasing the import of agriculture products (down by 50% of the promised quantity due to logistic and other pandemic-caused obstacles). China usually chose to make vague promises and forward the bill for any particular loss (concession) to a third party, which the EU had complained about. Despite China's compromise in meeting some of the USA's demands, China's 'mask diplomacy' was seen in Washington as the fulfilment of the discourse on China gradually setting itself up for a global leadership role, whereas the 'wolf warrior diplomacy' was harshly dismissed. Growing confidence on China's part, and its domestic and external actions which directly oppose the USA's concerns and interests (and the concerns and interests of the EU, Japan, and the USA's other partners) push towards a further destabi-

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[7] The phrase was announced during the Politburo Standing Committee meeting held on May 14 2020, and again in Xi's speech on the August 24 meeting of the same body.

lisation of the existing mode of global governance, instability, and a narrowed path for peaceful cooperation of the two.

Despite the dubious results of the trade war, the previous USA administration dealt with China with determination, and thus the US is one of the few countries that have not just verbally challenged China. As it is dependent on the import of sophisticated ICT components from the USA, China has had to accept the continued struggle for a new trade deal, and has tried to bypass American sanctions imposed on its corporations. Even in this case, China will continue to defend its interests. When dealing with almost all other partners, it will continue its forceful diplomacy, which includes punishment for it opponents – from import tariffs, and lagging projects, to military clashes, if needed. It will keep digging the rows between EU member states, diluting the negotiating power of the Union, and between the ASEAN countries, supported by its 'wolf-warrior' diplomatic style when required. At the same time, it will remain ready and open for viable cooperation where and when feasible, as proved by the global hold of its 'mask and vaccine diplomacy'.

CHINESE FOREIGN POLICY TOWARDS THE EU – REALITY CHECK BY COVID-19

In 2020, the cooperation between China and the EU, which grew into a strategic partnership, marked its forty-fifth year. For most of that period, it was traditionally constructive and based on long-time expectations and interests. China saw the EU as an essential player in a multipolar world, even if strongly influenced by the USA. The EU's unified market was, and is, crucial to China and vice versa, as confirmed by EUR1.8 billion in trade value per day in 2019 (DEUC, 2020). Although the two have had differences, especially concerning human rights, their cooperation has developed immensely on various platforms. It has also included a more or less fruitful collaboration on numerous globally significant issues, such as sustainable development, climate change mitigation, food and energy security, the peaceful resolution of global conflicts, nuclear non-proliferation, and, especially in the early years of their relations, the defence of multilateralism with the OUN at its centre.

Nevertheless, throughout the decades of growing cooperation, the EU failed to acknowledge the change in China's power, created by its global economic grasp and the influence built on it. That failure was partly caused by the incoherent interests of the member states, and primarily Germany, the UK, France and Italy's press on an ever-deeper engagement with China. Nevertheless, China's global ambitions, presented on European soil through the "Sixteen/Seventeen plus One" framework and the BRI, along with its purchases of several critical infrastructure assets and

technologically advanced corporations of the EU, distressed the EU political circles and the general public (Mitrovic, 2016, 2022).

For its part, however, China counted on the EU's weak points, as evident with the CAI, which only fortified the confidence expressed by China's foreign policy figures. After the EU-PRC (virtual) summit on 22 June 2020, European Commission President Ursula von der Leyen and European Council President Charles Michel criticised China. They threatened China with "very negative" consequences if China pressed on with the security law in Hong Kong and the actions against Uyghurs in Xinjiang. Still, no sanctions or other measures were, or have been introduced. In fact, among the twenty-seven member states, only Sweden proposed sanctions over the deteriorating developments in Hong Kong. When it comes to the EU's criticism of China, which lacks appropriate consequences, there have been plenty of other examples regarding China's actions in the South China Sea, Hong Kong, Xinjiang, etc. Most remarkably, Brussels' weakness and China's influence within the EU were revealed when some member states close to China blocked resolutions condemning China's behaviour regarding particular matters of concern in the European Parliament and the UN's relevant bodies (Guardian, 2017).

Although the European Commission adopted the "EU-China: Strategic Outlook", branding China as "an economic competitor in the pursuit of technological leadership, and a systemic rival promoting alternative models of governance" (Small, 2020), this might start a shift in the manner China is regarded, but not in the outcome of the engagement. In June 2020, after the EU-China summit, President Michel said that the EU "would robustly defend EU interests and stand firm on our values" (EC, 2020), which cast doubt on the feasibility of CAI being concluded within the timeframe. However, the deal was closed on 30 December due to a strong push from Germany and France, which opposed the interests of the less investment-oriented EU member states, voices from human rights groups and the European Parliament, the EU-USA partnership, and the EU's reputation (MERCATOR, 2021). The EU has gained a bit, but lost the momentum of favourable dynamics, and its hard-won upper-hand position is so rarely found when dealing with China (Kuo, 2021). However, the Agreement's ratification has since been stalled. China relied on the EU's weak points, exposed in relation to the CAI, which only fortified the self-assurance expressed by China's top foreign policy figures and their chosen diplomatic mode, emphasised during the pandemic. Nevertheless, it seemed as though this might not be enough to move relations forward.

By late June 2022, the stalemate of ratifying CAI had not changed in either direction, and neither had Beijing's position. PRC would consider cutting its sanctions on respected EU politicians, lawmakers, researchers and think tanks only after the EU removed its sanctions imposed on China in March 2021, based on Xinjiang human rights breach accusa-

tions[8]. In a bold move not seen since 1989 and the Tiananmen incident, Brussels coordinated its hostile and arrogant motion with the USA, Canada and the UK. China made two conciliatory moves through the National People's Congress, approving the two International Labor Organization conventions on forced labour, and allowing the UN human rights envoy Michelle Bachelet to visit Xinjiang in May 2022, but there were no corresponding moves from the EU. Furthermore, in January 2022, the European Commission had opened a case against the PRC at the WTO, claiming that China enforced economic bullying on Lithuania. China's all-around pressure on Lithuania for 'dismantling' 'the 17+1' framework in a particularly insulting manner proved challenging to verify, and Beijing denied that any such decision was made. The EC might refrain from going further than the consultation phase. Still, damage to the ties and the CAI stalemate remained a burden on the bilateral relations.

The mounting tensions during the heights of the COVID-19 pandemic deepened mutual distrust and revealed both sides' views on each other, and their respective positions. These distortions will not, however, distract either party from further engagement in mutually beneficial cooperation in areas such as the global economic recovery from the pandemic, especially the recovery of trade, connectivity in transport, tourism, prevention of future hazards in health and climate changes, energy security, and environmental and other issues that need global governance.

CONCLUSION

This analysis focused on China's foreign policy, its apparatus' performance during COVID-19, and the manner in which the pandemic has affected China's domestic and foreign economic and political agendas, and its confidence. Starting from the theoretical approach which asserts that China's self-confident foreign policy derives from its domestic political dynamism, the analysis shows that such effects have remained constant. At the same time, it argues that China's posting will continue to be forceful towards the mostly inconsistent and insufficient pressure from abroad, providing that it serves as a good tool. China's many achievements at home and overseas during the pandemic crises, which occurred despite severe obstacles, will only solidify its leaders' firm positions and act as proof of efficiency in fulfilling domestic stability and security goals.

The PRC's global economic reach has its own string of problems, making China's foreign relations more complex. In recent years, there have been even more Western narratives and complaints regarding the manner in

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[8] Wasim Cornet, "Western nations sanction China over rights abuses, prompting tit-for-tat response", *France24,* March 23, 2021. https://www.france24.com/en/asia-pacific/20210322-china-eu-impose-tit-for-tat-sanctions-over-human-rights-abuses

which China's initiatives, loans, the debt-crises of the recipient countries, and Chinese corporations' projects have affected local actors, and how the Chinese side treated their concerns. Although it attaches great importance to 'South-South cooperation', China is being increasingly criticised for using similar platforms for self-promotion and for achieving its unilateral goals at the Global South's expense. Nevertheless, its influence on rising economies and the Global South will persist and grow, with an undoubtedly positive impact on the economic dynamism in these economies.

China will continue energetically pursuing its primary strategic goals via its foreign policy. Fulfilled economic goals provide the CCP and the PRC with domestic security, seeing as the Chinese population has, so far, expressed a preference for economic rise and material benefits above other issues, including privacy protection. China's foreign policy goals will focus on realising the external elements of the China Dream goals, including the Belt and Road Initiative. Realising these economic goals will provide China with international security and boost its influence by creating an extreme structural power that makes its effect ever more pronounced. They will also give China the ability to offer financial assistance to numerous states and spread its economic and political impact. A technologically advanced and resilient economy that dominates the global economy in multiple areas is critical to ensuring CPC's survival at home, and to providing it with a solid foundation upon which to build China's military and political role globally.

China will achieve all of these with a regained self-confidence built on its status as the only growth-achieving major economy in 2020, and on its realisation of the first of the Two Centenaries goals – the elimination of absolute poverty by 2021. Additionally, the strategic win provided by the 'last-minute' signing of the CAI with the EU, the previous successful agreement on the RCEP, and the addition of two valuable new African participants to the BRI, achieved in early 2021, all helped in securing China's confident position. At the same time, at home, China was presented and seen as victorious, which provided a basis for further national cohesion building.

Confident in their upper-hand position, China's leaders will continue to present to the world a poetic vision of "the initiative of jointly building a community with a shared future for mankind and an open, inclusive, clean and beautiful world that enjoys lasting peace, universal security and common prosperity…" (Le, 2019). The two-pronged foreign policy, which proved highly successful even during the pandemic, will continue, cemented by China's newly acquired high self-confidence, which will incite future discussions on China's foreign policy during COVID-19, its mode and roots in domestic political dynamism, and its further course.

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КИНЕСКА „СПОЉНА ПОЛИТИКА ЗА НОВО ДОБА" У УСЛОВИМА ПАНДЕМИЈЕ КОВИД-19

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Резиме

Пандемија Ковид-19 деловала је као катализатор за већ напете односе између Народне Републике Кине и њених најважнијих партнера са Запада. Истовремено, она је отворила простор за кинеску „дипломатију вукова-ратника" и „дипломатију (заштитних) маски", као два истовремено испољена лица њене спољне политике. Ова анализа је фокусирана на функционисање кинеског спољно-политичког апарата за време пандемије Ковид-19, и на то како је њен учинак повратно утицао на кинеске домаће, али и спољно-економске и политичке планове. Полазећи од претпоставке да робусна спољна политика Кине извире из домаћег политичког динамизма, ова анализа показује да су повратни ефекти спољних дешавања на домаће били умерени. Кинеско спољно-политичко постављање наставиће да буде отпорно на реакције из окружења докле год успешно служи остваривању унутрашњих политичких циљева стабилности и безбедности.

У многим Западним престоницама Кина је оптужена да је покушала да уграби прилику и током пандемије се стави на чело глобалне борбе против Ковида-19 користећи „дипломатију маски и вакцина", тј. делећи и продајући медицинску опрему и вакцине. Оптужбе се посебно односе на то да је НР Кина настојала да

покаже како је њен политички систем ефикаснији у борби са пандемијом, и потенцијално било којим изазовом, од „опадајућих" западних демократија. На ове критике, Кина је одговорила оштро преко својих „дипломата вукова-ратника", кроз кампању на друштвеним мрежама, преко државне медијске групе и кроз иступе званичника, што је продубило неразумевање између ње и Запада. Са друге стране, достигнућа Кине на домаћем, али и спољашњем плану, остварена током пандемијске кризе и упркос озбиљним препрекама, учврстила су већ веома јаке позиције њених лидера, будући да су потврда њихове способности да ефективним управљањем остваре циљеве домаће стабилности и безбедности.

Међутим, глобални економски ангажман НР Кине бременит је низом посебних проблема који усложњавају и компликују спољну политику Кине. Последњих година су учестале притужбе у вези кинеских економских иницијатива везане за питања кинеских кредита и повећања задужености земаља које су их узимале, утицаја пројеката које реализују кинеске корпорације на локалне заједнице, и начина на који се Кина односила према овим примедбама и страховима. Иако Кина даје велику важност сарадњи „Југ-Југ", у порасту су критике које је оптужују да користи ове и сличне платформе сарадње за самопромоцију и постизање унилатералних циљева на рачун земаља Југа. Упркос томе, утицај Кине на растуће економије и Глобални Југ ће расти и остати трајан, што је показао и период пандемије, током кога су настављени пројекти у оквиру „Иницијативе појас и пут", уз прикључивање још неких афричких земаља.

Очекујемо да Кина настави да енергично остварује своје стратешке циљеве, почев од економских, користећи своју спољну политику. Остварени економски циљеви обезбеђују Комунистичкој партији Кине и НР Кини унутрашњу безбедност, будући да је кинеско становништво показало да више вреднује економски успон и добар животни стандард, као и растући утицај и моћ своје државе, од других циљева, укључујући и заштиту приватности.

Кина је и током пандемије наставила да спроводи своје стратешке планове и циљеве са ојачаним самопоуздањем, заснованим на статусу једине велике економије која је остварила раст у 2020. години, и постизању првог од два „циља стогодишњих јубилеја", односно на искорењивању апсолутног сиромаштва до 2021. године. Циљеви спољно-политичког наступања Кине усмерени су на остварење Кинеског сна, односно његових елемената који зависе од окружења, укључујући „Иницијативу појас и пут", што се потврдило и током пандемије. Остварујући ове економске циљеве Кина у великој мери обезбеђује своју спољну безбедност и јача свој утицај кроз растућу структурну моћ. Кроз финансијску помоћ бројним државама, која се наставила и током пандемије, Кина шири свој економски и политички утицај. Уверена у своју моћ и глобални утицај, Кина је наставила да примењује двоструки приступ у својој спољној политици и у доба пандемије. Повратно, овакав учинак допринео је томе да доносиоци одлука у партијском врху КП Кине учврсте своју власт, као и своје уверење да је такав курс спољне политике користан и ефикасан, те да потпомаже остварењу стратешких циљева Партије.

THE CHALLENGES OF THE PROFESSIONAL ADVANCEMENT OF WOMEN IN THE SERBIAN ARMED FORCES

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Abstract

This paper examines the roots of the disproportionately low representation of women in command and management positions as compared to their outstanding involvement in all the activities of the Serbian Armed Forces. The key source for this empirical research is the data compiled by surveying military personnel of both sexes on the functioning of the gender-mixed military and organizational units of the Serbian Armed Forces. Within this authentic pool of information about the respondents' opinions, attitudes, and sentiments, the paper aims to identify whether, and to what extent, the advancement of women in military service lags due to gender stereotypes, which structures contribute to this problem the most, and whether there are other reasons for such a low representation of women in high-ranking positions. The methods applied are statistical analysis and *Chi-squared* statistics (χ^2), which determine the deviations in the answers of groups of respondents, and the assessment of the statistical significance of this deviation (*p-value*). The results indicated two groups of causes: sporadic informal slowing of progress by senior officers, and the psychological and physical maladaptation of a significant number of women to field tasks.

Key words: gender equality, Serbian Army, women in the army, promotion requirements, discrimination

ИЗАЗОВИ ПРОФЕСИОНАЛНОГ НАПРЕДОВАЊА ЖЕНА У ВОЈСЦИ СРБИЈЕ

Апстракт

У раду се истражују узроци непропорционално ниске заступљености жена на командним дужностима у односу на њихово успешно укључивање у све сфере активности Војске Србије. Кључни извор за ово емпиријско истраживање су подаци прикупљени анкетирањем војних лица оба пола о функционисању родно

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мешовитих састава Војске Србије. Циљ рада је да се унутар ових аутентичних информација о мишљењима, ставовима и осећањима испитаника открије да ли и у којој мери је напредовање жена у војној служби успорено због родних стереотипа, које структуре највише доприносе овом проблему, и да ли постоји неки други узрок њихове мале заступљености на високим положајима. Коришћени методи су статистичка анализа и Хи статистика (χ^2), којима се утврђују одступања у одговорима група испитаника, као и оцена статистичког значаја ових одступања (п-вредност). Резултати су указали на две групе узрока: спорадично неформално успоравање напредовања од стране високих официра, и психолошка и физичка неприлагођеност значајног броја жена теренским задацима.

Кључне речи: родна равноправност, Војска Србије, жене у војсци, услови напредовања, дискриминација

INTRODUCTION

Gender equality in all spheres of society is one of the key aspects not only of democracy but also of civilizational advancement, defying any form of discrimination, positive or negative, including gender-based discrimination. Gender equality is one of the basic democratic values necessary in the EU accession process (Bašaragin and Savić, 2021, p. 207). Moreover, the non-acceptance of the concept of gender neutrality diminishes the likeliness of choosing the potentially most successful candidates for specific occupations (Kilibarda, Šaranović, and Rokvić, 2015; Bjekić and Jelača, 2019). The concept of gender-neutrality is a dominant attitude and a significant characteristic of the post-modern military (Rothschild and Davies, 1994; Harries-Jenkins, 2006; Carreiras, 2006, etc.).

Based on UN documents and recommendations (UN Resolution 1325 Women, Peace and Security, UN Security Council, 2000), the Serbian military and legal systems provide all the formal conditions for the equal advancement of women in the army. The entire defence system of Serbia, from training to promotion procedures, is adapted to the natural physical potentials of both sexes. Marketing tools for making the military vocation more appealing to women, and for bringing the female soldier model closer to society as a whole have been developed. The results have been noticeable.

The representation of women in the Serbian Armed Forces and the Ministry of Defence (MoD) was around 19% until the year 2015, when faster growth ensued so that, in 2019, the representation of women reached 22% (MoD, 2011; MoD, 2015; MoD, 2019). Comparative data shows that Serbia does not fall behind the average figures of most NATO members, who have set the highest standards for gender equality. The share of women engaged in the Serbian Armed Forces is almost equal (11.7%) to the average of NATO countries, which is 12% (NATO, 2019, p. 23). Among NATO countries, Hungary is at the top, with 20% of their army personnel consisting of women, while women in the Bulgarian,

American, Canadian, and French troops make up about 16% of the army personnel (NATO, 2019; Manning, 2019). The lowest representation of women among NATO armies is in Turkey, with 0.3 % of their army personnel consisting of women, and Italy and Montenegro, where women make up about 6% of the army personnel (NATO, 2019).

On the other hand, data on women's rankings in the Serbian Armed Forces shows a different picture. An essential part of the concept of gender equality – advancement in officer ranks and leadership positions, falls behind other achievements. The representation of women in management positions is 8.5% (MoD, 2019, p. 2). Women make up less than 7% of officer personnel, of which the most significant number is in lower officer ranks – about 25% (second lieutenant and lieutenant). In comparison, in the group of higher ranks (major, lieutenant colonel, and colonel), women account for less than 1% of personnel. There is still no woman in the rank of a general in Serbia. Serbia falls behind Macedonia (3%) and Bosnia and Herzegovina (2%) in the share of women among senior officers (Balon, 2014, p. 26). In that matter, the Balkan countries fall significantly behind NATO countries, where the representation of women in different ranks is relatively balanced with the representation of men. They "were only slightly underrepresented in the officer's and NCO's ranks and overrepresented among the enlisted" (Carreiras, 2006, p. 110).

Literature cites demographic, economic, and security conditions, labour force characteristics, and, particularly, cultural characteristics, social values about gender, and social values about family as the causes of the lower representation of women in the armed forces, especially in the highest ranks (Segal, 2006; Woodward and Duncanson, 2017). Given that the first generation of women was enrolled in the Military Academy as recently as 2007, the number of those who have achieved the right to high positions over time is significantly lower than the number of men who are candidates for these positions. These reasons do account for the lower representation, but not for the sparse share of women in command and management positions. In reality, women occupy prominent political and economic positions in Serbian society, which is a fact that sheds particular light on the problem, proving that the aforementioned discrepancy within the military is not a matter of traditional collective attitudes.

This research aims to discover the causes of the slow-going progress of women in terms of their professional advancement in the Serbian Armed Forces. The research is based on the surveys of members of the mixed-gender military and organizational units, conducted at their workplaces in the Serbian Armed Forces and the Ministry of Defence. Within this authentic pool of information about the respondents' opinions, attitudes, and sentiments, the paper aims to identify: whether, and to what extent, the advancement of women in military service lags due to gender stereotypes, which structures contribute to this problem the most, and

whether there are other reasons of such a low representation in high-ranking positions.

The first chapter of the paper deals with research methodology. The second part consists of three sections analogous to set research goals, and deals with three different aspects of the position of women in the armed forces. These are: a) the perception of discrimination, b) military structures slowing down the advancement of women, and c) women on field assignments.

The segmentation of the problem resulted in the need for the research results of each mentioned aspect to be taken into account simultaneously with the discussion.

METHODOLOGY

Data

The basis of the empirical research are the unprocessed and, in part, processed sets of data from the Institute for Strategic Research' survey from 2019. A survey of the military personnel of gender-mixed military and organizational units is an essential precondition for women in the Armed Forces, rather than just a normative inclusion. It yields data on the cognitive, emotional, and motivational foundation of the Armed Forces' members of both sexes (Višacki and Šaranović, 2015, p. 86), providing an insight into deeper layers of interpersonal relations, and enabling prompt systemic adjustment.

The total number of respondents was 480, and the questionnaire comprised 46 questions. The survey classifies interviewees following several criteria, the relevant ones for this research being the structure of respondents by gender, rank, and age. According to age, respondents were divided into groups of people under 30, people between 30 and 40, and people over 40.

According to rank, the respondents were classified into four groups:
II professional soldier;
II non-commissioned officer;
III junior officer: Second Lieutenant, Lieutenant, Captain, Captain First Class;
IV senior officer: Major, Lieutenant Colonel, Colonel, Brigadier General, Major General, Lieutenant General, and General; (the official website of the Serbian Armed Forces, 2020).

The sample of respondents comprised all rank categories, with no generals surveyed among senior officers.

Table 1. Structure of respondents

The rank of respondents				
Soldier	NCO	Junior officer	Senior officer	Civilian
44	143	186	82	25
Gender			Age	
Men	Women	<30	31–40	>40
313	167	178	133	169

Source: (Šaranović, Kilibarda and Marček, 2021, p. 276).

Research Methods and Design

This research focuses on the challenges of women's advancement in military service. Therefore, from a comprehensive survey which is part of a larger project, data on respondents' answers to only four questions was selected and divided into two groups. The first two questions are posed in such a way as to encourage a rational assessment of the respondents, while the other two allow for greater freedom to state personal and emotional attitudes towards strengthening the role of women in the army.

In no case can the answers of the respondents be *a priori* acknowledged as accurate, but their objectivity can be assessed using:

a) *Chi-squared* statistics (χ^2) to determine the discrepancies in the answers within the same gender group to two similar questions; and

b) The statistical significance of this deviation (*p-value*).

Although it may not be precise, this data represents the most helpful information on informal relations within the armed forces.

The first group of questions:
1. *Are the same criteria applied in practice for both men and women during official evaluation and other forms of valuation of the work results of subordinates?*
2. *Assuming that they perform their duties equally responsibly and successfully, do men and women stand equal chances of promotion in practice?*

Both questions are formulated in such a way as to elicit a rational assessment (objectivity of superiors and conditions for advancement) rather than a personal point of view. Still, the first question offers more room for expressing possible competitiveness between the sexes, as it is impossible to use only reason to assess whether the evaluation is completely objective. The second question requires a somewhat higher degree of inclusion of the rational component because the degree of progress achieved (women) is quite measurable.

High χ^2 and high statistical significance (*p-value*<0.01) showed a statistically significant discrepancy between the answers to these questions within the same group. Based on these results, one could separate

the rational assessments of the respondents on the equality of conditions for advancement from personal and emotional feelings of discrimination against their gender group. The responses to these questions and deviations within the same groups make it possible to assess the hypothesis of the resistance to female members of the Serbian Armed Forces taking up the highest leadership positions and ranks. One could expect a significant disproportion in the answers in favour of the second question.

If this hypothesis is confirmed, the next assignment will be to investigate which groups of military personnel show the most outstanding resistance to the advancement of women in the Armed Forces, whether they are in a position to influence it, and their motives. Since there are no formal obstacles to women's advancement, the identification of these groups has to be based on their attitudes, stereotypes, and emotions (e.g. fear of the Armed Forces operating with women in command). This can be investigated by classifying and analysing the answers to the following two questions:

3. What is your attitude towards further increasing the number of women serving in the Armed Forces?

4. Were the number of women in senior command and management positions to increase significantly, how would this affect the quality of management and command?

The third question asks for the respondents' position directly. While the fourth question also requires a personal attitude to be expressed regarding this issue, it does so indirectly, and so points to the reasons behind the resistance to the advancement of women.

The answers were divided according to the rank and age group of respondents. These two questions were answered only by professional military personnel, with no civilian personnel included.

After classifying the responses into age and rank groups, discrepancies in the answers to these questions among the groups were determined in order to identify the structures with the most substantial resistance to women's advancement. Here, differences concerning the questions, expressed within the same group, are analysed as well. All the unexpected discrepancies could offer valuable information, as in the previous case.

RESULTS AND DISCUSSION

In line with the dominant social attitudes, most respondents of both sexes gave positive and gender-tolerant answers. However, the share of those who do not have a positive attitude towards the efficiency, ability, and responsibility of women in the Armed Forces is very high, ranging from 20% to over 40%, depending on the question. The results are summarized in three parts.

The Serbian Armed Forces Members' Perception of Gender Discrimination in the Advancement Process

The perception of gender discrimination was evaluated by analysing the first two questions. Regarding the opportunities for advancement in relation to gender, both sexes consider themselves the neglected side, although this is much more pronounced among male respondents.

Table 2. Fairness of evaluation and equality of opportunities for advancement in the Serbian Armed Forces (%) (by gender)

	Men	Women
Do the same criteria apply to men and women when evaluating the performance of subordinates?		
The same criteria are generally applied	68	83
There are frequent deviations from the actual criteria in favor of women	27	6
There are frequent deviations from the actual criteria in favor of men	2	9
Other answers	3	2
Do men and women have equal opportunities to advance in the service?		
The opportunities are primarily equal	65	44
Women have greater opportunities	19.5	4.2
Men have greater opportunities	12.1	50.3
Other answers	3.5	1.8
χ^2 statistics M/F	$\chi^2= 89.94$; *p-value*<0.00001	

Source: data according to Šaranović, Kilibarda, and Marček, 2021, p.151, p. 158.

Regarding the fairness in assessing the work performance of men and women, a significant portion of respondents (68% and 83%) believe the same criteria are applied. However, according to the answers to the second question, which is more critical for this research, significantly fewer respondents think that there is no discrimination regarding advancement opportunities (65% and 44%). The number of women who believe there is no discrimination is twice lower with the second than with the first question, which is the first of several discrepancies within the group favoring the initial hypothesis of informal obstacles for the advancement of women in the Serbian Armed Forces.

If only the first question is taken into account, it is clear that there is a gender-determined position about 'the other ones' being in a better situation. At the level of gender, there is some competitiveness encouraging subjective evaluations. This subjectivity, especially among women, is not high (9%). Strongly indicating the problematic progress of women is the intensely high disproportion in the answers to these two questions among female respondents (Table 2), confirmed by *Chi-square* statistics (Table 3).

Table 3. Differentiation to questions by gender groups

	χ^2	p-value
F1/F2	97.82	0.00001
M1/M2	68.57	0.013

Source: authors

Unlike the minimum 9% who think that men are permanently favoured, more than 50% of women estimate that men have better opportunities for rank progression. Among this 50.3% of female respondents, almost all belong to the group of junior officer ranks. In favour of their objectivity regarding this issue, we underline that nearly 83% of women believe that the evaluation is fair. In fact, 6% of the female respondents think it is even biased in their favour (Table 2), which means that about 90% of women *do not believe* that men are favoured in general. For this reason, the 50.3% of responses claiming that men are favoured in professional advancement must be considered objective, that is, based on facts.

Unexpected replies to the second question result from developing a new position, one separate from the fundamentally positive or negative attitude towards the opposite sex. That is why these results can be considered a significant indicator that there are informal obstacles to the rank progression of women in practice.

An additional observation can be made about the answers to these two questions once the respondents' rank is taken into consideration (Table 4).

In four out of the five groups classified by rank, the number of respondents who believe that men are favoured ranges from 0% to 2%. On the other hand, the number of military personnel who believe that the criteria for women are frequently more lenient is more significant by far, and even relatively high among soldiers and non-commissioned officers (48% and 31%) (Table 4).

There are no extraordinary discrepancies among the respondents. One could claim that there is a certain degree of flexibility in evaluating women and their work results, but this claim does not seem to correlate with the rank progression of women in practice.

Among the highest-ranking officers (major, lieutenant colonel, and colonel), a significant portion of the respondents believes that the chances for advancement in the Armed Forces are equal for both sexes. We take this opinion and its objectivity with considerable reserve, because it is exactly this group that decides on advancement. Therefore, it is not likely that many of them would consider themselves biased. Even with that fact in mind, in this group, there are more respondents who estimate that men have greater chances for advancement (12.2%) than there are those who believe that it is women who have greater chances for rank progression (7.3%). The assessment of this 12.2% can be considered an objective as-

sessment with great certainty, because it shows the self-critical attitude of the very group deciding on advancement. Moreover, this is not a matter of the competitive relationship between the two sexes because 99% of this group, as already mentioned, is comprised of men.

Table 4. Fairness of assessment and equal opportunities
for advancement in military service
(by rank)

Respondent's rank (%)					
Do the same criteria apply to men and women when evaluating the performance of subordinates?					
	Soldier	NCO	Junior Officer	Senior Officer	Civilian
The same criteria are generally applied	45.4	62.9	80.6	86.6	80
There are frequent deviations from the actual criteria in favor of women	47.7	31.5	8.1	9.7	16
There are frequent deviations from the actual criteria in favor of men	2.3	2.1	9.2	0.0	0
Other answers	4.5	3.5	2.1	3.7	4
Do men and women have equal opportunities for advancement in service? (%)					
	Soldier	NCO	Junior Officer	Senior Officer	Civilian
Equal opportunities	54.5	63.2	48.6	74.4	44
M have greater opportunities	18.2	12.5	40.0	12.2	40
F have greater opportunities	25.0	21.5	8.6	7.3	16
Other	2.3	2.8	2.7	7.3	0

Source: First edition – Šaranović, Kilibarda, and Marček, 2021, p.153;
second edition – authors' calculation.

What Structures Slow Down the Advancement of Women in the Serbian Armed Forces?

The answers to the third and fourth questions are analysed in order to single out the groups of military personnel who have a negative personal attitude towards strengthening the role of women in the Armed Forces. The answers were divided by age and rank groups.

In line with the subtitle, this section will focus on the relationship between the respondents' structure and *negative attitudes towards women's advancement*.

Differences between the responses of different age groups were clearly expressed (χ^2=17.3 and χ^2=25.4)) and statistically significant (*p-value*< 0.01). Expectedly, the results show a significantly higher resistance to women in the army in older groups of respondents (31–40; 40+), among whom as many as 37% and 30% believe that increasing the number of women in the army would lead to a decrease in the operational capacity of the Serbian Armed Forces.

Table 5. The generational divide in attitudes towards the advancement of women in the Serbian Armed Forces

	Age	<30	31–40	>40
3. The position to further increase the number of women in the armed forces				
1. Justified to increase the number in all branches and services of the Armed Forces		19	20	11
2. Justified for duties that do not require great physical effort		49	36	54
3. Not justified, would adversely affect the operational capability of the Serbian Armed Forces			37	30
4. Other answers		10	7	5
χ^2 statistics	χ^2=17.348;		*p-value*=0.008	
4. Effects of increasing the number of women in command and management positions				
1. Favorable		23	10	9
2. Adverse		22	26	25
3. No effect		40	55	57
4. Other answers		15	9	9

Source: authors

Negative attitudes about the increase in the number of women in the Serbian Armed Forces (in general and in high positions) are reasonably evenly distributed per age and rank groups. One would expect that the greatest opponents of strengthening the role of women in the army belong to the oldest group of respondents and high-ranking officers. These expectations are based on the fact that the older generation finds it more difficult to accept changes to the established structure and value system, i.e. they are more prone to stereotyping that men and women differ in the psychological characteristics essential for success in the military profession (Boldry, Wood and Kashi, 2001). In addition, their motive for preserving their positions is supposed to be the strongest one.

Yet, this research did not clearly show this in all matters. The assumption is supported by the results showing that this age group has the lowest share (11%) of positive attitudes about increasing the number of women in the army (Table 5). On the other hand, the negative attitude towards expanding the number of women in the military and their advancement is pervasive in all rank groups. It ranges from 21% to 43%, with a lower figure among senior officers (the oldest ones) than among soldiers and non-commissioned officers (Table 6).

Table 6. The attitude of military personnel towards the increase in the
number of women in the armed forces (%)
(by rank)

	Soldier	NCO	Junior officer	Senior officer
The position to further increase the number of women in the armed forces				
1. Justified to increase the number in all branches and services of the Armed Forces	30	11	14	9
2. Justified for duties that do not require great physical effort	27	43	47	48
3. Not justified, would adversely affect the operational capability of the Serbian Armed Forces	43	40	21	34
4. Other answers	-	6	14	9
χ^2 statistics	χ^2=21.724; *p-value*<0.0013			
Effects of increasing the number of women in command and management positions				
1. Favorable	18	13	21	6
2. Adverse	36	29	20	28
3. No effect	44	50	43	54
4. Other answers	2	8	16	12
χ^2 statitstics	χ^2=24.063; *p-value*<0.004			

Source: first question – authors, second question – Šaranović, Kilibarda, Marček, 2021, p.207.

As mentioned at the beginning, to answer the question of who is slowing down the advancement of women in the army, it is necessary to find out which groups are the most significant opponents of women's advancement, and which structures *can* slow it down. The fact that high-ranking officers are not the group with the most negative attitudes does not mean that they are not the ones most responsible for the slow advancement of women to high-ranking officer ranks. The most significant part of the Serbian Armed Forces members who do not support women in progressing to managerial positions are in the group of professional soldiers (43% and 36%).

This is a worryingly significant part, and it deserves more attention further on. However, they cannot pose insurmountable obstacles to advancement. On the other hand, senior officers have both the motive and the opportunity to slow down or limit the advancement of women to senior officer positions. As many as 34% of these respondents believe and directly state that more women in the army would negatively affect the operational capability of the Defence Forces. As many as 28% think that increasing the number of women in command and management positions would negatively affect the command system. Senior officers cannot affect the influx of new generations of women, nor can they oppose promotion procedures, but their

informal role can be assumed to be a disruptive factor. Although they do not form the majority, we believe that the opposition of one third of the high-ranking officers to the advancement of women in the army is an extremely high percentage and a very important factor in women's slow advancement. The point is that the number of high positions is many times smaller than the number of candidates who meet the formal criteria for promotion. With such competition, the voting of one third of the decision-makers in favour of males is crucial for the slow progress of women in the Armed Forces. This slow-down is informal in nature, as senior officers have the discretion to challenge any of a number of a candidate's characteristics outside the formal criteria, without citing gender characteristics.

Insufficient Preparedness of Women for Advancement in the Serbian Armed Forces

This section analyzes the same data as the previous one (presented in Table 6). However, now the focus is on analyzing the differences between the answers to questions 3 and 4 within the same groups of respondents. These differences are a potential indicator of another obstacle to the advancement of women in the military, which could not be foreseen at the beginning of this research, but which was observed during the analysis of the results of the previous section.

Within the structure of the answers to the questions presented in Table 5, Table 6, and Graph 1, special attention is drawn to the unexpected fact that within all *seven groups of respondents* (age and rank), there is a greater prevalence of negative attitudes towards increasing the number of women in the army in general, than there is towards women in command and manage-ment positions. To put it simply, members of the Serbian Armed Forces would rather accept an increase in the number of women in the highest positions (although negative attitudes on this issue are relatively widespread too) than an increase in their overall number (Figure 1).
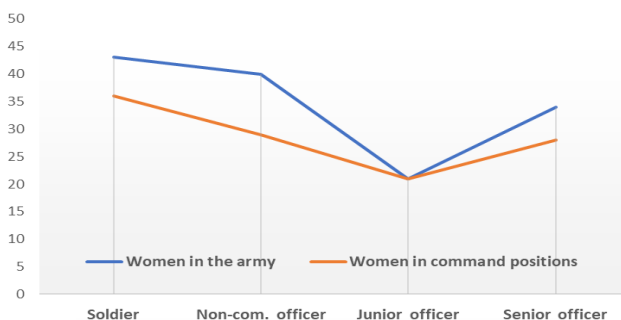

Figure 1. The negative attitude of military personnel towards strengthening the position of women in the Serbia Armed Forces (%)
Source: authors

The answers of this portion of respondents cannot be explained by gender bias or negative competitive emotions because, in that case, this relationship would be the other way round. Stereotypes and prejudices about women's poorer managerial and command abilities would cause significantly greater resistance to women at high places than to the overall number of women in the army. These respondents did not give an emotional, but a somewhat rational assessment that further increase of women in the military could have adverse effects on the operational capability of the Defense Forces. The adequacy and accuracy of their position are not the subject of this research.

The difference between the answers to the third and fourth question within the same group of respondents can be summarized in three groups, all pointing to the respondents' opinion that women are less ready for field tasks:

a) Fewer negative attitudes towards women in management positions than towards an increase in their total number in *all ranks and generations*;

b) The attitude concerning the reduction of the operational capability of the Serbian Armed Forces as a consequence of the increase in the number of women in the army is most widespread in the group of professional soldiers, who know the most about field assignments;

c) In contrast to other areas in which women in Serbia have been accomplishing significant feats for decades (political, business, financial, and other areas), their ability and preparedness for accomplishments in the armed forces have not yet been affirmed.

The problem of women's unpreparedness for field tasks has already been noted in domestic and world literature. This refers not only to women's physical abilities, which are a necessity for work in the field, but also to their insufficient preparedness to work in bad weather conditions, to participate in field operations lasting for many days (being separated from their families), to stay outside functional closed facilities and the like (Šaranović, 2011). According to military medical research, although no gender or ethnicity differences in psychological distress were observed in the field, women showed significantly higher levels of anxiety in the initial stages of accomplishing field assignments. Similar results were noted by Joiner et al. in 2000 (cited in Davis Martin et al., 2006) and Rosen et al. (2000).

The opinion of the respondents who are directly involved in the functioning of gender-mixed compositions in the field is a significant indicator that it is necessary to investigate in practice whether this problem really exists in the Armed Forces.

Although the topic of this research is the challenges of women's advancement in the Serbian Armed Forces, the issue of them progressing to the highest command and management positions cannot be separated

from the issue of their insufficient preparedness for field assignments. This is a potentially severe problem for the whole concept of including women in the defense system. According to more than 40% of respondents, appointing people unprepared for field assignments to command and management positions in peacetime would undoubtedly result in "weakening the operational readiness of the Armed Forces" in case of security challenges or armed conflicts.

In addition to the opinion that many women are not ready for demanding field conditions, another form of women's insufficient preparedness for advancement poses a potential problem. Another group of answers indicates that part of the problem of the slow progress of women in the Serbian Armed Forces lies in their specifics. The least expected responses are the opinions of a significant number of women (data from Table 6) stating that their additional engagement at all posts would have adverse effects on the efficiency of the Serbian Armed Forces. In the group of junior officers, with women making up 92% of the sample, more than 20% of women had such an opposing opinion. In the entire sample, it is 12% of women and a significant number of neutral answers.

The analysis of these two groups of answers, and their combination both indicate the posibility of the *insufficient preparedness* of a substantial number of women to advance to the highest ranks. This research does not provide sufficient elements to assess what this lack of preparedness actually means.

CONCLUSIONS

To say nothing of the post-transition period, traditional attitudes on the role of women in the Balkans, especially in Serbia, have already been substantially reduced in the post-war period. In the last twenty years, women have proved themselves equally capable of holding the same posts and performing the same jobs as men. In the last twenty years, women have proved themselves equally capable of holding the same posts and performing the same jobs as men, such as entrepreneurs, company managers, ministers, all the way to the central bank governor and the Prime Minister. On the other hand, women in senior positions in the military seem to be accepted mainly declaratively. Despite the clear commitment of the Serbian Armed Forces, society, and the State to gender equality, and although the total share of female personnel in the Serbian Armed Forces is increasing, the number of women among high-ranking officers and in managerial positions is modest.

An increase in the number of women in high positions in the Serbian Armed Forces can be expected over time, as their enrollment rate in the Military Academy and the Military Medical Academy is constantly increasing. This increases the statistical probability that more of them will progress to command and management positions once they have complet-

ed career forms of training (Command Staff and General Staff Training). However, the reasons for women progressing only to the lower officer ranks will not cease to exist.

This research analyzed the answers of members of the Serbian Armed Forces to four questions related to the advancement of women in the Armed Forces, both directly and indirectly. Statistical differences in responses were examined between the groups of respondents and also *within* the observed groups. In this way, possible gender animosities and stereotypes have been separated from the respondents' objective (not necessarily accurate) assessments.

The results showed that there are several independent causes limiting the availability of senior officers' posts to female members of the Serbian Armed Forces. Primary importance can be attributed to none of these causes.

The first group of causes refers to the expected favouring of men in rank progression in the Serbian Armed Forces. This phenomenon, though, is neither one-way nor straightforward. Conditions for advancement in practice favour men, but at the same time, there is a significant degree of concessions to women when evaluating their performance. The existence of more lenient criteria does not mean that the presence of women in the Armed Forces is condoned. In fact, they are more probably a reflection of the need to satisfy the form imposed by Serbia's commitment to meeting the standards of Resolution 1325 and the demands of developed countries. Informal ways of slowing down the advancement of women to high positions are present, but they cannot provide an explanation for the symbolic number of women in the highest positions. They are indicated by a combination of a) statistical estimates that attitudes about the easier advancement of men are objective (differences in answers to questions 1 and 2) and b) the negative attitudes of decision-making senior officers toward women's advancement.

The second group of possible causes of the slow advancement of women in the army is indicated by the opinions of a significant number of respondents about the reduced readiness of women for the highest challenges posed by this profession. For the defense system of Serbia and the whole concept of engaging women in the Armed Forces, it is necessary to investigate the reasons behind such opinions of the members of these gender-mixed units.

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ИЗАЗОВИ ПРОФЕСИОНАЛНОГ НАПРЕДОВАЊА ЖЕНА У ВОЈСЦИ СРБИЈЕ

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Резиме

Како су у војном и правном систему Србије обезбеђени сви формални услови за равноправно напредовање жена у војсци, а одбрамбени систем је прилагођен природним потенцијалима оба пола, заступљеност жена у Војсци Србије је на високом нивоу. У просеку, Србија не заостаје за НАТО чланицама, којима су постављени највиши критеријуми у погледу родне равноправности. Насупрот томе, заступљеност жена на командним дужностима је незадовољавајућа. У вишим официрским чиновима жене су заступљене свега 1%.

У фокусу овог рада су узроци успореног напредовања жена у Војсци Србије. Кључни извор за ово емпиријско истраживање су подаци прикупљени анкетирањем 480 војних лица оба пола о функционисању родно мешовитих састава. Коришћени методи су статистичка анализа и Хи статистика (χ^2), којима су утврђена кључна одступања у одговорима група испитаника на слична питања како би се релативно објективна процена раздвојила од пристрасности према сопственој групи (по чину или полу). Истражене области су: а) перцепција родне дискриминације, б) војне структуре које исказују неслагање са напредовањем жена и в) проблем који се испољио током анализе, неспремност жена за теренске задатке.

Резултати су показали да неколико независних узрока ограничава женским припадницама ВС доступност највиших официрских позиција, при чему се ни једном од њих не може приписати примарни значај. Прва група узрока се односи на фаворизовање мушкараца у напредовању. Неформални начини успоравања напредовања жена до високих позиција су присутни, али не у тој мери да би дали објашњење за симболичан број жена на највишим позицијама. Друга група узрока је неспремност самих жена за највише изазове које доноси ова професија. Анализа са великом поузданошћу упућује на психолошку и физичку неприлагођеност значајног броја жена теренским задацима. За даља истраживања, како на терену, тако и у науци, отворено је питање да ли су теренски задаци заиста прилагођени физичким могућностима жена, али и питање да ли су жене психолошки спремне за све задатке које војни позив подразумева.

THE INFLUENCE OF AUGMENTED REALITY ON ONLINE USER EXPERIENCES

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Abstract

The subject of this paper is the analysis of the impact of augmented reality on online user experiences. The analysis was performed on users' experience with the *Ikea Place App* by IKEA. Users were surveyed through the *User Experience Questionnaire* (UEQ), through which the information about their online experiences related to the analyzed application was collected. The aim of this paper is to determine whether augmented reality and augmented reality applications complement the online user experience, based on the analysis of their user experience and experience related to the dimensions of the presented application. The intention is to contribute to the creation of the business and academic public' interest in the concept of augmented reality as a model, which, by offering a 'customized' shopping experience, contributes to improving the level of consumer satisfaction.

Key words: augmented reality, virtual reality, online user experiences, IKEA

УТИЦАЈ ПРОШИРЕНЕ РЕАЛНОСТИ НА ОНЛАЈН ДОЖИВЉАЈЕ КОРИСНИКА

Апстракт

Предмет овог рада је анализа утицаја проширене реалности на онлајн доживљаје корисника. Анализа је извршена на примеру коришћења апликације проширене реалности *Ikea Place App* компаније IKEA. Извршено је испитивање корисника путем Упитника о корисничком искуству (енгл. *User Experience Questionnaire* - UEQ), на основу којег се дошло до спознаје њихових онлајн доживљаја у вези са анализираном апликацијом. Циљ рада је да се на основу анализе корисничког искуства и доживљаја у вези са димензијама представљене апликације утврди да ли проширена реалност и апликације проширене реалности употпуњују онлајн доживљаје корисника. Намера је да се допринесе креирању интереса пословне и академске јавности за концепт проширене реалности као

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модела, који понудом „прилагођеног" искуства куповине доприноси унапређењу нивоа сатисфакције потрошача.

Кључне речи: проширена реалност, виртуелна реалност, онлајн доживљаји
                    корисника, IKEA

INTRODUCTION

Imagine there is a technology that allows you to see more than others can see, hear more than others, and feel the touch, smell and taste that others cannot. Well, that technology complements the real world with virtual (computer-generated) objects that seem to coexist in the same space as the real world (Krevelen & Poelman, 2010). Imagine being able to bring to life the book you are reading, to be able to hear the music and sounds from the pages of the book, to be able to see animated scenes that evoke the ambience and events that are being described. Imagine being able to visualize your wishes and ideas about arranging your garden by virtually placing and moving different types of plants around the yard until you get the image you want. Imagine an architect being able to show you the conceptual design for the construction of a house, bridge, shopping center, etc. using 3D projection, and being able to conjure up for you how these constructions would fit into a natural or urban environment in a way simpler and more exciting than drawing or merely describing them. Imagine being able to study the anatomy of the vegetative and reproductive parts of plants, and to find out with your virtual plant what the optimal conditions for its growth are. Imagine: being able to visit hotels or tourist destinations and to get all the information about them without moving from your home; or being able to reconstruct the past, visualize the future, and interact with virtual objects in museums or some historical localities, thus enriching your experiences and knowledge; or being able to see in advance the portion of food you want to order in a restaurant and to get all the information about its ingredients and way of preparation; or being able, while buying a bag of your favorite coffee, to see the coffee plantation where the beans are grown or watch a video of the process of roasting the coffee; or being able, as a medical student, to practice surgeries in a secure virtual environment; or being able to clearly see certain constellations and the position of individual planets at any given moment, wherever you are, with the help of an application on your mobile phone. Imagine firefighters being able to see the layout of buildings, even though nothing can be seen from the flames engulfing everything in front of them, or soldiers being able to see the positions of enemy snipers spotted by unmanned reconnaissance aircraft. Members of the older generations would probably understand all this as science fiction, as something that will never be available to man. However, owing to the constant progress of informatics and the technological achievements of the 21st century, all this is possible, and is even used almost every day.

Present in the realm of science fiction, time travel to some past and future worlds has always inspired and enchanted man, and moved him to the boldest fantasies. At the current level of the development of civilization, virtual reality has allowed mankind to escape from the real world and to step into some new, unknown and imaginary worlds, creating completely immersive experiences: visits to the battlefields in the Napoleonic Wars, a journey in the footsteps of Columbus, participation in lively debates in the Roman Senate, and even walks among the brachiosauruses and tyrannosauruses from the time of the Jurassic. Less immersive, augmented and mixed realties (AR and MR respectively) bring information and virtual objects into real environments, providing incredible opportunities to master new skills, gain new experiences, create new forms of art and entertainment, and communicating and experiencing the world around us in a revolutionary way. While virtual reality replaces the real world with the simulated one, AR and MR improve the user's perception of their own reality. Augmented reality provides visible information about the real world by increasing the interactivity of physical space and virtual objects, while mixed reality, in a similar way, adds realistic virtual objects and characters to the real world, in a manner so sophisticated that they blend in flawlessly (Schwab, 2018).

We are members of the 'new' modern generation that is witnessing the creation of technologies that provide access to the virtual world. Technologies that give a small, completely ordinary human the opportunity to 'dive' into another, physically untouchable world, in which we can play without limits, and in which we can hear, feel, and see some occurrences and things that are not part of our current environment with the help of the necessary equipment, but which we can fit into it. A world in which we feel as if these virtual occurrences are part of our reality. That is why it is not surprising that the achievements in the fields of informatics development and its application is called augmented reality. The constant development of the aforementioned technologies is supported by the efforts of companies to achieve competitive advantages in modern market conditions, through abandoning traditional economy and switching to digital economy. This type of economy, thus, becomes a condition for the smooth operation of companies. The digital economy is creating an economic revolution marked by great economic performance and the longest period of continued economic expansion (Đorić, 2020).

Earlier, when talking about the virtual and augmented reality, we would first think of some complex and massive devices and particularly specialized teams for their launch. Today, augmented reality is easily accessible to all users of smartphones and tablets. By launching only one of their applications, an individual reaches the world of augmented reality, which is as a continuation of the user's reality, and a new and exciting type of human-computer interaction is established.

The research presented in this paper refers to the analysis of augmented reality accessed through the applications on 'smart' phones. The analysis is aimed at obtaining answers to the questions: how familiar users are with the very existence of the concept of augmented reality, whether this type of advertising is represented when making purchasing decisions, and whether the use of such applications increases their shopping experience.

The paper consists of five parts. In the first part of the paper, the theoretical part and the basics of augmented reality are presented through two titles: "Augmented Reality vs. Virtual Reality - theoretical and practical aspect" and "The role of augmented reality in experience marketing". The first emphasizes the differences between augmented and virtual reality, and the second defines the marketing of experiences, as well as the place that augmented reality has in this concept. Information about the application that was analyzed, as well as the company that owns it, is given in the following section of the paper, titled "From matches to augmented reality - data and methodology". In addition, the basic hypothesis, and the questionnaire on the basis of which the research results were obtained were presented in this section. The description of the sample and the duration of the research is given in the fourth chapter, "Method or Research Methodology". "Research and discussion" presents the *User Experience Questionnare* - UEQ, based on which the analysis of the impact of augmented reality applications on online user experiences was performed, as well as the research results. In the last part of the paper, the conclusions and basic recommendations of the author are made.

AUGMENTED REALITY VS. VIRTUAL REALITY - THEORETICAL AND PRACTICAL ASPECT

Augmented reality, as a product of the human ingenuity of the Fourth Industrial Revolution, is a recent topic about which most people know little to nothing. *Augmented Reality* (AR) is the creation of a virtual world that enriches the real world but does not replace it (Gervautz & Mazuryk, 1996). Azuma (1999) defines augmented reality as an extension of human perception which receives, processes and stores information that is usually not recognizable to the human senses. The same author, in his earlier research, points out that AR is a combination and connection of real and virtual objects within a real environment, where the system thus created is interactive and displayed in three dimensions, in real time (Azuma, 1997). According to Stoyanova (2014), augmented reality mixes the real with the simulated, or synthetic, and projects images and information into the user's field of vision. It provides us with a layer of virtuality that extends to the perception of the real environment, at a given moment. Usually, the virtual layer consists of 3D objects or 3D scenes, with or without sound, and sometimes only textual information is added

(Loijens, Brohm & Domurath, 2017). As Schwab simply illustrates (2018) *virtual reality* (VR), *augmented reality* (AR) and *mixed reality* (MR) are versions of an immersive audio-visual set of technologies that allow people to move to a virtual environment or add virtual elements to their real environment. Moreover, their immersive nature blurs the lines between the computer-simulated world and the real world.

Azuma (1997), whose scientific work is a good starting point for starting research in this field, observes and describes AR as a reality in which 3D virtual objects are integrated into a three-dimensional real-time environment. Such a version of reality, upgraded with computer-generated data and objects, improves the user's current perception of reality. Although some authors, despite the existing significant differences, believe that AR is a variation of the *virtual environment* (VE), or *virtual reality* (VR), it is necessary to emphasize the existence of an essential difference. Namely, virtual reality technologies completely exclude the user from the physical reality, completely immersing him in a synthetic, computer-constructed and generated artificial environment, and removing him from the real world in which he actually is. As an ambient simulation of reality, VR represents the process of transforming the real human world into a virtual digital world in which users can completely immerse themselves. In contrast, AR, as the name suggests, only expands physical reality by allowing the user to see the real world around him complemented by virtual three-dimensional objects and accompanying sounds that are combined with the real world. Unlike VR, AR magnifies the real world by adding scenes, objects, and textual information to the existing world instead of creating new non-existent worlds from scratch (Mealy, 2018). Thus, AR is an essential 'addition' to the real world, not its virtual replacement, which means that AR complements reality, instead of completely replacing it. Ideally, the user gets the impression that virtual and real objects coexist in the same space (Azuma, 1997). It is clear that both VR and AR are enabled by the current development of digital technologies and that, by integrating real and virtual worlds, they offer a mixed reality in which physical and virtual objects complement, support and communicate with each other (Ohta & Tamura, 2014), blurring the line between the real and the virtual.

The areas of augmented and virtual reality have inevitably evolved over time, and have become easily and increasingly accessible to users, so that everyone can use them with the help of appropriate technology, which has also advanced to smaller and lighter formats and more attractive designs. As *Plastic Hava* points out on the website of the world's leading digital experience advisor, although the areas of augmented and virtual reality are very similar, there are differences between them (www.plasticmobile.com). Augmented and virtual reality are complementary, but they represent the application of different technologies: aug-

mented reality applies digital information to the physical world, and virtual reality replaces physical reality with a computer-generated environment (Porter & Heppelmann, 2017).

Opting for the generally accepted definition of augmented reality given by Azuma (1997), it remains for us to agree that the main characteristics of the augmented reality system are manifested through three basic criteria:

▪ Combining and merging virtual elements with the real world, which allows for the enrichment of real space while achieving the visual impression that virtual elements are part of the real world;

▪ Real-time interactivity, which means that the user communicates the request via input devices (in the simplest case via mouse and keyboard), and depending on the dynamics of movement, virtual objects can be moved in relation to the stationary observer; and

▪ Display and registration (*calibration*) in three-dimensional space (real and virtual objects are in a 3D relationship), which are identified as the main problems that currently limit augmented reality applications. Namely, augmented reality requires great precision, since the impression of reality, i.e. that the virtual element belongs to real space and creates the illusion of coexistence of real and virtual within the same field of view, is achieved only in that case. In this regard, objects in the real and virtual worlds must be properly and accurately 'aligned' with each other so that the illusion of the coexistence of the two worlds is not jeopardized (Azuma, 1997). Without accurate registration, augmented reality will not and cannot be accepted in many applications.

Therefore, the goal of augmented and virtual reality is to broaden the horizons of users, to expand the real world in which a person is currently located and to allow them to experience the atmosphere of a new, virtual environment from their office or home. The technology that enables these experiences, which 'teleport' a person to the world of virtual frames, is intended for wide application. The purpose of augmented reality is to enrich the perception and knowledge of the real environment by adding digital information to the environment. In most augmented reality applications, the user visualizes synthetic images through glasses, headphones, video projectors or via mobile phones / tablets / notebook PCs.

Augmented reality applications generally use one of two approaches: a marker-based or a location-based approach (Lojiens et al., 2017). When a marker-based application is used, the software tracks a specific object, for example a barcode, using a camera and scans it onto the screen of the device. Location-based applications use the device's ability to remember and record data about a specific position on Earth, and to provide all the necessary information related to some location.

Based on data from the Statista website, the increasing presence of augmented reality and, above all, an increase in the number of users of

mobile augmented reality can be noted (www.statista.com). Namely, the analyses indicate that in 2020, there were 1.73 billion users of AR on a global level, which is an increase of slightly more than 1.5 billion as compared to 200 million users in 2015 (Graph 1). In 2021, the number is estimated to have reached 1.96 billion mobile AR users worldwide. Based on Graph 1, it is clear that the number of mobile augmented reality users grew in the observed period. From 400 million mobile augmented reality users in 2016, there is a noticeable increase to 1.73 billion in 2020, with a constant tendency of growth. It is believed that the number of mobile augmented reality users will keep to this trend in the future, because it is predicted that the number of this category of users in 2023 will reach 2.4 billion.
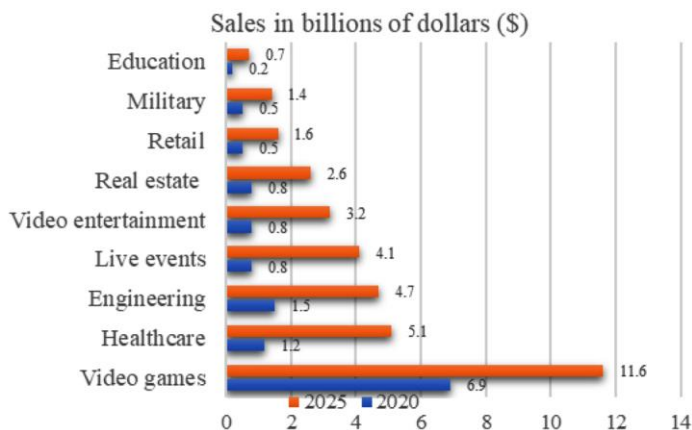

■ Number of mobile augmented reality (AR) users worldwide from 2015 to 2023 (in billions)
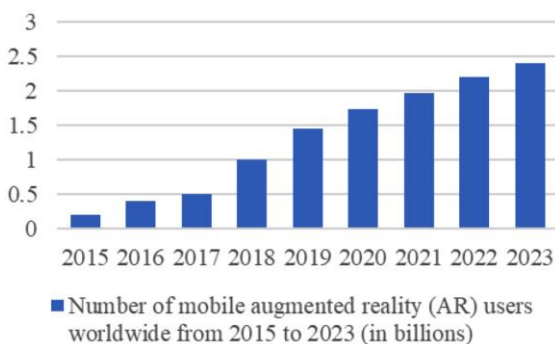
Graph 1. Overview of the number of mobile augmented reality (AR) users worldwide from 2015 to 2023 (in billions)

That this is a fast-growing market is evidenced by forecasts that the global augmented and virtual reality market will reach 18.8 billion US dollars in 2020, which would be an increase of over 78% as compared to 2019 (www.statista. com). Additionally, it is estimated that the market will reach a value of 50 billion US dollars by 2024 (www.threekit.com).

Reality-altering digital technologies have been in development over the last five decades (*Ivan Sutherland* in 1968.), although, due to the convergence of improved, increasingly powerful hardware, mobility and interactivity capabilities, recent years have witnessed their accelerated progress and increasing application (Schwab, 2018), so it is quite certain that AR will become an element increasingly integrated into the daily lives of an increasing number of people. Although augmented and virtual reality are mostly used in the domain of games, there are other sectors in which these two types of reality have found application. According to the research conducted on the Statista website (www.statista.com), which re-fers to the comparative analysis of the size of AR/VR for 2020 and 2025, it can be concluded that, in 2020, the largest AR/VR market was right in

the domain of games, and it can be predicted that, in 2025, this will still be the case. However, as augmented reality technology becomes increasingly popular and accepted by consumers and companies, all predictions go in the direction of increasing application in other sectors by 2025 (see Graph 2).

Sales in billions of dollars ($)

Segment	2020	2025
Education	0.2	0.7
Military	0.5	1.4
Retail	0.5	1.6
Real estate	0.8	2.6
Video entertainment	0.8	3.2
Live events	0.8	4.1
Engineering	1.5	4.7
Healthcare	1.2	5.1
Video games	6.9	11.6

Graph 2. Forecast of the size of the AR/VR world market by segments (2020-2025)

THE ROLE OF AUGMENTED REALITY
IN EXPERIENCE MARKETING

In order for companies to be competitive, it was necessary for them to abandon the traditional ways of advertising and communicating with potential and existing customers, and to turn to the application of modern methods. The term 'traditional marketing' refers to the canon of principles, concepts, and methodologies that marketing professionals have collected over the last thirty years of the 20th century (Schmitt, 1999). Traditional marketing, and the traditional way of doing business imply that companies advertise their products on television, radio, and by placing ads in newspapers. However, the increase in the number of Internet users and the growing level of digital literacy have led to the disappearance of audiences following traditional media and to the constant need for change in business in the digital era (Singh & Pandei, 2014). Information and communication technologies (ICT) can improve access to basic services and create new opportunities for employment; they have significant potential to improve the quality of people's lives and to fundamentally change the way people communicate among themselves (Nedić, Cvetanović & Despotović, 2018). According to the *Global Digital Intelligence 2017 report,* the role of information technology directors has begun to

grow, new positions dedicated to innovations have 'sprung up' in organizational schemes, significant investments have been made in technology and the entire business, and models have been transformed (www.pwc.com). Commercial relations in augmented reality imply the psychological involvement of consumers, through the existence of interactivity and through the realization of the experience of 'immersion' (Huang & Hsu Liu, 2014). Where the company's goal is to improve and establish lasting relationships with the users of its products, one of the ways to introduce customers to the company's products and ensure their psychological involvement is to use augmented reality applications, as one of the novelties of the digital era. With augmented reality, new models of competition are established in an increasingly sophisticated market which, offering a completely new experience for the customer, leads to increased sales and increased levels of consumer satisfaction after purchase, ultimately providing the company with loyal consumers, which are its most valuable asset. Hence, engaging customers in the purchasing process is becoming an increasingly important factor in differentiating and constructing the competitive advantage of companies.

The experience is characterized as unforgettable, unlike products that are tangible and services that are intangible (Štavljanin, 2017). The experience arises "when a company intentionally uses a service as a stage and a product as a support to engage the consumer" (Pine II & Gilmore 1999, p.11). Schmitt (1999b) defined a new marketing approach - an experience-driven approach that is the opposite of the traditional marketing approach. This new type of approach he called experience marketing. Experience marketing has shifted the focus of customer reactions to certain stimuli they encounter, as opposed to the traditional one whose focus is on the characteristics and benefits of manufactured products. Traditional marketing arose from the understanding that customers are rational beings who do not employ emotions during the act of buying, but only approach shopping rationally. Experience marketing defines customers as rational, but also emotional beings, for whom a holistic experience must be created. The customer experience is achieved by the interaction between the customer and the company at all possible contact points (Grewal et al., 2009). Holbrook & Hirschman (1982) define an "experiential" view of consumption that manifests itself through "fantasies, feelings, and fun" by focusing on the symbolic, hedonistic, and aesthetic factors associated with consumption.

Online customer experience is the implementation of the concept of customer experience in the online environment (Štavljanin, 2017). The concept of online customer experience appears in the field of digital marketing and is associated with the effectiveness of the interactions with online users (Novak, Hoffman & Yung, 2000). The online user experience consists of a subjective, multidimensional psychological-logical response of the customer to the online presentation of the product (Bleier et al., 2018).

FROM MATCHES TO AUGMENTED REALITY -
DATA AND METHODOLOGY

The company *IKEA* is included in the analysis, because it provides its consumers with the opportunity to use the *Ikea place* application. For years, buying furniture required a great deal of luck and was a 'lottery' for most customers. Although they would measure the available space for an armchair, bookshelf, chest of drawers or dressing table, and perhaps take some pictures, and choose a piece of furniture in the store that they think would functionally and aesthetically best suit the given space, buyers usually had to hope for the best. In 2014, *IKEA* conducted a research whose results support the stated challenges that customers face in choosing furniture. Namely, more than 70% of respondents said they did not know the dimensions of the rooms in their homes, 14% of the customers stated that they purchased wrong-sized furniture for their rooms, while 33% said they were in doubt as to how to properly measure for furniture (Peddie, 2017). In order to minimize mistakes when choosing, and thus minimize the dissatisfaction after buying furniture from its range, the company has created an augmented reality application.

With this application, consumers who are not sure how certain furniture would fit into the space they intend to equip can 'fit' the desired product into their living and working environment and assess how it 'fits' with the rest of the interior; they can approach it, look at it from all sides and experience it in three-dimensional space. This technology creates the illusion of the existence of the selected pieces of furniture in a real environment and provides an opportunity for consumers to 'discover' which products are most suitable, and which best fit into the selected space and their exciting and practical "accommodation" in home, without leaving the comfort of their armchairs, thus improving the user experience and increasing consumer satisfaction. As it is pointed out on the company's website, the *Ikea place* application is currently available on the *iPhone 6S* and *iPhone, iPad* and *Android* devices of the newer generation.

The *Ikea Place* application allows its users to place virtual replicas of the *IKEA* furniture of their choice in their homes and the existing ambience with the help of AR technology. At the same time, it gives customers an impeccable view and knowledge of how the selected furniture and the desired product could look in the real world, once placed in the intended place (Ozturkcan, 2020). Simply put, the application uses augmented reality to provide users with the opportunity to visualize their wishes and ideas by virtually equipping their rooms and apartments with items available in the catalog, placing digital IKEA furniture in a real physical environment next to existing items through the device screen (tablet, smartphone).

The IKEA place application was presented to the public in September 2017, whereby the Swedish company provided an opportunity for

their customers to 'equip' their home, cafe or office with well-designed and affordable furniture from their seasonal collections before buying it, all without ever stepping into the store. The application enables the definition of the space that the customer wants to equip, offering unique and relevant recommendations based on the entered preferences and existing knowledge about *IKEA* furniture. By launching the AR application, the company took advantage of new technologies in creating added value for customers by raising the level of service, with the basic intentions to turn the often traumatic experience of choosing furniture into a fun digital engagement, and to contribute to solving practical problems when buying furniture. With this free application, IKEA signals that it understands the obstacles involved in the process of buying furniture and provides innovative, digital, technology-based support to its customers in an attempt not only to facilitate the decision to buy furniture that will visually and aesthetically best match real space but also to eliminate the unwanted and unsuitable results of wrong choices (Ozturkcan, 2020).

Initially, the application was limited to testing only one piece of furniture or items for space decoration, but the company has updated the application so that users can now simultaneously test several products from the *IKEA* range in augmented reality and with the help of a 3D display, which faithfully depicts the dimensions and layout and allows customers to see how 'selected' virtual furniture fits into the real space of their home. By selecting pieces of furniture and items for decoration, the user is given the opportunity to see how different pieces look together until, based on precisely defined dimensions and shapes, he gets the impression of an ideally furnished and decorated home. The three-dimensional views of more than 2,000 products are available from a variety of angles before users select the ones they want using an app that directs them to an Ikea website to complete a purchase. In addition, by using the phone's camera to focus on any piece of furniture, the application provides potential users with the opportunity to immediately 'discover' similar alternatives available in the *IKEA* range and virtually fit them into real space. In this way, with the synergetic effect of the useful and fun aspect of buying, the *IKEA Place app* creates certain advantages that are reflected in: providing an educational experience, minimizing product returns, growing customer engagement, the growth of trust due to the virtual testing of products before purchase (Mitrović, 2020), and in the existence of a unique, unusual and extraordinary shopping experience. Therefore, AR has the potential to improve consumer visualization of products, to increase consumer engagement, and thereby to improve perceptions of the shopping experience and improve the level of consumer satisfaction.

This research, and the analysis of augmented reality and its impact on online customer experiences was performed on the basis of the *User Experience Questionnaire* (UEQ). The conclusion drawn was based on

the answers of the respondents. Additionally, a general hypothesis was defined, which reads: "Online user experiences are complemented by the use of augmented reality applications." Based on the general hypothesis, the following were defined and derived:

> H1: Attractiveness, as a dimension of user experience, increases by using AR applications;
>
> H2: Efficiency of product, as a dimension of user experience, increases by using AR applications;
>
> H3: Stimulation, as a dimension of user experience, increases by using AR applications;
>
> H4: Perspicuity, as a dimension of user experience, increases by using AR applications;
>
> H5: Novelty, as a dimension of user experience, increases by using AR applications;
>
> H6: Dependability, as a dimension of user experience, increases by using AR applications;

Without deviating from *The Testament of a Furniture Dealer*[1] and Kamprad's legacy of self-imposed efforts to 'reduce' prices so that even people with very limited resources can afford to shop in IKEA's giant winding labyrinths, and daring to be different and transforming adversity and obstacles into opportunities, the company has grown into an empire and a global home furnishing chain. The example of the company confirms the notion that companies not only produce material artifacts or offer services, but also create brands that are by no means limited to the logo, or the image printed on the label and product, given that the competitions between manufacturers is no longer only a matter of price and quality, but and a corporate value narrative that constructs a recognizable and authentic company identity. Likewise, as part of contemporary consumer culture, IKEA perfectly illustrates the fact that corporate brands often play an important role in branding countries (Kristoffersson, 2014).

IKEA stores have also managed to serve customers in lockdown conditions due to the global corona virus pandemic. Sales in *IKEA* retail stores reached 39.6 billion euros in 2020, marking a decrease of only 4.2% compared to the previous year's sales and an increase of 2% as compared to 2018, while online sales increased by 45% as compared to 2019 (www.ikea.com).

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[1] The company's values, visions and attitudes are summarized in nine theses of the testament, which is the most important artifact and manifesto of corporate culture, but also the *IKEA* mantra, which as a 'sacred record' is based on the idea "Create a better everyday life for many people."

METHOD OR RESEARCH METHODOLOGY

For research purposes, the User Experience Questionnaire (UEQ) was made available to users of products from the IKEA product range via the Internet. The research period covered April and May 2021, when 30 respondents were interviewed. All respondents are between the ages of 16 and 33, considering that it was assumed that the younger population owns newer generation phones and that they have the knowledge and skills needed to use the mentioned application.

RESEARCH AND DISCUSSION

In today's competitive market, the achievement of a superior user experience is a condition for the commercial success of any product, and therefore a condition for the realization of a positive financial result for companies. User experience is a subjective impression, so it is difficult to measure it, but its measurement is necessary, given that it provides important information for a possible change in some instruments of the marketing mix. This measure can be used, for example, to check whether a new version of a product offers an improved user experience, or whether the product is better or worse than competing products (Schrepp et al., 2014).

To research the online customer experience, the authors used the User Experience Questionnaire (UEQ). The goal of this questionnaire is to quickly measure customer experience. The questionnaire takes into account the feelings, impressions and attitudes of the respondents, and presents a format that supports the direct expression of these elements (Stumpp et al., 2019). Information about aspects of product usability (efficiency, comprehensibility and reliability) and aspects of user experience (stimulation, novelty) is collected, and thus the questionnaire offers a comprehensive impression of the user experience of brand touch points (Schrepp, Hinderks & Thomaschevski, 2017).

Attractiveness, as one of the six scales of the questionnaire, shows the overall impression of the user about the product. *Attractiveness* encompasses aspects of the pragmatic and hedonistic qualities. *Efficiency* shows how effectively product users can solve the problems that caused them to buy the product. *Perspicuity* indicates how clear and easy the product is to use and understand. *Dependability*, as a scale of UEQ, shows how satisfied users are with the product, or whether the product met their expectations. *Stimulation* is aimed at getting an answer to the question of how a product affects users, whether it is interesting or not, and whether it motivates them to buy again. *Novelty* shows how innovative and creative the product is for users. *Efficiency*, *Perspicuity* and *Dependability* are aspects of the pragmatic quality, while *Stimulation* and *Novelty* are aspects of the hedonistic quality. Each of the presented UEQ

scales has its own pairs of opposite answers. The structure of the User Experience Questionnaire (UEQ) is presented in Figure 1.
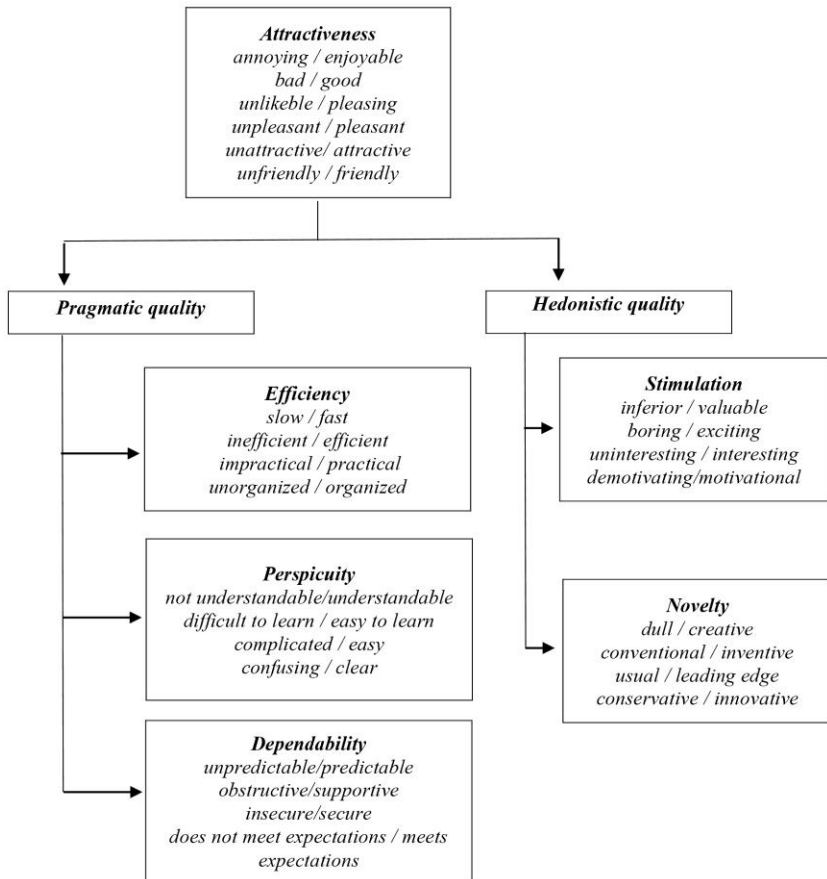

Figure 1. Assumed scale structure of the User Experience Questionnaire (UEQ)
Source: Adjusted to: Schrepp, M., Hinderks, A., & Thomaschewski, J. (2017). Construction of a Benchmark for the User Experience Questionnaire (UEQ). International Journal of Interactive Multimedia and Artificial Intelligence, 4(4), p. 41

The task of the respondents was to fill in this questionnaire in order for their perceptions of the *Ikea Place App* to be assessed. The UEQ questionnaire scale has the following format (the Attractiveness scale is taken as an example):

My overall impression of the product is that it is:								
annoying	○	○	○	○	○	○	○	enjoyable
bad	○	○	○	○	○	○	○	good
unlikeble	○	○	○	○	○	○	○	pleasaning
unpleasant	○	○	○	○	○	○	○	pleasant
unattractive	○	○	○	○	○	○	○	attractive
unfriendly	○	○	○	○	○	○	○	friendly

The survey contains pairs of opposites related to product properties. The circles between the opposites represent the grades. The ratings range from 1 (if they do not agree at all with the product description) to 7 (if they think that the description fully corresponds to the product). Appropriate product dimensions, or characteristics, are given by user assessment in the semantic differential from -3 to +3. Values between -0.8 and 0.8 represent a more or less neutral score on the appropriate scale, values > 0.8 represent a positive assessment, and values < -0.8 represent a negative grade. Table 1. shows the middle value and variance based on the given answers of the respondents. Based on these values, it can be concluded that the scales *Attractiveness, Perspicuity* and *Dependability* were rated as positive scales, which means that users of the *Ikea Place App* have positive experiences with these features of the app itself. On the other hand, the scales *Efficiency, Stimulation* and *Novelty* have values lower than 0.8, but these values did not fall below - 0.8. This tells us that the respondents did not give a negative grade for the overall scales of this questionnaire. In addition, a graphic presentation of the respondents' experiences was derived, where their estimates are expressed in the semantic differential from -3 to +3 (see Graph 3).

Table 1. UEQ scales, middle value and variance

UEQ scales (middle value and variance)		
Attractiveness	1.539	1.58
Perspicuity	1.100	1.63
Efficiency	0.758	1.28
Dependability	1.492	0.61
Stimulation	0.717	1.20
Novelty	0.400	0.98

Source: Author's calculation
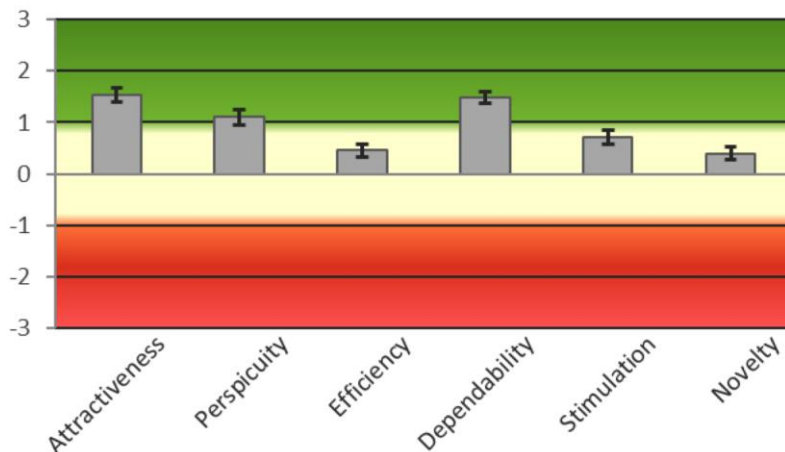
Graph 3. User experiences related to UEQ scales

However, if we look at pairs of the examinees' responses individually, there are not so positive assessments of certain product characteristics. Namely, based on this research, it was concluded that the majority of users are dissatisfied with *Perspicuity* as a scale of this questionnaire. First of all, this refers to a couple of *not understandable/understandable* answers, where the middle value was -0.4. Then, the results based on the pair of answers *impractical/practical* within the scale *Efficiency* amount to -0.5, and in the aspect of *Novelty*, when choosing between the *usual / leading edge* answers, the result was -0.4. All this affects the formation of the mean value of the pragmatic and hedonistic qualities, which is shown in Table 2.

Table 2. Middle value of the pragmatic and hedonistic qualities

Pragmatic and hedonistic quality	
Attractiveness	1.54
Pragmatic quality	1.12
Hedonistic quality	0.56

Source: Author's calculation

CONCLUSION

In the era of digital transformation, augmented reality technology offers an innovative framework for differentiating and constructing companies' competitive advantage. Many retail chains have recognized the positive effects of augmented reality and are working to create AR applications that will allow customers to visualize products, make the right choices based on personal preferences and experience a 'customized'

shopping experience by simply using their smartphones. Based on the conducted analysis, all dimensions of the user experience related to the *Ikea Place App* have achieved positive results. Above all, it means a positive impact on the dimensions of *Attractiveness, Perspicuity* and *Dependability*. Therefore, the pragmatic and hedonistic qualities of this product were also assessed positively. This begs the conclusion that augmented reality applications, such as the analyzed application, are represented in the life of modern man and that the hypothesis "Online user experiences are complemented by the use of augmented reality applications" is true. Since the respondents did not give a negative assessment to any UEQ scale, which refers to the dimensions of their experience with the IKEA AR application, the derived hypotheses are also proven to be true. However, the dimensions of the user experience related to the analyzed application, such as *Stimulation, Efficiency* and *Novelty*, did not receive enviable results, which indicates that there is room for its further improvement through the removal of objections related to the mentioned dimensions. In addition, the hypotheses cannot be fully accepted, because the conclusions of this research were drawn from the analysis of the answers of a small number of respondents. Since this research yielded positive results and proved a positive correlation between augmented reality applications and online user experience, the authors recommend that companies operating in the Republic of Serbia start presenting their products through similar augmented reality applications, which would contribute to the improvement of visualization products, and provide a unique adventure, and an unusual and extraordinary experience when choosing and buying. This recommendation is based on one of the main limitations of this research. A small number of companies in Serbia base their business on the analysis of the online experience of their customers through augmented reality applications. They mostly base their business on traditional measurements of their clients' experiences, not on online experiences, which greatly limits this research. The directions for future research refer to the critical review and analysis of the existing literature and research on the topic of customer experience, and especially online customer experience. In addition, there should be more studies on the development and implementation of AR systems and applications in order to expand the analysis of the impact of augmented reality on society and its members' online experiences.

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УТИЦАЈ ПРОШИРЕНЕ РЕАЛНОСТИ
НА ОНЛАЈН ДОЖИВЉАЈЕ КОРИСНИКА

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Резиме

У условима савременог пословања, чије су основне карактеристике дина-
мичност и дигитална револуција, компаније се све више ослањају на коришћење
технолошких достигнућа ради постизања својих циљева. Проширена реалност
омогућава корисницима апликација проширене реалности да прошире свој фи-
зички свет, допуњујући га виртуелним објектима. За разлику од проширене реал-
ности, виртуелна реалност у потпуности замењује реални свет корисника вирту-
елним светом, уз помоћ адекватне технологије. Без обзира на разлике, основни
циљ проширене и виртуелне реалности је да, пре свега, кориснику пруже ширу
слику физичког света у коме се он тренутно налази и да му омогуће да „закорачи“
у свет виртуелних оквира. Дигитална ера диктира нове услове пословања услед
повећања броја корисника интернета и нивоа дигиталне писмености. Бројне
фирме су се одлучиле да креирају апликације проширене реалности и да на тај
начин омогуће својим купцима да визуелизују производе и доживе „прилагођено“
искуство приликом куповине. Циљ компанија је да на тај начин креирају натпро-
сечни доживљај својих купаца, па своје пословање заснивају на тзв. „маркетингу
доживљаја“ и на остварењу супериорног корисничког искуства. Зато компаније
све чешће доносе одлуке да психолошки укључе своје купце у процес онлајн ку-
повине. Један од начина оваквог укључивања потрошача је управо њихово при-
ступање апликацијама проширене реалности. У раду је извршена анализа утицаја
проширене реалности и апликација проширене реалности на онлајн доживљаје ку-
паца на основу Упитника о корисничком искуству (енгл. User Experience
Questionnaire - UEQ). Анализа се односи на утицај апликације проширене реално-
сти компаније IKEA на онлајн доживљаје њених купаца. UEQ упитник, кроз њего-
ве дефинисане димензије, пружа реалну слику корисничког искуства у вези са про-
изводом. На основу анализе дошло се до закључка да су све димензије у вези са
апликацијом Ikea Place App оствариле позитивне резултате. Одлични резултати се,
пре свега, односе на димензије Привлачност, Разумљивост и Поузданост, док су
димензије Стимулација, Ефикасност и Новина постигле добре резултате, али уз по-
стојање могућности даљег усавршавања ових димензија анализиране апликације, те
и могућности њеног напредовања у будућности. С обзиром на то да је истраживање
у овом раду дало позитивне резултате и указало на позитиван утицај апликација
проширене реалности на онлајн доживљаје корисника, закључак је да би све компа-
није требало да се усредсреде на креирање ових апликација како би на тај начин
омогућиле својим купцима супериорно искуство приликом онлајн куповине.

THE IMPACT OF SERVING PRACTICES
ON CHILDREN'S FOOD INTAKE IN SCHOOLS

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Abstract

The purpose of this study was to investigate the ambience factors which affect children's consumption of school meals, in order to provide policy makers and school canteen managers with practical recommendations on how to improve children's food intake in the future. The study was conducted in four schools in Belgrade, over a period of two weeks, adopting the techniques of in-field observation and content analysis. Overall, forty visits to school restaurants were performed and 205 pictures were gathered on those occasions. The results show that all three investigated aspects (i.e. kitchenscape, tablescape and platescape) affect children's food consumption, as well as their willingness to eat specific food items. The avenues of further research as regards this topic are also addressed.

Key words: children, ambience, serving, canteens, food

УТИЦАЈ ПРАКСЕ ПОСЛУЖИВАЊА
НА ДЕЧЈУ ИСХРАНУ У ШКОЛАМА

Апстракт

Сврха ове студије била је да се истраже амбијентални фактори који утичу на исхрану деце у школама, како би се креаторима политике и менаџерима школских кантина пружиле практичне препоруке како у будућности да побољшају дечји унос хране за школске оброке. Студија је спроведена у четири школе у Београду, у периоду од две недеље, користећи технике посматрања на терену и анализе садржаја. Укупно је обављено четрдесет посета школским ресторанима и том приликом је прикупљено 205 фотографија које су потом анализиране. Резултати показују да сва три испитивана аспекта (тј. кухињско уређење, стона декорација и посуђе на ком се храна сервира) утичу на дечију потрошњу хране, као и на њихову спремност да једу одређене намирнице. У том смислу, у раду се такође разматрају начини даљих истраживања на овом пољу.

Кључне речи: деца, амбијент, сервирање, кантина, храна

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INTRODUCTION

The majority of research that addresses children's eating behavior examines meal sizes, types of food, and other nutritional aspects of eating habits. The importance of the decoration of the meals provided for children is recognized in several studies (Boschini, Falasconi, Cicatiello & Franco, 2020; Klanjsek & Pajnkihar, 2016; Kaiser et al., 2015; Storcksdieck et al., 2014; Hu et al., 2010; Salazar, Feenstra & Ohmart, 2008; Guang-Jun, 1995) conducted in different settings. However, studies investigating the relevance of the food serving context – serving practices and environment, especially in Serbia, are still few.

Sobal & Wansink (2007) argue that re-designing the eating landscape, which is often an unrecognized aspect of eating behavior, can affect food intake. They list four pervasive environments and their assumed influences:

- Kitchenscapes may moderate the quantity of food consumed through the availability, diversity, and visibility of foods;
- Tablescapes affect variety, abundance, and accessibility;
- Platescapes influence portion and/or package size, arrangement, and utensil type;
- Foodscapes are related to food-item forms and landmarks.

Policymakers from several countries of the EU understood the positive impact of child-friendly décor in facilities for school meals provision. They introduced it into legal acts, stating that:

> "Dining facilities should support the educational experience related to food, hygiene and health and provide opportunities for social interaction and development […] and giving children enough time to eat (20-30 min). Recipes are included in 47% of school food policies, and around 40% address kitchen facilities/equipment (41%), procurement practices (38%), and food arrangement/presentation (38%)" (Storcksdieck et al., 2014).

Some policymakers define certain aspects of dining arrangements more precisely. For instance, Germany suggests that every child should have an eating space of 1.4-1.7 square meters, while the dining room should be colorful, full of light and decorated with appealing arrangements (e.g., plants, pictures, table decoration). Maltese policy recommends bright murals with a food theme, new tables and chairs, and background music. Moreover, they also advocate for posters promoting healthy eating with pictures of fruit and vegetables to be displayed on the walls, as well as new menu boards with clear information and prices. Austria prescribes that a minimum of 10 pieces of fruit (of at least three different types) are on display in every break.

Besides the exposure to food items and portion size, food decoration is also relevant, as observed by one health worker:

> "It is evident that children prefer to eat food that is better looking or decorated. Smaller children like it when parents serve them food on plates and in glasses painted with cartoon motives." (Klanjsek & Pajnkihar, 2016)

Moreover, other arrangement elements, such as the proximity of a particular type of food on the table (Musher-Eizenman et al., 2010) and food appearance (Kildegaard et al., 2011), strongly affect children's eating decisions.

Finally, food decoration is correlated with children's food intake in some settings other than schools, such as: hospitals (José, de Castro, & Canella, 2021), camps (Condrasky, Quinn, & Cason, 2007), or day care centers (Hall & Holmberg, 1974), to name a few.

To better understand the influence of serving practices on children's food intake in Serbia, we conducted in-field observations and content analysis of the visual materials related to food serving in schools, considering the fact that this place has a crucial impact on children's diets. This study is exploratory in its nature, given that this is one of the first attempts to investigate the cited correlation in the domestic market.

LITERATURE REVIEW

Kitchenscapes represent the environment in which the food is prepared and consumed. Many elements within cooking and dining facilities, such as their size, furniture arrangement, lighting, temperature, sound, and ambient conditions, affect food intake (Baskentli, Block, & Morrin, 2021; Sobal & Wansink, 2007). Moreover, Musher-Eizenman et al. (2010) and Wansink, Painter & Lee (2006) argue that the proximity of the food in the room or on the table significantly influences the quantity of food intake. Finally, if food is stored in bigger containers, it is assumed that storage costs would be higher; therefore, people tend to decrease these costs by eating more food (Chandon & Wansink, 2002).

Tablescapes are related to the way the tables where food is served and eaten look (Sobal & Wansink, 2007). Many parameters, such as size, surface material, tableware arrangement and size and the number of people participating in the meal, should be considered when assessing food intake related to the table setting. In addition, some ambient features, like music, smell, lighting, food temperature, and color, can affect food consumption (Stroebele & De Castro, 2004) too.

The body of literature shows that, in the school context, it is especially relevant whether food is served on trays or on the table. In their experiment, García-Segovia, Harrington and Seo (2015) established that the hedonic ratings for food appearance were much higher for food served on the table than on the tray. The proximity of the food to the served person significantly impacts the intake quantity (Musher-Eizenman et al., 2010;

Wansink, Painter & Lee, 2006). Similarly, when the same quantity of food is separated into different bowls, people serve themselves more (Kahn & Wansink, 2004). Furthermore, Fagerberg et al. (2019) established that the number of food additions significantly influences food intake. Their model showed that each food addition resulted in approximately 50g of extra food intake. Food intake will also depend on the social interaction during the meal – the duration of the meal is longer and the amounts consumed are higher when people eat together with others than when they eat by themselves (Bell & Pliner, 2003; Stroebele & De Castro, 2004).

Platescapes represent the sum of the visible attributes of a particular plate or a similar food container (Sobal & Wansink, 2007). More specifically, they include all types of tableware, such as: plates, cups, glasses, bowls, boxes, jars, cans, and similar dishware. Their designs, in terms of size, materials and colors, are vital for the food intake, as was posited in many previous research (summary provided in Hollands et al., 2015).

Besides, the tableware's color and materials also represent relevant parameters for estimating food intake (Shankar, Levitan & Spence, 2010; Piqueras-Fiszman & Spence, 2011). Color influences an individual's perception of flavor intensity, sweetness, pleasantness and acceptability (Clydesdale, 2009). For instance, respondents in two studies (Genschow, Reutner & Wänke, 2012) consumed less food and beverages served in red plate/cup than in blue/white dishware. Another study (Piqueras-Fiszman et al., 2012) revealed that people perceived strawberry mousse to be much sweeter when it was served on a white plate, as compared to it being served on a black plate.

Finally, previous research (Kuo & Lin, 2019; Wansink & Kim, 2005; García-Segovia, Harrington & Seo, 2015) demonstrates that dishware size largely influences food intake. Namely, a larger container increases the amount consumed. Even though this notion has been investigated at length with adults, it has been recently proven to be true with children (Reale et al., 2019). Surprisingly, in the case of cutlery size, it was revealed that the use of a smaller fork led to a larger food intake when compared to food intake with a big fork (Zainol, Ariffin & Rozali, 2018).

METHODS

The analytical tools used when conducting research with children usually differ to those employed in investigation with adult subjects (Harvey & Lareau, 2020); the ethnographic approach demonstrated to be one of the most suitable methods with younger subjects (Eder & Corsaro, 1999). As an ethnographic research method, observation has been used in social studies for a long time. Its main advantage is that it provides the

possibility for researchers to examine individuals in their natural surroundings in order to understand the investigated subject from their perspective (Baker, 2006). Watson (2011, p. 204) concludes that the operations of some organizations can be understood only by closeobservational research, which is in the heart of the ethnographic method.
The same notion is echoed by further studies (e.g. Bass & Milosevic,
2016), which cite that the observation of practices, coupled with interviews and archival data, provide powerful insights into practice-based
and interaction-based behavior.

Observation and visual research methods have advantages over
other methods in investigating food behavior (Ocampo, Marshall, Wellton & Jonsson, 2021), particularly regarding children's food consumption
(Boschini et al., 2020; Biltoft-Jensen, Holmgaard Nielsen, Hess Ygil,
Christensen, & Fagt, 2018; Salazar, Feenstra & Ohmart, 2008). This
study adopts the protocol of Köngäs & Määttä (2021), specifically designed for the performance of ethnographic studies with children, consisting of four stages: 1) acquiring the material, 2) assuming the role of a researcher, 3) reaching the child's voice, and 4) describing the results to
open up the world of children.

In order to conduct the first phase, we visited four schools in Belgrade over a period of two weeks (one week in autumn, and the other in
spring). The investigated schools are:

- Dositej Obradović (municipality of Voždovac);
- Ljuba Nenadović (municipality of Čukarica);
- Pavle Savić (municipality of Zvezdara);
- Gavrilo Princip (municipality of Zemun).

Data collection consisted of taking detailed photos of the serving
environment during visits. Any required, additional images were collected after these visits. Overall, we took and classified 205 pictures. Moreover, semi-structured interviews were performed with cooks and serving
staff, in order to better understand certain practices. Due to the general
ethical directives of performing research with children, they have not
been addressed directly by the investigators.

Subsequent steps consisted of analyzing the visual materials and
drawing pertinent conclusions. In order to comprehend the observed phenomenon and analyze the corresponding results, we followed the directions developed by Sobal & Wansink (2007) and Salazar, Feenstra &
Ohmart (2008). The aspects considered are provided in Table 1.

Table 1. Selected Microscale - Scapes Influencing Food Intake

Scale	Scape Example	Definition
Room	Kitchenscape	View and/or appearance of a room or bounded setting where food is consumed
Furniture	Tablescape	View and/or appearance of a piece of furniture or surface from which food is consumed
Container	Platescape	View and/or appearance of a container from which food is consumed
Object	Foodscape	View and/or appearance of an edible item that will be consumed

Source: Sobal, J., & Wansink, B. (2007). Kitchenscapes, tablescapes, platescapes, and foodscapes: Influences of microscale built environments on food intake. Environment and Behavior, 39(1), 124-142.

Given that the foodscape is mostly beyond the control of schools, it was not investigated in this study.

RESULTS AND DISCUSSION

Descriptions of the Eating Environment and Serving Practices in Schools

In the primary school (PS) Dositej Obradović, lunch is prepared for 80 children every day, no matter how many children come to lunch. Meal portions are standardized by content and quantity. Two days a week, children can choose alternative dish components - for example, if a child does not like potato salad, an alternative is rice, or if a child does not like macaroni with cheese, he/she can eat sweet macaroni. Lunch is served on trays, with the exception of soup, which is placed on the tables at the beginning of the meal. After eating the soup, the children go to a stand where they can pick up the main course. They carry the course to the table and eat it. If someone wants more food, he/she can come to the cooks and ask for another portion of the course. Children usually form habits at home, and if they do not eat soup at home, they will not eat it in school either.

PS Ljuba Nenadović applies a somewhat different practice. Lunch is prepared for a registered number of children. The cook prepares a large quantity of food, and divides this quantity into approximately equal portions for all children present. There is no alternative meal. Special meals are prepared for two children with diabetes and a rare blood disease. The process of serving lunch consists of first setting the soup on the tables (if soup is on the menu), together with bread and salad. On each table, bread and salad are served in small baskets for several children to share. The children usually do not eat a lot of the bread or the salad. The children often do not like soup, so they immediately return it or eat only half of their

portion of soup. After the soup, the children go to a large table where they can pick up the main course. They carry the course to the table and eat it. If someone wants more food, he/she can come to the cooks and ask for another portion of the course. After the main course, they go to a large table again to pick up dessert.

In PS Pavle Savić, the cooks have a precise norm per portion (for example, 200 g of macaroni are served per portion). Thus, they multiply the number of children registered for lunch on a given day by portion size to calculate the total quantity of food that should be prepared. There is only one dish for lunch; hence, the children cannot choose an alternative dish. The entire meal is served by the cooks. Soup is served first, after which the cooks serve the main course with bread and salad. At the end of lunch, they provide the children with dessert (cake or fruit).

In PS Gavrilo Princip, lunch is prepared daily for 142 children. Meal portions are standardized by content and quantity. There is only one dish for lunch; therefore, the children cannot choose an alternative dish. However, one child has diabetes, so his portion of the meal is adjusted (he does not get cake for dessert, he gets fruit). Also, if someone fasts for religious reasons, they are served a different type of meal. The serving practice consists of the cooks setting the soup (if it is on the menu) and the main course, with bread and salad, on the tables before the beginning of lunch. Dessert (cookies or fruit) is served on standard plates, placed separately, so one plate belongs to one class.

Observed Microscale Scapes

The first determinant considered was the kitchenscape, representing the location in which the food is made and ingested. It can be observed in picture no. 1 that the eating facilities in PS Gavrilo Princip are much more child-friendly than those in PS Ljuba Nenadović. In the former, the tables are covered with colorful, cartoon-inspired tablecloths, while the latter has brown, uncovered and unappealing tables. Even though the furniture size in both schools is adjusted to accommodate chil-

Picture 1: PS Gavrilo Princip vs. PS Ljuba Nenadović - dining rooms

dren, the furnishings look more attractive in the case of Gavrilo Princip. The walls are not decorated with healthy food murals or posters in either school, although, in Gavrilo Princip, the pictures on the wall have children-related themes. For hygienic reasons and the children's safety, the floors are better in Ljuba Nenadović, because laminate can be quickly and efficiently cleaned up. Moreover, the dining room in Ljuba Nenadović is quite spacious, with large passages between the rows of tables, which enable the children to easily navigate the space with food. Still, it can influence their smaller food intake.

Exhibits 2 and 3 demonstrate two opposing storage strategies, reflecting two different types of procurement. While the cooks in PS Pavle Savić order the food needed from their suppliers every day, in PS Gavrilo Princip, the deliveries are less frequent. This practice is observable because both fresh and frozen vegetables are present in Gavrilo Princip. However, a large amount of vegetables in jars (pickle) in PS Pavle Savić probably implies that it is more convenient for the cooks to serve pre-prepared salad than to prepare fresh salad themselves. In accordance with the observation in literature (Chandon & Wansink, 2002), PS Gavrilo Princip, with a larger quantity of stored items, prepares the same number of meals every day (142), no matter how many children are expected to attend lunch. PS Pavle Savić, with a more modest quantity of stored items, prepares a limited number of meals meant only for those children who registered for lunch on a given day.

Picture 2. PS Pavle Savić - storage facilities

Picture 3. PS Gavrilo Princip - storage facilities

In the following stage of our analysis, we turn our attention to tablescapes, or the appearance of the tables on which the food is served and consumed. As previously cited, in the school context, it is especially relevant whether the food is served on trays or whether it is served on the tables. Even though the soup is served on the tables in PS Dositej Obradović (picture 4), according to the cooks, children usually do not like this type of food, and 10-15% of them immediately return it and go and stand in line to get the main course on a tray. This finding contradicts the results of García-Segovia, Harrington and Seo (2015).

Picture 4. Tray with a main course and soup set on the table in PS Dositej Obradović

Another factor affecting intake quantity is the proximity of food to the served person (Musher-Eizenman et al., 2010; Wansink, Painter & Lee, 2006). In picture no. 5, we can observe a similar distance between the seats and all food types in the upper two cases, while in the bottom two cases, bread and salad are not equally distant from all children around

Picture 5. Table settings in four schools

the table. It can be assumed that more bread will be consumed by the children closer to the bread trays, and that more salad will be consumed by the children closer to the salad bowls.

In all examples, we can see wooden chairs and tables, mostly in unattractive shades of brown. While this helps make surface cleaning easier and stains less visible, it does not improve the children's enjoyment and comfort in the ambient.

As explained in the descriptive analysis, three out of the four investigated schools (all but Pavle Savić) use buffet arrangements to serve some meal parts, usually dessert. Previous experiments revealed that, when food is clearly organized into recognizable patterns in a tablescape, people take less for themselves than when food is presented in a disorganized fashion (Kahn & Wansink, 2004; Fagerberg et al. 2019).

In picture no. 6, a dessert arrangement in PS Ljuba Nenadović is depicted. It should be noted that the cakes are accompanied by juiceboxes which are arranged behind the tray with the cakes and are, thus, less accessible to the children (red circle in the left-hand picture). In contrast, fruit (bananas) is served with water, poured into plastic cups and made readily available to the children (red circle in the right-hand picture). The middle picture shows that the dining ambient is enriched with healthy food-related posters containing written recommendations for food consumption (red circle in the middle picture), such as: a lot of water should be drunk, each meal should be followed by a brief 10-15 min walk, food should be enjoyed and eaten in a relaxed atmosphere, etc.

Picture 6. Dessert serving in PS Ljuba Nenadović

Unlike the Ljuba Nenadović School's motivating ambiance, a less appealing dessert arrangement can be found in PS Gavrilo Princip (picture 7). Cookies are simply placed on plates and the floor of the dining room is colored in grey. Given that it was Christmas time when the study was conducted, the surface was decorated with some winter-themed greeting cards. Thus, it can be concluded that dessert can be served in a more attractive manner.

Picture 7. Dessert serving in PS Gavrilo Princip

Food intake is also dependent on the social interaction during the meal. In picture no. 5, it can be observed that all schools stimulate children's interactions during meals. This practice is essential for food intake since the ratings of overall acceptability for foods are at the lowest level for children – i.e., acceptability increases with age (King et al., 2007), but a group can influence an individual to try a new type of food or eat something that he/she does not particularly like (Bell & Pliner, 2003).

The final element that needed to be examined was the platescape, embodying the aggregation of the perceptible attributes of a particular plate or similar food container. Studies consistently indicate that people tend to eat almost a whole meal when they determine the portion size by themselves – i.e. they eat the entire portion that they put on their plates (Sobal & Wansink, 2007). However, this strategy cannot be applied to children's consumption of food, given that it is questionable whether they would serve themselves all available food items, and in the quantities necessary for their balanced diet and healthy growth. It is more likely that they would exaggerate with the foods they prefer while avoiding the foods they do not like. The evidence for such a conclusion is provided in picture no. 8, showing the leftovers of two types of food that the children could take freely. In relation to the cakes, there is almost no waste, while the apples and pears are mostly half eaten and thrown away without being consumed fully.

Picture 8. Food waste of fruits (apples and pears) and cakes

Furthermore, the color and materials of the crockery are also significant parameters for assessing food consumption (Shankar, Levitan & Spence, 2010; Piqueras-Fiszman & Spence, 2011). In pictures 6 and 8, it can be observed that fruit in PS Ljuba Nenadović is served in green and blue baskets, which are associated with healthiness. Moreover, it is the only school which serves food on the more appealing white plates (picture no. 5), rather than on metal dishware.

Picture 9. The examples of good practices with dishware in Serbian schools

Concerning materials, Piqueras-Fiszman and Spence (2011) revealed that respondents perceived yoghurt to be of a higher quality and to taste better when tasted with a stainless steel spoon than with a metallic plastic spoon. Zainol, Ariffin and Rozali (2018) support the relevance of plateware materials too. Even though schools cannot significantly affect the plateware color and material on a large scale (e.g., for all plates and cups), some larger dishware pieces can be purchased to enhance the children's school meal experience (picture 9). It is also interesting to note that the only food served in paper containers (cups) throughout our ten day visit to the schools was vanilla pudding in PS Ljuba Nenadović. The pudding waste (picture 10) was the greatest dessert waste in that school that week, compared to the leftovers of cakes and fruits that were served on other weekdays.

Picture 10. Leftovers of pudding served in paper cups

The pictures provided show that all schools serve food in plates whose size is adjusted to children (smaller than usually used in households) and provide cutlery of a regular size. In addition, the shape of dishware has an impact on food intake. For instance, in one study (Clicer et al., 2018), consumers drank less and more slowly from short and wide glasses than from tall and slender ones. This observation contrasts with the findings of other studies (Lawless et al., 2003; Wansink & Van Ittersum, 2005), which concluded that wider glasses led to greater consumption. Moreover, round plates are preferred to square ones (Zainol, Ariffin & Rozali, 2018), and can thus lead to a higher food intake.

CONCLUSIONS AND LIMITATIONS

This study aimed to investigate the environmental attributes in schools that might affect children's food intake. Keeping in mind the economic and human resources, time and other limitations, we have prepared a set of recommendations we assume would be feasible in existing circumstances. Adopting some of them should improve children's experience with food, and lead to healthier habits in food consumption and a more balanced food intake. With the intensification of the competitive struggle between public and private schools in Belgrade and Serbia, satisfaction with serving practices and its effects on children's eating habits and perception of food quality could be elements of differentiation in the market of educational institutions. This has become a crucial point since children up to the age of ten spend more and more time in school, using extended stays. Our study draws several conclusions pertinent to policy makers and school managers, as explained in the forthcoming paragraphs.

Our research revealed that kitchen staff should insist on the freshness of the food, and avoid storing vast quantities of some food items while encouraging more frequent supply deliveries. Accordingly, there are benefits of purchasing food in smaller packages (e.g., in bottles rather than in gallons; in bags of 1 kg rather than bags of 5 kg) related to storing, freshness, costs and waste.

In terms of decoration, the use of carpets in the dining room should be avoided, while laminate is preferred. If possible, furniture should be re-arranged, allowing children to sit at the table in groups of four, so they can easily interact with each other, and so all four of them are equally distant from every food item served at the table. Moreover, it is highly important to decorate dining spaces in schools with posters that promote children's healthy diets. Children can draw these pictures in classrooms and discuss the various aspects of healthy eating with teachers. The drawings should be exhibited in the dining room during one semester.

The procurement of children-friendly table covers should be conducted. Alternatively, each class can buy one oilcloth and decorate it with

colorful food elements during art classes, before donating it to the kitchen to have lunch on it. In that way, the dining room will become more cheerful and enjoyable for the children, with minimum investment. Also, cooks should dedicate more time to food decoration when it comes to the foods that children do not like. In order to make them more attractive, these food items may be garnished with some sort of food that children prefer.

Food in buffets should be organized into recognizable patterns, enabling children to mix and match different sorts of food, and to express their creativity and adventurous spirit. Children should not be constantly scolded for spilling food, given that this occurs due to their still developing motor abilities. Food buffets should be avoided when serving desserts, but should be used as salad and/or soup bars. New bowls, in cheerful colors and of a smaller size, should be purchased to make soup more appealing. In fact, all types of food identified as the least preferred by children (e.g., lentils) should be served in these new bowls to encourage children to eat more of these food items. Glasses of water should be available and easily accessible throughout the meal. They should be of an appropriate size for children – about 1 deciliter.

The presented research has several limitations. First of all, it was conducted in only four schools and in only one city (Belgrade). The verification of these findings requires the observation of a larger number of schools throughout Serbia. In addition, all of the schools visited during this research belong to the public sector. Private schools, which are becoming more widespread, especially in larger cities in Serbia, should also be investigated. Satisfaction with the way food is served was measured by indirect methods (analysis of children's behavior, reviewing photographs, visual representations of leftover food, etc.), while future studies should adopt more direct measures, such as interviewing children and parents, employees in school restaurants and the management of the observed schools. Additional factors that affect school-age children's satisfaction, and the decisions regarding the choice of school and the selection of all-day school options should be addressed by further research too. Finally, the cultural context should be accounted for, given that research in multinational and multicultural environments would give a better insight into children's behavior when it comes to nutrition in school restaurants and satisfaction with food preparation and serving.

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УТИЦАЈ ПРАКСЕ ПОСЛУЖИВАЊА НА ДЕЧЈУ ИСХРАНУ У ШКОЛАМА

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Резиме

Већина истраживања која се баве исхраном деце узимају у обзир величину оброка, врсту хране и друге нутритивне аспекте. Важност декорације оброка за децу препозната је у неколико студија, али још увек постоји недостатак студија које истражују релевантност контекста послуживања хране - праксе и окружења, посебно на српском тржишту. Дизајнирање „пејзажа сервирања“ може утицати на унос хране, а његови главни амбијентални делови су: кухињски пејзаж, који утиче на унос количине хране путем доступности, разноврсности и видљивости хране, стони пејзаж, који утиче на разноликост, обиље и приступачност, и пејзажи посуђа на којима се сервира, који утичу на величину порција и/или паковања, распоред

и тип прибора. Креатори политике из неколико земаља ЕУ разумели су позитиван утицај уређених објеката прилагођених деци за сервирање школског оброка на њихове здравије одабире хране и конзумацију.

Циљ овог рада био је да испита факторе окружења у школским кантинама који утичу на дечији унос хране током школских оброка. Истраживање је спроведено у четири београдске основне школе: Доситеј Обрадовић (општина Вождовац), Љуба Ненадовић (општина Чукарица), Павле Савић (општина Звездара) и Гаврило Принцип (општина Земун). Коришћен је метод теренских посета током две недеље служења ручкова у школским кантинама, као и анализа садржаја слика прикупљених том приликом. Анализом 205 фотографија, изведени су релевантни закључци.

Резултати студије показали су да распоред столова, уређење мензи, начин сервирања хране, величина порција и декорација посуђа у ком се деци сервира храна имају утицај на дечију спремност да неку храну пробају, као и на количину хране коју ће конзумирати. Имајући у виду економска, кадровска, временска и друга ограничења, на крају рада изложен је низ препорука за које аутори сматрају да би их било изводљиво увести у постојећим околностима. Усвајање неких од ових препорука требало би да побољша дечије искуство са храном у школи и да доведе до формирања здравијих навика у њиховој исхрани и балансираном уносу хране. Услед заоштравања конкурентске борбе између јавних и приватних школа у Београду и Србији, задовољство услуживањем и ефекти праксе услуживања на навике у исхрани деце и перцепцију квалитета хране могли би бити елементи диференцијације на тржишту образовних установа. То постаје кључна тачка јер деца до 10 година старости проводе све више времена у школи користећи продужени боравак.

THE NEXUS BETWEEN ECONOMIC GROWTH, BANKING SECTOR DEPTH, AND FOREIGN DIRECT INVESTMENT IN SELECT CENTRAL AND EASTERN EUROPEAN COUNTRIES

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Abstract

The goal of this research is to consider the influences of foreign direct investment and banking sector depth on economic growth, by analysing these factors in six Central and Eastern European countries (Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania) in the period between 2000 and 2018. Cointegration among the variables was confirmed using the Westerlund panel cointegration test. The outcomes of the panel autoregressive distributed lag model confirmed the positive influence of foreign direct investment and the negative impact of the banking sector depth on the economic growth in the observed countries. The results of the short-term analysis revealed the insignificant influence of the banking sector depth and the notable positive influence of foreign direct investment on economic growth.

Key words: banking sector depth, economic growth, foreign direct investment, panel analysis

ПОВЕЗАНОСТ ЕКОНОМСКОГ РАСТА, ДУБИНЕ БАНКАРСКОГ СЕКТОРА И СТРАНИХ ДИРЕКТНИХ ИНВЕСТИЦИЈА У ОДАБРАНИМ ЗЕМЉАМА ЦЕНТРАЛНЕ И ИСТОЧНЕ ЕВРОПЕ

Апстракт

Циљ истраживања је сагледавање утицаја страних директних инвестиција и дубине банкарског сектора на економски раст на узорку шест земаља Централне и Источне Европе (Бугарске, Хрватске, Чешке, Мађарске, Пољске и Румуније) у пери-

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оду од 2000. до 2018. године. Коинтеграција међу варијаблама потврђена је употребом *Westerlund* панел коинтеграционог теста. Резултати панел ауторегресивног модела са дистрибутивним временским помаком потврдили су позитиван утицај страних директних инвестиција и негативан утицај дубине банкарског сектора на економски раст у анализираним земљама. Резултати краткорочног аспекта анализе открили су безначајан утицај дубине банкарског сектора и значајан позитиван утицај страних директних инвестиција на економски раст.

Кључне речи: дубина банкарског сектора, економски раст, стране директне
                   инвестиције, панел анализа

INTRODUCTION

Within endogenous theories of growth, which strive to illustrate whence the economy can generate growth even if there is no exogenous technological progress, it is considered that trade and finance can be important determinants impacting production, since their influence is not only temporary but also produces a permanent change in the growth path (Kawa, Wajda-Lichy, Fijorek, & Denkowska, 2020). As essential elements of international cooperation, inflows of foreign investment carry unequivocal advantages for the country through boosting new work engagements, increasing productiveness, the acquisition of new technologies and knowledge, the diffusion of innovations, and other types of technological changes (Mousumi, 2013). The degree to which developing countries can acquire and implement new technologies and designs arising from developed countries is the basis of their growth rate, and the channel through which countries can take advantage of the adoption of new technologies is a foreign direct investment (FDI) (Hermes & Lensink, 2003). Inflows of foreign direct investment were regarded as an essential part of the catching-up process of Central and Eastern European countries (CEEC) by the old member states of the European Union, due to technical progress through the efficiency of spillovers (Jimborean & Kelber, 2017). In addition to the wider macroeconomic and institutional perspectives, the spillover effect for the host country relies on the capacity of the developmental level of the internal financial sector. The financial sector can set to what degree foreign investors will be able to transform their capital into efficient investments in the country of destination, additionally increasing the range of spillovers of new technological knowledge to the domestic companies (Sghaier & Abida, 2013). The scope of the improvement of financial institutions might be an essential determinant in deciding if external companies function without affecting the host economy, or whether they enhance the spurs of technology transfers (Nageri, Nageri, & Amin, 2015).

Most of the studies associating FDI and the financial and economic development of the country emphasize that the outcomes of FDI on economic growth rely upon the absorptive capacity limit of countries, includ-

ing the improvement of the national financial system. Choong and Lim (2009) have shown that, in addition to direct contributions, FDI increases the economic growth of the country through its interaction with financial development. Exploring the relationship between FDI, economic growth, and financial development, Alfaro, Chanda, Kalemli-Ozcan, and Sayek, (2004) affirm that countries with properly grown financial markets can utilize FDI more efficiently and can produce tremendously better conditions. Additionally, the authors indicate that the nexus uniting FDI and economic growth is causal, and that FDI boosts growth through financial markets. Pradhan, Arvin, Bahmani, and Hall (2019) reached similar conclusions using a sample of G-20 countries. In G-20 countries, a well-developed financial system is essential for higher FDI inflows, and vice versa. Capital for the additional stimulation of FDI provides a well-developed financial market, consequently achieving a higher economic growth of countries. That implies that economic growth is stimulated through both FDI inflows and financial development. On the other hand, Acquah and Ibrahim (2019) conclude that the financial sector minimizes the favorable impact of FDI on economic growth. The conclusions of the examination, based on a two-system generalized method of moments, show that a financial system is underdeveloped because funds are distributed for unproductive purposes, or because distributed resources are invested in risky projects which harm economic growth. Therefore, the financial system does not encourage FDI inflows. Choong (2011) finds confirmation that a well-developed financial system is a significant requirement for FDI to have a positive impact on economic growth in a panel of 95 advanced and emerging countries in the period between 1983 and 2006. Thus, a more appropriate inference than "higher FDI inflows can cause higher growth" is "more FDI inflows with better finance can lead to higher growth," as Choong (2011, p. 832) concludes. In fact, the presented lack of formal clarity on the influence of FDI and financial development on economic growth is the central motivation for this research.

As per the above, this article intends to examine the association between financial development, economic growth, and FDI in six CEECs, which can be classified as the European Union's new member states. This article discusses the financial development construct on bank-based indicators, which mirror the depth of the banking sector. The reason this form is used for determining financial development is that capital markets in the considered countries are not sufficiently developed, as well as the fact that financial systems are bank-based because approximately 85% of the assets of the financial sector are bank assets (Égert, Backé, & Zumer, 2016). Furthermore, the quantity of accessible measurements for capital market indicators is inadequate to form sufficiently long time series. A step forward in the literature so far is reflected in the use of a composite index of financial development based on banks consisting of four indica-

tors, especially bearing in mind the shortcomings and inappropriateness of the use of one component as a representative of the development of the whole financial sector. Foreign direct investment and economic growth are represented by the net inflows of foreign direct investment and gross domestic product per capita, respectively. The main aim of this examination is to investigate the long-term and short-term impact of FDI and the banking sector depth on economic growth in six CEECs in the period between 2000 and 2018. The foremost contribution of this research is to empirically expose the effects of the influence of FDI and banking sector depth on the economic growth in select CEECs, in a manner that could informatively complement the existing literature. For the realization of the stated aim, the paper utilizes the error-correction–based panel cointegration tests introduced by Westerlund (2007), which notably exceed standard residual-based tests in terms of robustness to cross-sectional dependence. Furthermore, the long-term and short-term relations are verified through the Panel Auto-Regressive Distributed Lag error correction model with the Pooled Mean Group estimators.

The rest of the paper is structured as follows. The subsequent section explains the methodology and the data indicators of banking sector depth, foreign direct investment, and economic growth. The principal statistical outcomes are stated in the third section. In the final section, the relevant conclusions and proposals obtained from the examination are presented.

DATA AND METHODOLOGY

For the examination of the nexus among economic growth, banking sector depth, and foreign direct investment, the analysis utilized annual data, noted in the period between 2000 and 2018. The sample included in the examination consists of six new European Union (EU) member states that do not use the euro as official currency - Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania. One of the reasons for the selection of these former transition countries is the fact that, by joining the European Union, these countries became more engaging areas for foreign investment since they have had to adopt various regulations of the EU, which provided them with greater credibility among investors. Moreover, in recent decades, the largest recipients of foreign direct investment have been transition economies, due to market liberalization, natural resources, and low labor costs (Andrasic, Mirovic, & Kalas, 2019). The selection of these countries was additionally conditioned by data availability.

Since the main objective of this article is to scrutinize the impacts of FDI and banking sector depth on economic growth, the following variables are used in the analysis:

- Gross Domestic Product Per Capita - GDPPC variable;
- Foreign Direct Investment – FDI variable; and
- Composite Index of Banking Sector Depth – CIBS variable.

The World Bank database served as the source of data for the descriptions of the variables. Economic growth is measured utilizing the annual percentage growth rate of gross domestic product per capita, based on constant local currency (aggregates are based on constant 2010 U.S. dollars). The general appearance of estimating gross domestic product per capita, not in expressions of the total population but of the working-age population, originates from the theory of economic growth, which denotes that the working-age population is nearer to the labor input of the production function than the total population (Neuhaus, 2006). Besides, gross domestic product per capita is a standard measure of economic growth in finance-growth research (Stolbov, 2016). Foreign direct investment is presented as the sum of equity capital, the reinvestment of earnings, other long-term capital, and short-term capital. Variable FDI records net investment inflows, which are divided by GDP. The FDI net inflows are commonly used in the research of the association between FDI and economic growth, as well as between the indicators of financial development and FDI (Acquah et al., 2019; (Amoh, Abdallah, & Fosu, 2019; Dellis, 2019; Jimborean et al., 2017; Lee & Chang, 2009).

The composite index of banking sector depth is created from several indicators by utilizing Principal Component Analysis (PCA). The reason for utilizing the CIBS is the impossibility of adequately betokening banking sector depth by adopting a single variable, as shown in previous studies (Beck, Levine, & Loayza, 2000; Choong, 2011; Levine, Loayza, & Beck, 2000). In this examination, four variables are used as representations of banking sector depth. Domestic credit to the private sector by banks, domestic credit to the private sector by financial corporations, claims on the central government, and broad money supply are used to construct a composite index of banking sector depth using PCA. As Aluko and Ajayi (2018) point out, PCA includes the conversion of several correlated assemblages of variables into a lesser number of uncorrelated variables. PCA moderates an assemblage of examined variables into principal components that maintain the utmost information from the initial set of variables. Procedural details are explained by Pradhan, Arvin, Norman, & Hall, (2014).

Measures of central tendency, measures of variability, and the results of correlation analysis are shown in Table 1. Cross-sectional dependence often leads to the lack of a normal distribution of data, as indicated by the Jarque-Bera statistics in Table 1 for all series except for the CIBS series. Nevertheless, by utilizing appropriate panel tests suitable for application in cases of cross-sectional dependence, this issue can be controlled appropriately. The variables are not highly correlated with each other, therefore utilizing variables in one regression equation will not lead to a problem of multicollinearity.

Table 1. Descriptive statistics and Correlation matrix of the variables

	GDPPC	FDI	CIBS
Mean	3.540289	5.591200	-1.75E-08
Median	4.112087	3.701897	0.1331185
Maximum	11.14421	54.64873	1.750006
Minimum	-7.262149	-41.50820	-2.248833
St. Dev.	3.165445	10.17489	1.000011
Skewness	-0.820510	1.641444	-0.229355
Kurtosis	4.780328	15.68413	2.313535
Jarque-Bera	27.84695	815.4070	3.237834
Probability	0.000001	0.000000	0.198113
Obs.	114	114	114
GDPPC	1		
FDI	0.0730	1	
CIBS	-0.4537	0.0460	1

Source: Authors' calculations

Panel datasets usually manifest cross-sectional dependence, which relies on the diverse aspects of the cross-sectional dependence itself, as well as the volume of the correlations over cross-sections, as De Hoyos and Sarafidis (2006) point out. Because the appearance of cross-sectional dependence causes difficulties in testing the stationarity of the data (Shariff & Hamzah, 2015), examining cross-sectional dependence is an essential matter, required to determine proper tests for examining the order of data integration, and for the consequential assessment of the established model. Hence, the analysis of the cross-sectional dependency is performed utilizing the Breusch–Pagan LM test and Pesaran-scaled LM test. The Lagrange multiplier exhibited by Breusch and Pagan (1980) is acceptable for a panel with N less than T, which is the character of the panel dataset in the research (N=6 T=19). LM statistics, on which the test is established, as Baltagi, Feng, and Kao (2012, p.165) point out is:

$$LM = \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} T_{ij} \hat{p}_{ij}^2 \rightarrow X^2 \frac{N(N-1)}{2} \tag{1}$$

Baltagi et al. (2012, p. 165) further point out that the residual correlation coefficient ($\hat{p}_{ij}$) also appears in the Pesaran-scaled LM test, which is specified as follows:

$$LM_{pesaran} = \sqrt{\frac{1}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} (T_{ij} \hat{p}_{ij}^2 - 1) \rightarrow N(0,1) \tag{2}$$

Without examining the cross-sectional dependency while carrying a unit root test, the assessments may be biased. The application of unit root tests, which symbolize the independence of cross-sectional units,

could lead to such biases. Consequently, a large portion of literature presents a confirmation of the co-movements of economic variables over the cross-section units, which led to the development of second-generation tests based on the premise of cross-sectional dependence in the unit root hypothesis (Das, 2019). In this regard, two second-generation unit root tests are utilized in this article: the Cross-sectionally ADF (CADF) test and the Cross-sectional augmented IPS (CIPS) test presented by Pesaran (2007). Pesaran (2007) utilized cross-sectional averages of lagged levels and first differences of the i-th cross-section in the panel in order to augment the conventional DF regression model:

$$\Delta Y_{it} = \alpha_i + \beta_i Y_{it-1} + \gamma_i \overline{Y}_{i-1} + \phi_i \Delta \overline{Y}_t + \varepsilon_{it} \tag{3}$$

The average of individual CADF statistics represents the CIPS statistics:

$$CIPS(N,T) = N^{-1} \sum_{i=1}^{N} t_i(N,T) \tag{4}$$

where $t_i(N,T)$ is the cross-sectionally augmented Dickey-Fuller statistic for the i-th cross- section unit.

The article further utilizes the Westerlund (2007) error-correction–based panel cointegration tests. Two group statistics (Gt, Ga) test the alternative hypothesis that there is at least one unit that is cointegrated, while the two panel statistics (Pt, Pa) test the alternative hypothesis that the whole panel is cointegrated. The test was conducted via the xtwest command in Stata, taking into account cross-sectional dependence by applying the bootstrap approach. The complete statistics behind tests and procedural details are presented by Persyn and Westerlund (2008). If the cointegration is confirmed based on the Westerlund test, the subsequent step is to estimate the Panel Auto-Regressive Distributed Lag (ARDL) error correction model with the Mean Group (MG) or the Pooled Mean Group (PMG) estimators. As a solution to the heterogeneity bias shown by heterogeneous slopes in standard panel estimates (fixed and random effects), two different estimators (MG and PMG) were introduced by Pesaran and Smith (1995), and Pesaran, Shin, and Smith (1999). The Dynamic Fixed Effect estimator will not be checked because the DFE does not consider heterogeneous slope coefficients (Ehigiamusoe, Lean, & Lee, 2018). The fundamental difference between MG and PMG is that the MG estimator supports maximum heterogeneity since it allows intercepts and coefficients to differ unobstructedly across countries, while PMG is consonant under the postulate of long-run slope homogeneity. If the long-run homogeneity restrictions are accurate, MG estimations will be ineffective, and a PMG estimator will be imposed as more suitable, which will be checked by the Hausman test.

RESULTS AND DISCUSSION

The basis of the necessity for testing cross-sectional dependence lies in the fact that even if there is a certain shock (interior or outer) that originates from one country, that shock may not influence other countries at a similar level regardless of whether they have formal EU economic policies (Sönmez & Sağlam, 2017). Table 2 contains the outcomes of the cross-sectional dependence and the unit root tests. Consistent with the Breusch–Pagan LM and Pesaran-scaled LM tests, the cross-sectional dependence can be confirmed. The results affirm the exceptionally incorporated economies of the examined countries, indicating that spatial spillover consequences will become more probable. Therefore when a shock happens in one country, it will likewise influence the other countries. The tests' outcomes determine the selection of the second generation unit root tests, which take into account cross-sectional dependence. According to the CADF test, all variables, except the composite index of banking sector depth, are not stationary at the level, while the results of the CIPS test show that the variables which represent economic growth and foreign direct investment are stationary at level. Nevertheless, after the first difference, each of the nonstationary variables becomes stationary. The appearance of different levels of stationarity, as well as the occurrence of cross-sectional dependence, sustain the utilization of the Westerlund cointegration test and the panel ARDL model.

Table 2. Cross-sectional dependence and unit root tests results

Variable	GDPPC	FDI	CIBS
Breusch–Pagan LM	120.8042	64.40385	162.3476
	(0.0000)	(0.0000)	(0.0000)
Pesaran-scaled LM	19.31712	9.019867	26.90186
	(0.0000)	(0.0000)	(0.0000)
CADF (level)	-2.193	-1.899	-2.406[*]
CADF (first difference)	-3.910[*]	-3.294[*]	-3.958[*]
CIPS (level)	-3.060[*]	-2.511[*]	-1.688
CIPS (first difference)	-5.091[*]	-4.388[*]	-2.371[*]

Notes: Figures in the parenthesis are p-values,
* symbolizes the rejection of the null hypothesis of unit root
Source: Authors' calculations

The outcomes of the Westerlund error-correction–based panel cointegration tests with robust p-values are detailed in Table 3. Circumventing the redundant parameterization, this research holds a small number of lags and leads, and a shorter kernel width, since the outcomes of the test, in examination with the small dataset, can be sensitive to the determination of these parameters (Demetriades & James, 2011; Westerlund, 2007). In the examination, the Bartlett kernel window width is 2, and

a maximum lag length of 1 and the lead length of 1 are chosen according to the Akaike Information Criterion (AIC). The null hypothesis of no cointegration can be rejected at a 1% significance level, according to the robust p-value of Gt, Pt and Pa statistics, which implicate the equilibrium association amongst the variables. Considering the panel tests (Pt, Pa), which rejected the null hypothesis, it can be inferred that the whole panel is cointegrated. More precisely, results designate the appearance of the cointegration relation between economic growth, foreign direct investment, and banking sector depth in the complete sample of all countries.

Table 3. The Westerlund cointegration test results

Westerlund's Test	Value	Z-value	P-value	Robust P-value
Gt	-3.891	-4.936	0.000	0.000
Ga	-5.166	1.546	0.939	0.300
Pt	-6.222	-1.962	0.025	0.000
Pa	-7.515	-0.723	0.235	0.000

Source: Authors' calculations

Table 4 presents the information of the whole panel and includes long-run and short-run coefficients, the outcomes of the Hausman test, and the error correction term (ECT). The long-run homogeneity restriction is not rejected according to the Hausman test. Therefore, the PMG is a more efficient model to perceive the relationship between economic growth, foreign direct investment, and banking sector depth. From the part of Table 4 which details the long-run coefficients, it can be established that a 1% increase in FDI net inflows enhances economic growth by 0.24%, while a 1% rise in banking sector depth decreases economic growth by 1.71%. From a long-term perspective, the outcomes are in line with the conclusions of Cave, Chaudhuri, and Kumbhakar (2019). Using data for 101 countries in the period between 1990 and 2014, the authors discovered a negative relationship between the development of the banking sector and economic growth. They explain the cause of their disagreement with many studies that have revealed a positive relationship between economic growth and the development of the banking sector by pointing out the fact that these studies use a single indicator of the banking sector development. As mentioned in this paper in the data presentation section, an adequate representation of the depth of the banking sector requires the usage of various indicators. Additionally, as one of the explanatory variables, the authors used net foreign direct investment and discovered a positive and statistically significant impact of the FDI in low- and middle-income countries. The result of the positive influence of FDI on economic growth is not unexpected. The financial and political integration of countries in the EU prompts investors to be more encouraging about planned reformations, institutional enrichment, and the imple-

mentation of stable economic policy, as Tang (2015) points out. Increased inflow of foreign direct investment in synergy with trade flows notably stimulates the economic growth of countries. Tang's (2015) study focuses on the question of whether higher financial market development boosted economic growth in Central and Eastern European countries in the period between 1997 an 2012. The author finds that, despite the increased growth of bank credits in CEECs, bank credit flows harm economic growth. The expanding dependence of banks in CEECs on the EU supply of bank capital can be the reason behind the negative effect, since the bank credits might not be managed for productive investments due to EU bank dominance. The bank credits utilized for uncertain investments might avert important supplies of the resources away from the productive localities of the economies. The detrimental influence of credit in the acceleration stages of the credit sequence can be the outcome of the harmful consequences of the gathering of cyclical systemic risk and overindebtedness (Iwanicz-Drozdowska, Bongini, Smaga, & Witkowski, 2018). These results of the positive influence of FDI and the negative impact of banking sector development are in line with our outcomes. However, countries may not have reached a situation where there is 'too much' finance that starts to harm economic growth when credit to the private sector encompasses 100% of GDP (Arcand, Berkes, & Panizza, 2015). For example, Grabowski and Maciejczyk-Bujnowicz (2016) reveal that the optimal level of financial depth in the Polish economy is 0.43, and beyond that level, the financial system appears to be 'too large' compared to the scope of the Polish economy. An additional boost in the level of bank credit gives rise tothe 'vanishing effect' of the influence on economic growth.

From a short-term aspect, the beneficial impact of FDI and a positive but statistically inconsequential effect of the banking sector's depth on economic growth is observed. The speed of adjustment (ECT) is negative and statistically significant, which points towards the fact that a long-term equilibrium relationship exists among economic growth, foreign direct investment, and banking sector depth. More precisely, GDPPC, FDI, and CIBS are cointegrated and moving together to long-term equilibrium. The effect of an imbalance caused by some shock is corrected by 59% every year. The ECT coefficient of 0.59 designates that there was 59% of adjustment that occurred in the previous period toward equilibrium, while 41% of disequilibrium remains, which implies that a half-time to the convergence is less than one year. Since the PMG estimator assumes the heterogeneity of short-term coefficients, the following table presents the ECT and short-term coefficients of countries.

Table 4. Pooled Mean Group Reggresion and Hausman test results

Variables	PMG (1 0 0)			
	Long-run coefficient	P-value	Short-run coefficient	P-value
FDI	0.2360107	0.003	0.303923	0.090
CIBS	-1.706607	0.000	0.182826	0.827
Error correction term			-0.5877624	0.000
Constant			1.560038	0.005
Hausman test	2.51	0.2846		

Source: Authors' calculations

As shown in Table 5, the statistically significant positive influence of foreign direct investment on economic growth in the short-run is observed only in the case of Poland and Romania, while the short-run impact of banking sector depth is not statistically significant in any of these countries. The short-term results imply that policies and strategies for luring FDI necessitate being composed with a view on the long-term aspect in order to maximize the positive projections of FDI on the prosperity of the countries (Dinh, Vo, The Vo, & Nguyen, 2019). On the other hand, having in mind the long-term negative impact and insignificant short-term impact of the development of the banking sector on economic growth, these countries necessitate sounder banking regulations that would facilitate generating significant positive impacts of banking sector development on economic growth (Tang, 2015).

Table 5. PMG short-run coefficient of the individual countries

Countries	PMG – short-run coefficient					
	FDI	P-value	CIBS	P-value	ECT	P-value
Bulgaria	0.026155	0.779	-0.12507	0.606	-1.145661	0.000
Croatia	0.206142	0.485	-2.46409	0.419	-0.6138893	0.007
The Czech Republic	-0.058645	0.720	2.365367	0.237	-0.7694635	0.000
Hungary	-0.006584	0.847	-0.77295	0.798	-0.0103361	0.957
Poland	0.606524	0.004	0.332800	0.782	-0.2493366	0.144
Romania	1.049946	0.011	2.760909	0.467	-0.7378878	0.000

Source: Authors' calculations

The dynamic stability among variables exists when the ECT coefficient is negative within the unit circle (not lower than -2) (Loayza & Ranciere, 2006). In the case of the examined countries, a negative ECT coefficient is perceived in all cases. However, the coefficient is not significant in the case of Hungary and the Republic of Poland, indicating that long-term equilibrium among the variables exists, but is insignificant for economic growth. The half-time to convergence is quite short, less than half a year in the case of Bulgaria, Croatia, Czech Republic, and Romania.

CONCLUSIONS

This paper focused on six countries of Central and Eastern Europe, which can be classified as new members of the European Union, namely Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania. By implementing annual data from the period between 2000 and 2018, the article exposes the nexus between banking sector depth, foreign direct investment, and economic growth. Banking sector depth is formed by a composite index consisting of domestic credit to the private sector by banks, domestic credit to the private sector by financial corporations, claims on the central government, and broad money supply. Foreign direct investment and economic growth are denoted by the net inflows of foreign direct investment and gross domestic product per capita, respectively. The principal aim of the analysis was to scrutinize the long-term and short-term impact of FDI and banking sector depth on economic growth. In the fulfillment of the stated aim, the long-term relation among the variables was first considered by utilizing the error-correction–based panel cointegration tests introduced by Westerlund (2007). Test outcomes established the presence of the cointegration relation between economic growth, foreign direct investment, and banking sector depth in the complete sample of countries. Further, the short-term and long-term influences of FDI and banking sector depth on economic growth were analyzed employing the PMG estimator. The long-term aspect of the examination exhibited the positive influence of FDI and the negative effect of the banking sector depth on the economic growth in the scrutinized countries. The outcomes of the short-term analysis revealed the devitalized effect of the banking sector depth and a significant positive impact of FDI on the growth. However, the short-term influence of FDI on economic growth across the panel was driven by a positive and meaningful impact only in Romania and Poland.

The principal contribution of the analysis is that it empirically exposes the repercussions of the influence of banking sector depth and foreign direct investment on economic growth in a manner that informatively complements the existing literature. Also, the conclusions of the examination may hold relevant policy suggestions. Foreign direct investment can advance the economic development forces of the host countries. Considering that banking sector development causes the net inflows of foreign direct investment, which, in turn, causes economic growth, policymakers should act to increase banking sector depth with binding financial control and banking reform. Stricter control and reform of the banking sector are essential, primarily because of the noted harmful influence of banking sector depth on economic growth, as the countries have still not reached the majority of the growth-damaging financial sector. Accordingly, restricting the augmentation of banking resource allocation to increase limitations on the lending and borrowing of the private sector is not required.

The main shortcomings of this research can also be characterized as the proposals for future examinations of the nexus between financial development, foreign direct investment, and economic performances. One of the main limitations of this paper is the fact that the data used in the research incorporates data from a period of economic crisis. Studies conducted by Law and Singh (Law & Singh, 2014), and Arcand et al. (2015), which take into account the years of crisis, reveal that more finance discourages economic growth. The stated limitations, combined with a lack of adequate data on capital markets, outline the possible imperfections of the survey, as well as important determinants for the advancement of future research.

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ПОВЕЗАНОСТ ЕКОНОМСКОГ РАСТА, ДУБИНЕ БАНКАРСКОГ СЕКТОРА И СТРАНИХ ДИРЕКТНИХ ИНВЕСТИЦИЈА У ОДАБРАНИМ ЗЕМЉАМА ЦЕНТРАЛНЕ И ИСТОЧНЕ ЕВРОПЕ

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Резиме

Рад се фокусира на шест земаља Централне и Источне Европе, које се могу класификовати као нове чланице Европске уније, а то су Бугарска, Хрватска, Чешка, Мађарска, Пољска и Румунија. Имплементацијом годишњих података из периода између 2000. и 2018. године, истраживање открива везу између дубине банкарског сектора, СДИ и економског раста. Главни циљ анализе је да се испитују дугорочни и краткорочни утицаји дубине банкарског сектора и СДИ на привредни раст. У испуњењу наведеног циља, дугорочни однос између променљивих је први размотрен коришћењем панел коинтеграционих тестова заснованих на корекцији грешака које је увео Вестерланд (2007). Резултати испитивања утврдили су присуство коинтеграционог односа између економског раста, СДИ и дубине банкарског сектора у комплетном узорку земаља. Надаље, анализирани су краткорочни и дугорочни утицаји дубине банкарског сектора и СДИ на привредни раст применом PMG проценитеља. Дугорочни аспект испитивања показао је позитиван утицај СДИ и негативан утицај дубине банкарског сектора на привредни раст у анализираним земљама. Резултати краткорочне анализе открили су девитализован ефекат дубине банкарског сектора и значајан позитиван утицај страних директних инвестиција на економски раст. Међутим, краткорочни утицај страних директних инвестиција на раст у целом панелу био је вођен позитивним и значајним утицајем само у Румунији и Пољској.

Главни допринос анализе је емпиријско излагање последица утицаја дубине банкарског сектора и директних страних инвестиција на економски раст у правцу који на поучан начин употпуњује постојећу литературу.

Закључци истражиања могу садржати и релевантне предлоге креаторима политике. СДИ могу унапредити снаге економског развоја земље домаћина. С обзиром на то да развој банкарског сектора значајно узрокује нето прилив страних директних инвестиција, што, с друге стране, узрокује економски раст, креатори политике би требало да делују у смеру повећања дубине банкарског сектора уз обавезујућу финансијску контролу и реформу банкарства. Већа контрола и реформа банкарског сектора су неопходни, првенствено због уоченог штетног утицаја дубине банкарског сектора на економски раст, јер земље још увек нису достигле већину финансијског сектора који штети расту. Сходно томе, није потребно ограничити повећање алокације банкарских средстава ради повећања ограничења кредитирања и задуживања приватног сектора.

Главни недостаци истраживања такође се могу окарактерисати као предлози за будућа испитивања везе између финансијског развоја, СДИ и економских перформанси. Једно од главних ограничења је да подаци коришћени приликом истраживања укључују податке из периода економске кризе. Студије које су спровели

Лоу и Синг (Law & Singh, 2014) и Аркон и други (2015), које узимају у обзир године кризе, откривају да више финансија обесхрабрује економски раст. Наведена ограничења, у комбинацији са недостатком адекватних података са тржишта капитала, указују на могуће несавршености истраживања, али и на важне детерминанте за напредак будућих истраживања.

THE STRUCTURAL RELATIONSHIP BETWEEN ICT AND THE DEVELOPMENT PROFILES OF EUROPEAN COUNTRIES

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Abstract

The application of information and communications technologies (ICTs) in all spheres of human activities has a significant impact on the development of each country. A better understanding of the relationship between these phenomena can contribute to the policy of a more balanced and long-term sustainable development on the national level. In this regard, the aim of the paper is to investigate the link between ICT and development profiles, taking the European countries as an example. We use several composite indexes (i.e., the ITU ICT development index, the global competitiveness index [GCI], and the Legatum prosperity index [LPI]) to investigate these countries' profiles and find a common structure among their respective relationships. We applied the partial least squares regression (PLS-R) model and included a new welfare index – the prosperity index, which integrates all the key dimensions of country development (economic, social, and environmental). Our main finding is that PLS-R models successfully extract important information on common structure vis-à-vis the observed countries' ICT and development profiles. Certain ICT indicators – namely, *Use of ICT* and *Price of ICT services* – can be considered predominant indicators, given their impact on a set of competitiveness and prosperity features within a country. These ICT indicators influence certain competitiveness attributes - *Technological readiness, Business sophistication, Institutions*, and *Innovation*, and certain prosperity attributes - *Governance, Economic quality*, and *Personal freedom* of the observed countries. These observations may be of great importance, as policy-makers can leverage them when designing the appropriate ICT and development strategies at national level.

Key words: ICT country profile, development country profile, European countries, PLS-R Methodology, national development strategy

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СТРУКТУРНА ВЕЗА ИЗМЕЂУ ИКТ
И РАЗВОЈНОГ ПРОФИЛА ЕВРОПСКИХ ЗЕМАЉА

Апстракт

Примена информационо-комуникационих технологија (ИКТ) у свим сфера-ма човекових активности има значајан утицај на развој сваке земље. Боље разу-мевање везе између ова два феномена може допринети вођењу уравнотежене политике дугорочно одрживог развоја на националном нивоу. У том смислу, циљ овог рада јесте да истражи везу између ИКТ и развојних профила на приме-ру низа европских земаља. У раду смо користили неколико композитних индек-са (ИКТ развојни индекс Уједињених нација, глобални индекс конкурентности и Легатум индекс просперитета) са циљем да истражимо односне профиле по-сматраних земаља и пронађемо заједничку структуру у њиховим везама. Приме-нили смо методологију парцијалне регресије најмањих квадрата (PLS-R) и ук-ључили нови индекс, индекс просперитета, који интегрише све кључне димензи-је националног развоја (економску, социјалну и димензију окружења). Најваж-нији резултат јесте да PLS-R методологија успешно открива заједничку структу-ру у ИКТ и развојном профилу посматраних земаља. Одређени ИКТ индикатори – *Употреба ИКТ* и *Цена ИКТ* услуга – показали су се као доминантни индика-тори, имајући у виду њихов утицај на конкурентност и просперитет земаља. Ови индикатори посебно имају утицај на следеће атрибуте конкурентности – *Техно-лошка спремност*, *Пословно окружење*, *Институције* и *Иновације*, као и на атрибуте просперитета – *Управљање, Квалитет економије* и *Личне слободе гра-ђана* посматраних земаља. Добијени резултати могу бити од великог значаја, с обзиром на чињеницу да их креатори националних политика могу употребити за дизајнирање националних ИКТ и развојних стратегија.

Кључне речи: ИКТ профил земље, развојни профил земље, европске земље,
                   PLS-R методологија, национална развојна стратегија

INTRODUCTION

The topic of the link between information and communications technology (ICT) and national socioeconomic development is widely discussed and elaborated in literature. It is undeniably accepted that in the current digital age, ICT is a powerful driver that not only boosts economic development but also offers many social benefits to developed and developing countries alike. Indeed, as Savulescu notes, "ICT represents a fundamental factor, with several effects on productivity, innovation, competitiveness and economic growth" (2015, p. 515). Although many researchers have discussed the importance and role of ICT in socioeconomic development, this issue has attracted considerably more attention lately, mainly on account of the dynamic changes occurring in the ICT field. Changes in the ICT domain include the widespread use of mobile devices, leading in turn to the explosive growth of mobile applications, cloud computing, the internet of things, 'big data', artificial intelligence, 5G networks, streaming computing and advanced data analytics.

Aside from this aforementioned trend, in the most recent decade we have observed a general tendency to measure phenomena with composite indexes. These are used in diverse branches of science, including ICT and the development field. We opted for the International Telecommunication Union (ITU) development index as a measure of ICT development, and the global competitiveness index (GCI) and the Legatum prosperity index (LPI) as the measures of national socioeconomic development. We consider the relationship between the ICT and the sustainable development profiles of the observed European countries by using the given composite indexes. Thus, the main research question and purpose of this paper is to elucidate the relationships of the aforementioned phenomena and determine the nature of the common structure among these relationships, if one exists. This knowledge can be used to pursue a balanced and long-term policy of the sustainable development of any society.

The literature relating to ICT and development includes a number of studies that focus on statistical data and quantitative analysis. The current study belongs to this strand of research, but underlines some notable specifics. Unlike previous research, it includes a new development dimension (i.e., an environmental dimension) and attempts to explore the inner structure of the relationship between ICT and development, while bearing in mind the complexity of the measurement involved. We apply a specific multidimensional approach that is promising in terms of potentially generating new findings that cannot be detected with conventional techniques.

For empirical analysis purposes, we applied the partial least squares (PLS) methodology. Why did we opt for this methodology? Firstly, this methodology provides a multivariate approach where all variables are analyzed simultaneously. As Haenlein and Kaplan (2004, p. 284) write, citing Jacoby (1978), "We live in a complex, multivariate world [and that] studying the impact of one or two variables in isolation, would seem…relatively artificial and inconsequential" (p. 91). Secondly, our research question corresponds to the PLS objective, which is to analyze multiple relationships between various blocks of variables. In addition, PLS is an appropriate methodology for research characterized by a great number of highly correlated explanatory variables (which may cause the problem of multicollinearity) and a relatively small number of observations, as is the case with our study.

The paper is organized as follows. After the introduction, Section 2 reviews the literature on the relationship between ICT and socioeconomic development, with special emphasis on the quantitative analysis of this relationship. Section 3 describes this study's conceptual framework, data and the applied methodology, while Section 4 discusses the main empirical results. The next section summarizes the results and discusses some possible practical implications. Finally, the paper concludes with a brief description of the limitations of this research and future directions of research.

LITERATURE REVIEW

Research into the relationship between the two complex phenomena—ICT and development—has a decades-long tradition. As Walsham (2017) states, "information and communication technology for development (ICT4D) research, has a history going back some 30 years" (p. 18). Walsham provides a broad historical review of the diverse research that has been conducted since the mid-1980s vis-à-vis ICT and development, and discusses future research agendas. Bearing in mind the current pervasive nature of ICT usage in our everyday lives, he concludes "that the future [of the field] lies in a multidisciplinary interaction between researchers, practitioners, and policy-makers" (Walsham, 2017, p. 18). Also, the focus of research has chiefly been on developing countries, as this topic is, undoubtedly, likewise relevant for developed economies. Poverty is a ubiquitous phenomenon with many faces which vary from country to country. A real challenge for development theorists and practitioners is the fact that adequate ICT implementation can improve people's lives worldwide, regardless of their country's development level (Qureshi, 2015; Sein, Thapa, Harakka & Saebo, 2019). More about the theoretical foundations of ICT for development research can be found in the works of Avgerou (2017), Sein, et.al. (2019) and Rothe (2020).

The Millennium Development Goals (MDGs), as one of the most successful initiatives for poverty eradication, contributed to a broader view of development, and shaped the international development agenda in the period between 2000 and 2015 (United Nations, 2001, 2015). ICT is recognized as an enabler of MDGs, and a powerful tool which can be used to facilitate and support different aspects of the process of socio-economic development (World Bank, 2003, 2016, 2019, 2020, 2020a).

A new dimension was given to the analysis of the relationship between ICT and sustainable development by a global post-2015 development agenda, aimed at the fulfilment of Sustainable Development Goals (SDGs), which substituted MDGs (United Nations, 2015). Unlike MDGs, the SDGs refer to not only developing but also developed countries, and they completely cover the economic, social and ecological aspects of development (Perović, D. & Radukić, S., 2017; Trlaković, J., Despotović, D. & Ristić, L., 2018). The great potential of ICT for achieving all three aspects of SDGs by 2030, i.e. for achieving economic prosperity for all, social equity and environmental sustainability, was recognized in literature (Krstić, B, Stanojević, J, & Stanišić, T., 2016; Tjoa, A., & Tjoa, S., 2016; Gligorić, M., Jovanović Gavrilović, B. & Savić, Lj., 2018).

The literature related to the subject of ICT and socio-economic development includes a number of papers which treat some aspects of the topic using statistical data and quantitative analysis, such as: Kowal, J., & Roztocki, N. (2013), Skaletsky, M., Soremekun, O. & Galliers, R.D. (2014), Ayanso, A., Cho, D. I. & Lertwachara, K. (2014), Alderete, M. V.

(2017), Kowal, J. & Paliwoda-Pekosz, G. (2017), Cioacă, Cristache, Vuță, Marin, & Vuță, M. (2020). Here we point out the works of Kowal, J., & Roztocki, N. (2013) and Kowal, J. & Paliwoda-Pekosz, G. (2017), as the main idea of these works is quite similar to the idea and concept presented in this paper. However, there are significant differences. We discuss them below.

The first paper addresses the issue of the impact of a few variables, such as proportion of households with computer, proportion of households with internet access, mean years of schooling, expected years of schooling, working hours, self-employment rate, innovation rank on gross national income, well-being, and human development. The authors used the Human Development Index (HDI) and life expectancy as a representative of well-being and human development. They analyzed the differences between four groups of countries (developed, transition, emerging and developing economies) in light of the correlations between the mentioned variables. The results of their analysis showed that HDI and life expectancy at birth are highly correlated with the variables: gross national income, proportion of households with Internet access, proportion of household with computer, innovations, expected years of schooling, and mean years of schooling. While the correlation between the previously enumerated variables was positive and high, the variables self-employment rate and working hours showed a negative correlation with gross national income, HDI and life expectancy at birth. Also, their analysis demonstrated that all four group of countries differ significantly in relation to the examined factors. Finally the authors concluded that "statistical analysis confirms well-known fact that high standards of living in investigated countries are related to computer use, education of the population and the ability to innovate" (Kowal & Roztocki, 2013, p. 9).

The second paper addresses the significance of ICT for Global Competitiveness and Economic Growth in Emerging Economies. The authors examined the relationships between ICT, innovations, competitiveness, human capital and human development, taking into account the following indexes: gross national income (GNI), human capital development index (HDI), ICT infrastructure (ICTDI), human capital index (HCI), global competitiveness index (GCI), global innovation index (GII), psycho-social and economic factors of innovations (GII, GII efficiency), life expectancy (LE) and mean years of schooling (MSCH). They also concentrated on the following four groups of countries (European countries): advanced, advanced in transition, emerging in transitions, and emerging. The study results indicate "strong correlations between global indexes of ICTDI, HCI and HDI, GCI and GNI" for countries in transition (Kowal & Paliwoda-Pekosz, 2017, p. 305).

Compared with the previous two works, this paper has a slightly different approach in terms of the variables covered, the methodology ap-

plied, and the focus of research. This paper analyzes the relationship between three composite indexes: ITU ICT Development index, Global Competitiveness Index and Prosperity Index. The focus is not on the relationship between summary measures (which was the case in previous works), but the relationship between their indicators: 14 ICT indicators, 113 GCI indicators (12 pillars) and 33 LPI indicators (9 pillars). In this complex coverage, novel aspects of development are involved as elements of the Prosperity index, such as Safety & Security, Personal Freedom, Social capital and Natural environment. According to our knowledge, the Prosperity Index has not been included in previous studies on the relationship between ICT and development. Also, the proposed methodology is specific, as it is based on the correlation of the observed variables with some latent constructs, which can be extracted from the complex multidimensional space of individual variables. Thus, the focus of this work is on discovering the common structure of the investigated indicators, and, consequently, examining the position of the observed countries in this space. Given the above, we believe this study complements previous research, offering a more detailed picture of the structural relationship between ICT indicators and indicators of the socio-economic development of the chosen countries.

METHODS

The Conceptual Framework of the Research

As explained in the introductory part, we chose three composite indexes for ICT and socioeconomic development, and explored the relationship between them. For ICT data, we opted for the ITU ICT development index. To address national-level socioeconomic profiles, we investigated two composite indexes - the GCI and the LPI respectively.

Our research hypotheses are as follows.

Hypothesis H1: The relationship between ICT and the global competitiveness profiles of the observed countries is characterized by a common structure, which can be explained in terms of some significant latent constructs (components) derived from the original ICT and GCI indicators.

Hypothesis H2: The relationship between ICT and the prosperity profiles of the observed countries is characterized by a common structure, which can be explained in terms of some significant latent constructs (components) derived from the original ICT and LPI indicators.

Description Of Data

The data used in this study relates to 36 European countries (Table 1), each of which is described in terms of their ICT, competitiveness, and prosperity features.

Table 1. Countries included in the analysis

Number	Country	Country code	Number	Country	Country code
1	Albania	Alb	19	Lithuania	Lit
2	Austria	Aus	20	Luxembourg	Lux
3	Belgium	Bel	21	Macedonia	Mac
4	Bulgaria	Bul	22	Malta	Mal
5	Croatia	Cro	23	Montenegro	Mon
6	Cyprus	Cyp	24	Netherlands	Net
7	Czech Republic	Cze	25	Norway	Nor
8	Denmark	Den	26	Poland	Pol
9	Estonia	Est	27	Portugal	Por
10	Finland	Fin	28	Romania	Rom
11	France	Fra	29	Serbia	Ser
12	Germany	Ger	30	Slovakia	Slovak
13	Greece	Gre	31	Slovenia	Sloven
14	Hungary	Hun	32	Spain	Spa
15	Iceland	Ice	33	Sweden	Swe
16	Ireland	Ire	34	Switzerland	Swi
17	Italy	Ita	35	Turkey	Tur
18	Latvia	Lat	36	United Kingdom	UK

Table 2 lists the 14 key ICT indicators, the 12 GCI pillars, and the 9 LPI pillars used herein. Also, 113 competitiveness indicators and 33 prosperity indicators were the subject matter of the analysis. The data used in the analysis refers to the years 2017 and 2018.

Methodology

As noted earlier, we applied the PLS methodology in our analysis. Broadly conceived, PLS is a wide class or family of data analysis methods. It may be described as a broad set of methods aimed at modelling relationships between two sets of observed variables – X and Y sets, by means of extracting some latent components from the structural relationship of these sets. The main idea of the PLS methods is the projection of the observed data onto a derived latent structure (Tenenhaus, M., 2004; Tenenhaus, M., Pagès, J., Ambroisine, L., & Guinot, C., 2005, Maitra, S., & Yan, J., 2008, Abdi, H., Chin, W.W., Vinzi, V.E., Russolillo, G. & Trinchera, L., 2013). The projection is performed on the orthogonal score vectors (PLS components or latent components - LC) by maximizing the covariance between the observed sets of variables.

Table 2. Variables used in the analysis

ICT key indicator (X)	Variable code	GCI pillar (Y)	Variable code
Fixed-telephone subscriptions per 100 inhabitants	ICT_1	*Higher education and training*	GCI_5
Mobile-cellular subscriptions per 100 inhabitants	ICT_2	*Goods market efficiency*	GCI_6
Fixed-broadband subscriptions per 100 inhabitants	ICT_3	*Labor market efficiency*	GCI_7
Active mobile-broadband subscriptions per 100 inhabitants	ICT_4	*Financial market development*	GCI_8
3G coverage (% of population)	ICT_5	*Technological readiness*	GCI_9
LTE/Wimax coverage (% of population)	ICT_6	*Market size*	GCI_10
Mobile-cellular prices (% GNI pc)	ICT_7	*Business sophistication*	GCI_11
Fixed-broadband prices (% GNI pc)	ICT_8	*Innovation*	GCI_12
Mobile-broadband prices 500MB (% GNI pc)	ICT_9	LPI pillar (Y)	
Mobile-broadband prices 1GB (% GNI pc)	ICT_10	*Economic quality*	LPI_1
Percentage of households with computer	ICT_11	*Business environment*	LPI_2
Percentage of households with internet access	ICT_12	*Governance*	LPI_3
Percentage of individuals using the internet	ICT_13	*Education*	LPI_4
International internet bandwidth per internet user (kbit/s)	ICT_14	*Health*	LPI_5
GCI pillar (Y)		*Safety & security*	LPI_6
Institutions	GCI_1	*Personal freedom*	LPI_7
Infrastructure	GCI_2	*Social capital*	LPI_8
Macroeconomic environment	GCI_3	*Natural environment*	LPI_9
Health and primary education	GCI_4		

Source: ITU 2017a, b; World Economic Forum, 2017, 2018; Legatum Institute, 2018a, b

The PLS-R model can be presented in a more formal way, as follows (Bastien, Vinzi, & Tenenhaus, 2005). The PLS regression model for variables $\mathbf{y}$, $\mathbf{x}_1,...., \mathbf{x}_j, ..., \mathbf{x}_p$, with k components is written as:

$$\mathbf{y} = \sum_{h=1}^{k} c_h \left(\sum_{j=1}^{p} w_{hj}^* \mathbf{x}_j \right) + \text{residual} \qquad (1)$$

with the constraint that the PLS components $\mathbf{t}_h = \sum_{j=1}^{p} w_{hj}^* \mathbf{x}_j$ are orthogonal.

The parameters c_h and w^*_{hj} in the previous model are to be estimated. PLS regression is an algorithm for estimating these parameters and is written as:

$$\hat{\mathbf{y}} = \sum_{h=1}^{k} c_h \left(\sum_{j=1}^{p} w^*_{hj} \mathbf{x}_j \right) = \sum_{j=1}^{p} \left(\sum_{h=1}^{k} c_h w^*_{hj} \right) \mathbf{x}_j = \sum_{j=1}^{p} b_j \mathbf{x}_j. \tag{2}$$

where coefficients c_h are estimated by multiple regression of $\mathbf{y}$ on the PLS components $\mathbf{t}_h$. As previously stated, these components $\mathbf{t}_h = \sum_{j=1}^{p} w^*_{hj} \mathbf{x}_j$ are orthogonal.

The first PLS component $\mathbf{t}_1 = \mathbf{X} \mathbf{w}^*_1$ is defined as:

$$\mathbf{t}_1 = \frac{1}{\sqrt{\sum_{j=1}^{p} \text{cov}(\mathbf{y}, \mathbf{x}_j)^2}} \sum_{j=1}^{p} \text{cov}(\mathbf{y}, \mathbf{x}_j) \mathbf{x}_j \tag{3}$$

It is obvious that the importance of the variable $\mathbf{x}_j$ in the construction of the component $\mathbf{t}_1$ is determined by its correlation with $\mathbf{y}$. In the next step, the second component $\mathbf{t}_2$ is calculated. The following regressions are performed first:

$$\mathbf{y} = c_1 \mathbf{t}_1 + \mathbf{y}_1 \tag{4}$$

$$\mathbf{x}_j = p_{1j} \mathbf{t}_1 + \mathbf{x}_{1j} \tag{5}$$

followed by the calculation of the second component. The second PLS component is defined as:

$$\mathbf{t}_2 = \frac{1}{\sqrt{\sum_{j=1}^{p} \text{cov}(\mathbf{y}_1, \mathbf{x}_{1j})^2}} \sum_{j=1}^{p} \text{cov}(\mathbf{y}_1, \mathbf{x}_{1j}) \mathbf{x}_{1j} \tag{6}$$

where $\mathbf{y}_1$ and $\mathbf{x}_{1j}$ are residuals from formulas (4) and (5).

Bearing in mind that the partial covariance between $\mathbf{y}$ and $\mathbf{x}_j$, given $\mathbf{t}_1$, is defined as the covariance between residuals $\mathbf{y}_1$ and $\mathbf{x}_{1j}$, that is,

$$\text{cov}(\mathbf{y}, \mathbf{x}_j | \mathbf{t}_1) = \text{cov}(\mathbf{y}_1, \mathbf{x}_{1j}) \tag{7}$$

the second PLS component $\mathbf{t}_2 = \mathbf{X} \mathbf{w}^*_2$ is written as:

$$\mathbf{t}_2 = \frac{1}{\sqrt{\sum_{j=1}^{p} \text{cov}(\mathbf{y}, \mathbf{x}_j | \mathbf{t}_1)^2}} \sum_{j=1}^{p} \text{cov}(\mathbf{y}, \mathbf{x}_j | \mathbf{t}_1) \mathbf{x}_{1j}. \tag{8}$$

Next, components - $\mathbf{t}_h = \mathbf{X} \mathbf{w}^*_h$ are calculated in a similar way. The procedure stops when all partial covariances are not significant.

EMPIRICAL RESULTS AND DISCUSSION

To investigate the research question and test the proposed hypotheses, we examined two structural relationships.

The first hypothesis, which pertains to the relationship between ICT features and the global competitiveness of the observed countries, was tested with two models, as follows:

- GCI pillars (12 pillars) regressed on ICT indicators (ICT-GCI-1 model), and
- GCI indicators (113 indicators) regressed on ICT indicators (ICT-GCI-2 model).

The second hypothesis, which pertains to the relationship between ICT features and the prosperity of the countries studied, was tested with two additional models, as follows:

- LPI pillars (9 pillars) regressed on ICT indicators (ICT-LPI-1 model), and
- LPI indicators (33 indicators) regressed on ICT indicators (ICT-LPI-2 model).

All models were run with the XLSTAT Addinsoft software package (ver. 2019.1.3; Addisonsoft, Inc., New York, N. Y. USA).

Estimated regression equations for the ICT-GCI-1 and ICT-LPI-1 models are presented in Appendix 1.

First, we present the general quality of the applied PLS method for regression (PLS-R models) as a function of the number of LCs. Table 3 shows the metrics of two indexes: R^2Y cum and R^2X cum indexes.

Table 3. PLS-R model quality: basic statistics

Summary statistics	LC_1	LC_2	LC_3	LC_4
ICT-GCI-1 model				
R^2Y cum	0.544	0.607	0.646	0.680
R^2X cum	0.483	0.555	0.627	0.688
ICT-GCI-2 model				
R^2Y cum	0.385	0.432	0.470	0.508
R^2X cum	0.497	0.577	0.660	0.730
ICT-LPI-1 model				
R^2Y cum	0.670	0.700	0.729	0.750
R^2X cum	0.483	0.565	0.627	0.687
ICT-LPI-2 model				
R^2Y cum	0.461	0.493	0.537	0.564
R^2X cum	0.483	0.570	0.628	0.702

Note: PLS component t_1 - Latent Component1: LC_1, PLS component t_2 - Latent Component2: LC_2, PLS component t_3 - Latent Component3: LC_3, PLS component t_4 - Latent Component4: LC_4.
Source: Authors' calculations, based on the data in Table 2.

For the purpose of our analysis, two indexes are especially important – namely, R^2X cum and R^2Y cum, which show the correlation of the ICT and GCI (LPI) indicators, respectively, with LCs. Generally, the values of the R^2Y cum and R^2X cum indexes increase with an increased number of LCs, and approach 1. In the case of the ICT-GCI-1 model, the explanatory power of the first four LCs is higher for the ICT variables, relative to the GCI variables (ICT-GCI-1: 0.688 vs. 0.680; ICT-GCI-2: 0.730 vs. 0.508). On the other hand, for the ICT-LPI model, the explanatory power of the first four LCs is higher for the ICT variables when the LPI variables are LPI indicators (ICT-LPI-1: 0.687 vs. 0.750; ICT-LPI-2: 0.702 vs. 0.564). Generally, these values show that the PLS-R models with the four LCs share a common structure among indexes and adequately explain both the ICT as an independent variable, and the GCI and LPI as dependent variables. Thus, these results support our research hypotheses H1 and H2.

Figures 1 and 2 show the levels of correlation between the observed ICT and development features, and the first two LCs: the former is a correlation map generated by the ICT-GCI-1 model, while the latter is the corresponding map generated by the ICT-LPI-1 model.
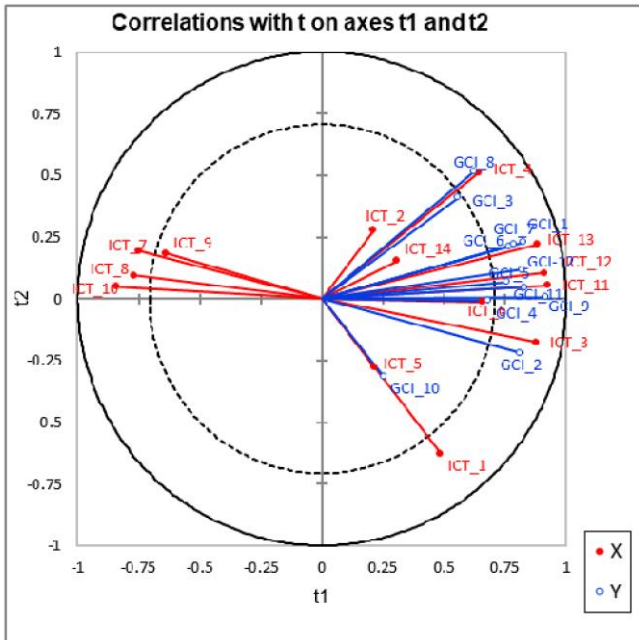
Figure 1. Correlation map generated by the ICT-GCI-1 model: Correlation between ICT indicators (Xs) and GCI pillars (Ys) with two LCs
Note: t1: LC_1; t2: LC_2. X: ICT indicators; Y: GCI pillars
Source: Authors' calculations, based on the data in Table 2.
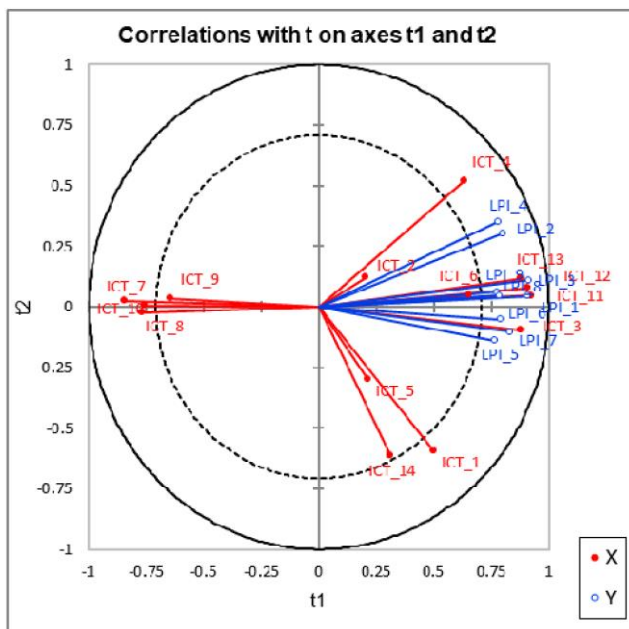
Figure 2. Correlation map generated by the ICT-LPI-1 model: Correlation between ICT indicators (Xs) and LPI pillars (Ys) with two LCs
Note: t1: LC1; t2: LC2. X: ICT indicators; Y: LPI pillars
Source: Authors' calculations, based on the data in Table 2.

Figures 1 and 2 reveal the direction and the magnitude of correlation between the ICT and GCI (LPI) indicators with the first two LCs. At first glance, one can see that the correlation pattern is similar for these two models. We see that the majority of the input variables correlate positively with the first LC; for this reason, they are mainly concentrated on the right-hand side of the map. Regarding the ICT indicators, we see in both Figures 1 and 2 that four independent variables related to prices (i.e., *Mobile-cellular prices*, *Fixed-broadband prices*, *Mobile-broadband prices 500MB*, and *Mobile-broadband prices 1GB*) strongly and negatively correlate with t_1. These four variables comprise a block of variables that strongly and positively correlate among themselves, but correlate negatively with all other ICT indicators. At the same time, on the opposite side of the chart, other variables – namely, *Percentage of households with computer*, *Percentage of households with internet access*, and *Percentage of individuals using the internet* – show very strong and positive correlations among themselves, and a very strong and negative correlation with the first block of variables. This holds for both models. Additionally, we note that three ICT indicators, i.e., *Mobile-cellular subscriptions per 100 inhabitants*, *3G coverage*, and *International internet bandwidth per inter-*

net user, near the center of the map, show weak correlation with both PLS components and other ICT indicators.

The development indicators (GCI and LPI indicators) are concentrated on the right-hand edge of the correlation maps. In the case of the ICT-GCI-1 model, all the GCI variables except GCI_3 (*Macroeconomic environment*) and GCI_10 (*Market size*) strongly correlate with the first latent component (t_1) (i.e., correlation coefficient>0.6). The Competitiveness variables GCI_3 (*Macroeconomic environment*), GCI_8 (*Financial market development*), and GCI_10 (*Market size*) correlate more strongly with the second LC (t_2). On the other hand, with the ICT-LPI-1 model, there is a demonstrably strong correlation between all LPI variables and the first LC (i.e., all correlation coefficients >0.765). These results concerning the correlation structure of the observed ICT and development indicators, and derived LCs are significant and 'speak in favor' of our research hypotheses.

Additionally, other maps that show the countries' positions regarding their ICT and development profiles are also very useful. Figures 3 and 4 respectively are observation maps generated by the previous models.
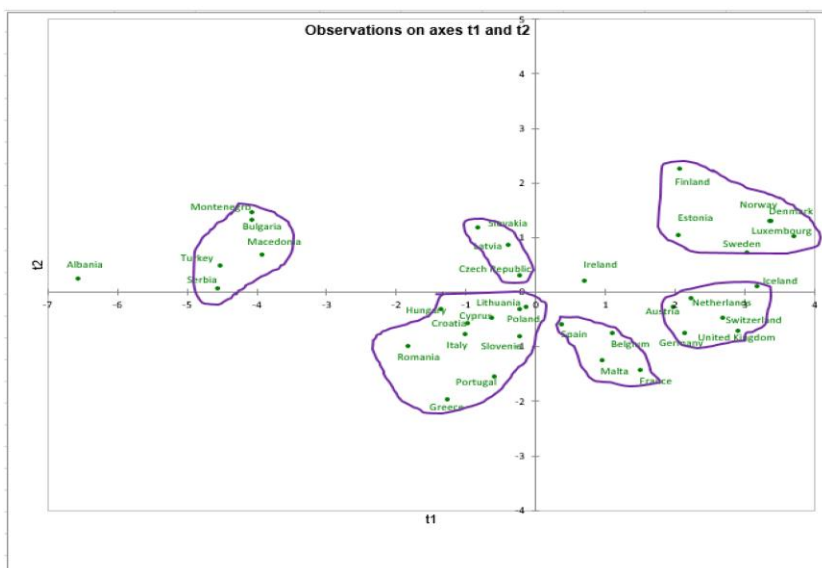
Figure 3. Observation map: GCI pillars regressed on ICT indicators
Note: t1: LC$_1$; t2: LC$_2$.
Source: Authors' calculations, based on the data in Table 2.
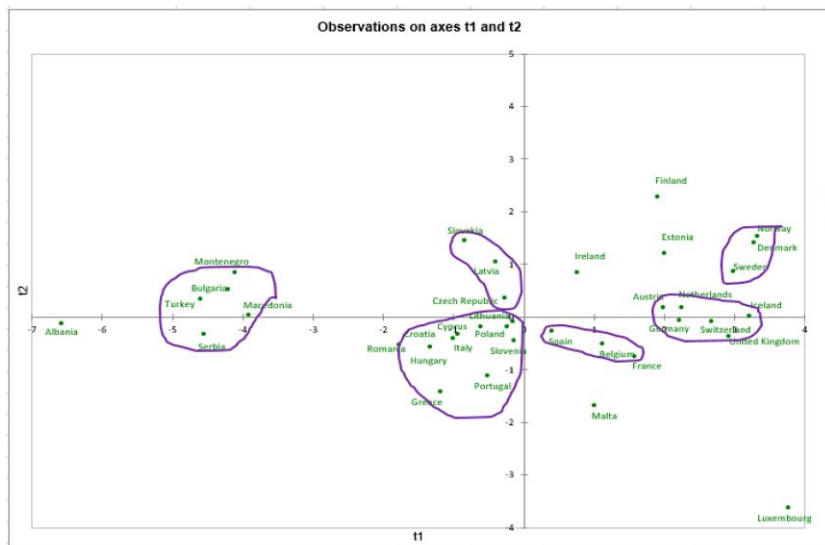
Figure 4. Observation map: LPI pillars regressed on ICT indicators
Note: t1: LC₁; t2: LC₂.
Source: Authors' calculations, based on the data in Table 2.

Interpretations of the observation maps are very intuitive: the more tightly clustered the countries are on the map, the more similar they are in terms of ICT, global competitiveness, and prosperity features. Note that the Scandinavian countries are located along the upper right-hand edge of the map, while the West Balkan countries are located on the opposite side of the map, along the left-hand edge.

Additionally, these observation maps reveal the following findings: a) the two models generate very similar projections for the studied countries, and this indicates that the relationship between ICT and competitiveness profiles is very similar to the relationship between ICT and prosperity profiles (with the exception of Luxembourg); b) it is interesting that the distribution of the observed countries on the map mainly resembles a geographical map; and c) we see a pattern of clustering among the European countries regarding their ICT and development profiles. Based on the visualization, we point to one possible grouping solution (i.e., countries in highlighted circles in Figures 3 and 4).

CONCLUSION

Bearing in mind the previously mentioned empirical results, we can summarize the principal findings of our study as follows:

▪ Exploring the relationship between ICT and the development profiles of the European countries, we found that there is a sig-

nificant common structure among these profiles. By applying the PLS methodology, the common structures of the observed variables (i.e. all ICT, competitiveness and prosperity country features) were extracted and analyzed in the domain of latent components (LCs). It is shown that the correlation between ICT and socioeconomic variables (through the use of LCs) exhibited large values. The appropriate model statistics R^2X cum index values were in the range of [0.687, 0.730] and R^2Y cum index values were in the range of [0.508, 0.750]. As such, these results support our research hypotheses, H1 and H2;

- It is interesting that the correlation 'pattern' between ICT and competitiveness features, as well as between ICT and prosperity features, was similar across the applied models (as seen in the correlation maps). For this reason, we can say that the structure of the relationship between ICT and competitiveness profiles, and the relationship between ICT and the prosperity profiles of the European countries are very similar. This conclusion is additionally supported by the use of observation maps, wherein we can see very similar projections for virtually all the European countries. This indicates that the ICT features of the observed countries are similarly reflected on their competitiveness and prosperity;

- It is remarkable that the observation maps generated in the course of the current study, which reflected the location of the countries in the ICT and development environment, resemble a geographical map of the countries. Additionally, these maps provide an indicative picture of the 'natural' groupings of the countries studied, based on their ICT and competitiveness (prosperity) profiles. We proposed one grouping solution for each observation map.

Based on these findings, we can put forward some practical implications of the study. Our results may be of practical importance to creators of national-level ICT and development policies; they may be particularly salient to policy-makers and executives in developing countries and transition economies. Here, we refer specifically to the fact that certain ICT indicators - namely, *Use of ICT* and *Price of ICT services* - can be considered predominant indicators, given their impact on the set of competitiveness and prosperity features of the observed countries. In particular, these ICT indicators generally share a common structure and influence the following competitiveness features of the observed countries: *Technological readiness*, *Business sophistication*, *Institutions*, and *Innovation*. Also, they are closely correlated and have an impact on certain prosperity country features: *Governance, Economic quality*, and *Personal freedom*. For this reason, this observation can help inform policy-makers

which ICT indicators to pay special attention to, and where they can expect significant results. They can also benefit from the proposed correlation maps, which provide an intuitive understanding of the relationships among a large number of indicators and the related countries in a complex ICT and development environment. Using these maps, one can monitor the location and grouping of a particular country, and compare them to those of other countries.

LIMITATIONS AND FUTURE RESEARCH

The main limitation of this study lies in the fact that it included only European countries as a whole. It would be interesting to conduct a similar analysis on multiple groups of countries which are at different stages of socio-economic development. In doing so, the focus would be on developing countries and countries in transition. As a starting point, this research can serve groups of countries that are represented on the observation maps in this paper, but the data sample may be extended to non-European countries. We believe that a comparative analysis of the results would be worthy of attention.

Also, for some future work, the wider context of the ICT and development country profiles can be analyzed applying an extended variant of the methodology applied in this study - PLS Path Modelling (PLS-PM). For that purpose, in addition to the phenomena analyzed, some new concepts may be included.

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СТРУКТУРНА ВЕЗА ИЗМЕЂУ ИКТ
И РАЗВОЈНОГ ПРОФИЛА ЕВРОПСКИХ ЗЕМАЉА

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Резиме

У овом раду приказани су резултати емпиријског истраживања структурних односа између два битна феномена националних економија: заступљености и примене информационо-комуникационих технологија - ИКТ карактеристика, са једне стране, и развојних карактеристика, са друге стране. У раду је посебан акценат стављен на сагледавање комплетног развојног профила посматраних земаља, који обухвата како

економске, тако и социјалне и еколошке аспекте развоја, што је у складу са Циљевима одрживог развоја предложених од стране УН. Имајући то у виду, изабране су основне метрике на основу којих је спроведено истраживање. То су три композитна индекса – ИКТ развојни индекс, глобални индекс конкурентности и Легатум индекс просперитета земаља. Истраживање је обухватило 36 европских земаља. Основна методологија истраживања јесте методологија Парцијалне регресије најмањих квадрата (PLS-R), која обезбеђује мултидимензионални приступ према коме су све променљиве симултано укључене у анализу. Применом ове методологије истражена је, са једне стране, структурна веза између ИКТ и нивоа конкуретности земаља (постављена су два модела), а са друге стране, структурна веза између ИКТ и нивоа просперитета посматраних земаља (такође применом два модела).

Најважнији резултати овог емпиријског истраживања откривају значајну структурну повезаност између ИКТ и развојних карактеристика земаља, било да се ниво развоја посматра кроз компетитивне карактеристике или карактеристике просперитета националних економија. То указује да се ИКТ карактеристике на сличан начин рефлектују на ниво конкуретности и просперитета. У том погледу приказане су мапе, које откривају позицију сваке од посматраних земаља у погледу ИКТ и развојних карактеристика. Интересантна је чињеница да ове мапе углавном прате географски распоред земаља и пружају могућност за сагледавање њиховог груписања у области ИКТ и развојног домена. Од свих ИКТ индикатора посебно се издваја утицај два индикатора - Употреба ИКТ и Цена ИКТ услуга на следеће развојне карактеристике земаља: Технолошка спремност, Пословно окружење, Институције и Иновације, као и на начин Управљања, Квалитет економије и Личне слободе грађана посматраних земаља. Добијени резултати могу послужити за креирање развојних стратегија земаља, посебно са аспекта утицаја ИКТ индикатора на развојне карактеристике. Такође, од значаја може бити праћење резултата утицаја ИКТ индикатора на ниво реализације Циљева одрживог развоја, које су предложиле Уједињене нације за националне економије.

APPENDIX 1

ICT-GCI-1 model equations:

$GCI\_1 = 1{,}051 - 0{,}001*ICT\_1 + 0{,}02*ICT\_2 + 0{,}017*ICT\_3 + 0{,}010*ICT\_4 - 0{,}015*ICT\_5 + 0{,}014*ICT\_6 + 0{,}007*ICT\_7 - 0{,}057*ICT\_8 + 0{,}095*ICT\_9 - 0{,}233*ICT\_10 + 0{,}001*ICT\_11 + 0{,}006*ICT\_12 + 0{,}021*ICT\_13 + 0{,}000005*ICT\_14$

$GCI\_2 = -0{,}372 + 0{,}018*ICT\_1 - 0{,}001*ICT\_2 + 0{,}021*ICT\_3 + 0{,}003*ICT\_4 + 0{,}028*ICT\_5 + 0{,}012*ICT\_6 - 0{,}087*ICT\_7 - 0{,}123*ICT\_8 + 0{,}031*ICT\_9 - 0{,}253*ICT\_10 - 0{,}004*ICT\_11 - 0{,}00026*ICT\_12 + 0{,}009*ICT\_13 - 0{,}000076*ICT\_14$

$GCI\_3 = 4{,}686 - 0{,}023*ICT\_1 + 0{,}002*ICT\_2 - 0{,}004*ICT\_3 + 0{,}007*ICT\_4 - 0{,}032*ICT\_5 + 0{,}006*ICT\_6 + 0{,}050*ICT\_7 - 0{,}057*ICT\_8 - 0{,}155*ICT\_9 - 0{,}096*ICT\_10 + 0{,}014*ICT\_11 + 0{,}014*ICT\_12 + 0{,}012*ICT\_13 + 0{,}000087*ICT\_14$

$GCI\_4 = 4{,}569 + 0{,}005*ICT\_1 - 0{,}00028*ICT\_2 + 0{,}010*ICT\_3 + 0{,}004*ICT\_4 + 0{,}003*ICT\_5 + 0{,}007*ICT\_6 + 0{,}001*ICT\_7 - 0{,}034*ICT\_8 + 0{,}007*ICT\_9 - 0{,}093*ICT\_10 - 0{,}004*ICT\_11 - 0{,}001*ICT\_12 + 0{,}007*ICT\_13 - 0{,}000047*ICT\_14$

$GCI\_5 = 2{,}628 + 0{,}002*ICT\_1 - 0{,}002*ICT\_2 + 0{,}014*ICT\_3 + 0{,}007*ICT\_4 + 0{,}001*ICT\_5 + 0{,}013*ICT\_6 + 0{,}036*ICT\_7 - 0{,}110*ICT\_8 + 0{,}026*ICT\_9 - 0{,}153*ICT\_10 - 004*ICT\_11 + 0{,}001*ICT\_12 + 0{,}011*ICT\_13 - 0{,}00012*ICT\_14$

GCI_6 = 3,233-0,001*ICT_1+0,002*ICT_2+0,006*ICT_3+0,004*ICT_4-0,006*ICT_5+0,005*ICT_6 -0,007*ICT_7-0,020*ICT_8+0,026*ICT_9-0,099*ICT_10+0,002*ICT_11+0,003*ICT_12+0,009*ICT_13 +0,000022*ICT_14

GCI_7 = 2,223+0,002*ICT_1+0,002*ICT_2+0,014*ICT_3+0,007*ICT_4-0,010*ICT_5+0,009*ICT_6+0,007*ICT_7-0,013*ICT_8+0,134*ICT_9 -0,149*ICT_10-0,003*ICT_11+0,001*ICT_12+0,015*ICT_13-0,0000054*ICT_14

GCI_8 = 3,648-0,014*ICT_1+0,003*ICT_2+0,007*ICT_3+0,011*ICT_4 -0,037*ICT_5+0,009*ICT_6+0,079*ICT_7+0,003*ICT_8+0,097*ICT_9 -0,107*ICT_10+0,002*ICT_11+0,006*ICT_12+0,019*ICT_13+0,000029*ICT_14

GCI_9 = 1,020+0,008*ICT_1+0,001*ICT_2+0,017*ICT_3+0,006*ICT_4+ 0,008*ICT_5+0,012*ICT_6-0,052*ICT_7-0,084*ICT_8+0,045*ICT_9-0,237*ICT_10- 0,00021*ICT_11+0,003*ICT_12+0,014*ICT_13-0,000015*ICT_14

GCI_10 = 1,061+0,004*ICT_1-0,010*ICT_2+0,003*ICT_3 -0,002*ICT_4+0,047*ICT_5+0,012*ICT_6-0,001*ICT_7-0,319*ICT_80,399*ICT_9 -0,111*ICT_10+0,001*ICT_11+0,004*ICT_12-0,013*ICT_13-0,00026*ICT_14

GCI_11 = 0,737+0,005*ICT_1-0,00005*ICT_2+0,017*ICT_3+0,007*ICT_4 +0,004*ICT_5+0,013*ICT_6-0,014*ICT_7-0,101*ICT_8+0,035*ICT_9 -0,217*ICT_10-0,002*ICT_11+0,003*ICT_12+0,014*ICT_13-0,000057*ICT_14

GCI-12 = -0,111+0,005*ICT_1+0,001*ICT_2+0,021*ICT_3+0,010*ICT_4-0,004*ICT_5 +0,017*ICT_6 +0,005*ICT_7-0,095*ICT_8+0,107*ICT_9-0,256*ICT_10-0,003*ICT_11 +0,003*ICT_12+0,020*ICT_13-0,000064*ICT_14

ICT-LPI-1 model equations:
LPI_1 = 42,211+0,034*ICT_1-0,021*ICT_2+0,118*ICT_3+0,046*ICT_4-0,001*ICT_5+0,064*ICT_6-0,530*ICT_7-1,212*ICT_8-0,906*ICT_9-2,113*ICT_10+0,050*ICT_11+0,078*ICT_12+ 0,109*ICT_13 + 0,0000082 *ICT_14

LPI_2 = 67,658+0,011*ICT_1-0,042*ICT_2+0,148*ICT_3+0,091*ICT_4-0,368*ICT_5+0,039*ICT_6-0,165*ICT_7-0,053*ICT_8+0,740*ICT_9-2,792*ICT_10+0,017*ICT_11+0,055*ICT_12 +0,187*ICT_13-0,001*ICT_14

LPI_3 = 32,874+0,068*ICT_1-0,047*ICT_2+0,231*ICT_3+0,100*ICT_4-0,157*ICT_5+0,098*ICT_6-0,780*ICT_7-1,104*ICT_8-0,325*ICT_9-4,394*ICT_10+0,063*ICT_11+0,114*ICT_12 +0,238*ICT_13-0,001*ICT_14

LPI_4 = 70,258-0,013*ICT_1+0,025*ICT_2+0,092*ICT_3+0,062*ICT_4-0,260*ICT_5+0,074*ICT_6-0,520*ICT_7+0,453*ICT_8+0,736*ICT_9-2,707*ICT_10+0,042*ICT_11+0,037*ICT_12+0,126*ICT_13-0,001*ICT_14

LPI_5 = 62,002+0,060*ICT_1-0,040*ICT_2+0,080*ICT_3+0,017*ICT_4+ 0,085*ICT_5+0,008*ICT_6-0,145*ICT_7-0,489*ICT_8-0,221*ICT_9-1,123*ICT_10+0,003*ICT_11+0,031*ICT_12 +0,064*ICT_13 +0,00023 *ICT_14

LPI_6 = 39,915+0,089*ICT_1+0,046*ICT_2+0,104*ICT_3+0,011*ICT_4+ 0,166*ICT_5+0,084*ICT_6-0,954*ICT_7+1,398*ICT_8+1,273*ICT_9 -3,625*ICT_10+0,037*ICT_11+0,007*ICT_12+0,093*ICT_13-0,000081*ICT_14

LPI_7 = 18,974+0,187*ICT_1-0,056*ICT_2+0,240*ICT_3+0,049*ICT_4+ 0,217*ICT_5+0,061*ICT_6-0,841*ICT_7+0,482*ICT_8+1,052*ICT_9 -4,981*ICT_10+0,017*ICT_11+0,055*ICT_12+0,212*ICT_13 +0,00019*ICT_14

LPI_8 = 49,636+0,066*ICT_1-0,081*ICT_2+0,153*ICT_3+0,065*ICT_4
-0,129*ICT_5+0,007*ICT_6-0,031*ICT_7-0,647*ICT_8+0,133*ICT_9
-2,137*ICT_10-0,002*ICT_11+0,057*ICT_12+0,159*ICT_13-0,00029 *ICT_14

LPI_9 = 49,662+0,015*ICT_1-0,022*ICT_2+0,093*ICT_3+0,040*ICT_4-
0,013*ICT_5+0,055*ICT_6-0,408*ICT_7-1,500*ICT_8-1,237*ICT_9-
1,417*ICT_10+0,048*ICT_11+0,077*ICT_12+0,084*ICT_13 +0,000063 *ICT_14

THE CHARACTERISTICS OF TITLE BLOCKS ON NEWS PORTALS: THE CASE OF THE CRIME COLUMN

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Abstract

A large number of news portals and social networks in the everyday communication environment has significantly influenced the change of the traditional genre structure, but also the technique of collecting, selecting, processing and distributing information. Under the pressure of productivity and clickbaiting, crime cases columns in market-centric media are becoming an increasingly important part of daily reporting. Hence, the title blocks on the portals are the subject of this paper, with the hypothesis that their visual and textual contents differ significantly from those in traditional newspapers. The informative core of the message, characterized by sensationalism and intent to awaken curiosity, and visually enriched with photographs of actors and capital letters, greatly influences the audience's choice. This paper, through the case study of the disappearance of a 27-year-old young man from a neighboring country, determines the basic characteristics of news headlines and reports published on the news portal "Serbia Today" (Serb. „Srbija Danas"). The results of quantitative and qualitative content analysis are also relevant for other portals, because a large number of texts are shared between the different portals. Emotionally and expressively marked words aimed at the attention of users awaken the users' empathy and desire to actively participate in a social chronicle that excites and upsets the wider community. Qualitative analysis also indicated a close connection between the headline and the content of the report, with a predominantly sensationalist tone, as well as a clear commitment to constant public attention.

Key words: news portals, crime column, headlines, keywords, audience

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КАРАКТЕРИСТИКЕ НАСЛОВНИХ БЛОКОВА НА ИНФОРМАТИВНИМ ПОРТАЛИМА: СЛУЧАЈ ЦРНЕ ХРОНИКЕ

Апстракт

Велика заступљеност информативних портала и друштвених мрежа у свакодневном комуникацијском окружењу значајно је утицала на промену традиционалне жанровске структуре, као и на технике прикупљања, селекције, обраде и дистрибуције информација. Под притиском продуктивности и кликбејтинга, црне хронике у тржишно-центричним медијима постају све важнији део дневног извештавања. Стога је насловни блок на порталима предмет овог рада, уз хипотезу да се визуелни и текстуални садржаји портала значајно разликују од садржаја класичне штампе. Информативно језгро поруке карактеристично по сензационализму и буђењу знатижеље, визуелно обогаћено фотографијом актера и крупним словима, у великој мери утиче на опредељење публике. У раду се кроз студију случаја нестанка двадесет седмогодишњег младића из суседне државе утврђују основне карактеристике наслова вести и извештаја објављиваних на информативном порталу „Србија Данас“. Резултати квантитативне и квалитативне анализе садржаја релевантни су и за остале портале, јер портали често преузимају текстове један од других. Емоционално и експресивно маркиране речи циљале су на позорност корисника, будећи њихову емпатију и жељу за активним суделовањем у друштвеној хроници која узбуђује и узнемирава ширу заједницу. Квалитативна анализа указала је и на високу повезаност наслова и садржаја извештавања, при чему преовладава сензационалистички тон, као и на јасно опредељење за непрестаном пажњом јавности.

Кључне речи: њуз портали, црна хроника, наслови, кључне речи, публика

INTRODUCTION

Well-known American futurist and communicologist Alvin Tofler was among the first to suggest that, in the new millennium, societies are recognized through a tripartite system of power: the agrarian economy at the bottom (in underdeveloped and patriarchal societies); smokestack economy in the middle (in former post-communist and socialist countries unwilling to adapt to changes in the environment) and "knowledge-based economies, or economies of the Third Wave, which, at least for a time, occupy the top of the global pyramid of power" (Tofler & Tofler, 1998, p. 93). The bloodstream of the new society consists of information, electronics, digital communications and the increasingly noticeable *mediatization* - the distribution and number of channels of mass diffusion of messages. The average man with a computer and internet access now has more information than both world powers in World War II (Lorimer, 1988, p. 78). A specific paradox is being created between society and the media: the world has never been richer in the amount of news and meanings, but at the same time their authenticity and objectivity are decreasing. In the old world, man exclusively produced meanings; in a networked society,

mental representations are increasingly created by the mass media, indirectly influencing the shaping of the consumer environment.

The age which we live in could already be called digital, because the Internet, which the Spanish sociologist Manuel Castells metaphorically claims has become the "connective tissue of our lives" (2003, p. 11), is at its center. Thus, we can assume that online media are gradually setting new trends in journalism, taking over attention from traditional media. Non-linearity in the approach to work (storage and display of information in a special schedule), various possibilities of presenting news, linking and shortcuts, data archiving, immediacy and interactivity are just some of the advantages provided by the Web (WorldWideWeb, WWW). Although in our communication practice a complete takeover of the online community as the primary source of information is yet to occur, the fact that among 2,608 media there are as many as 850 Internet portals and 89 editorially designed websites indicates that that moment is approaching[1]. The young generation of Zoomers, or post-millennials, who are fleeing the real world seeking refuge on the Internet, have already focused social networks as the principal sources of news through which they get information.Their attention lasts less than ten seconds, including large photos and few accompanying words, because the speed of information technology has become a decisive component of the success and quality of work, and the Internet as the infrastructure of a global society, "with the system of its packages, enabled the transmission of data in the shortest possible way, and when congestion occurs, in alternative ways as well" (Milenković, 2019, p. 37).

New media are a consequence of the technological revolution. Their main feature is a virtual space that offers a sense of closeness and trust, and which is seemingly free to the audience.[2] In theory, they denote various types of digitized content, regardless of whether they are static or dynamic files - digital images, graphics, video files, sounds, texts and the like. In his work *The Language of New Media* (2001), theorist Lev Manovich lists their basic categories: "Internet, web presentations, multimedia, video games, virtual reality ... Communication through new media implies the exchange of messages via a computer network ... with the possibility of reciprocal exchange of roles of broadcasters and recipients

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[1] In the first six months of 2021, the number of media in Serbia increased by 5.7 percent. Among them is the largest number of newly registered editions of Internet portals, as many as 128, as well as editorially designed websites - a total of nine, according to the Business Registers Agency. Thus, daily and periodical newspapers reached the number of 941 issues, radio programs were broadcast by 335 stations, and television programs were broadcast by 243 stations. News agency services were provided by 27 media houses, while 123 companies were classified as "other" and "undefined".

[2] Virtual space, or cyberspace, denotes an imaginary space in which communication is performed by technological means and by means of the Internet.

in real time or asynchronously" (Radojković & Miletić, 2008, p. 167). Thus, the differences between the classical forms of communication practice, especially interpersonal and mass communication, become negligible on the Internet.

The term *new media* is constituted as the opposite of the term *traditional media*, which denotes channels for mass distribution of information characteristic of the pre-technological revolution, i.e. the press, radio and television. The old media functioned "on the relation one to many, while the Internet together with social networks brought a new multidirectional system - one to one, one to many and many to many" (Jevtović, Vulić & Pavlović, 2012, p. 263). There is also the standpoint that new media are not the rivals of traditional media, but their upgrading, i.e. summarizing. Thus, news portals, i.e. internet newspapers, apart from the text and static illustrations characteristic of the press, have photographs, video files and sound recordings, similar to television and radio reports, which significantly expands the range of communication. The essence of their functioning is in the number of clicks (so-called Clickbaiting[3]), because, thanks to them, news portals become visible in the wider media market. Web 2.0 has created many forms of audience exploitation, creating supervisory capitalism as a new economic order of "appropriating human experience as a free raw material for supervisory business practices of data mining, forecasting and sales; the parasitic economic logic according to which the production of goods and services is subordinated to the new global structure for behavior modification" (Zubof, 2020, p. 7). Shoshana Zuboff pays special attention to the media and social networks that are becoming "markets of future behavior" (Zubof, 2020, p. 18) and platforms for selling behavioral surplus (information on the behavior of their sales and users are the core economic strength of these platforms).

Considering Garrison's division of online media into four types of functioning, we will try to bring them as close as possible. The 'Twenty-four-hour continuous news model' denotes online media that works on the principle of publishing news throughout the day, peaking at the time of the highest attendance, between midday and 5 p.m. The second is the 'Community bulletin board site model', which, in addition to news, also offers news about theater performances, literary evenings, concerts, weather forecasts and news from the marketing sphere. The 'Complementary news site model' used by many local online media uses unlimited

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[3] By this term we mean the planned skillful design of headlines that encourage readers to click on a hyperlink or previous link, in order to stay on our portal as long as possible. "This is the craziest thing you could imagine ...", "You will never believe what happened ..." or "You have to know this if you want to be informed ..." are just some of the lures that catch your attention.

space on the Internet to expand classic media content. The 'Exclusive news site model' is used by online media for content that has not been published elsewhere. This model is expensive and economically difficult to maintain (Garrison, Salwen, Driscoll, 2005, p. 15).

For the purposes of this paper, we define online media as specific Web pages for informing users, regardless of the type of content (information-political, economic, artistic, sports, entertainment or other content) and regardless of whether it is a digital edition of classic media or a new channel of communication. By the phrase *news portal* we mean a specific type of twenty-four-hour production where placing information on digital platforms relativizes the space to the limitations of recipients, and where a proactive, sensitive approach to data processing aims to awaken empathy and the ability of consumers to reconstitute reality in a way relevant to themselves.

CHARACTERISTICS OF NEWS PORTALS JOURNALISM

The working environment, as well as the reporting context of the contemporary journalist, has changed significantly. Increasingly, going out to the field, and talking to witnesses and participants are replaced by browsing content on television websites or social media posts, so that *copy-paste journalism* is becoming an embedded element of journalistic reality[4]. Journalists are expected to engage in multimedia, which means that, in creating their texts using camera footage or audio recordings, they reproduce the event by skillfully selecting facts and assumptions, which allows the users to 'immerse' themselves in the offered content. Unlike journalism in classic media, which creates distance between itself and its users, journalists are now expected to emotionally introduce visitors to the topic by applying modern technologies, stimulating their curiosity, and keeping them on the platforms for as long as possible. That is why the title block received an essential mission - to attract the consumer, that is, to 'buy' his time. At the same time, one rule is important; never deceive the audience, because trust is the only money with which you pay for the users' attention.

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[4] We see *copy-paste journalism* as a synonym for piracy, or the theft of other people's texts or photographs (video clips), which are downloaded and broadcast without the author's permission. Traditional media often accuse news portals of making a living from such models of unauthorized broadcasting, but according to Nino Brajović, Secretary General of the Association of Journalists of Serbia (UNS), "even large Belgrade newsrooms download texts from Serbian portals without permission". Tabloids, mostly when it comes to events from the crime column, print these texts without crediting either the author or the editorial board (Politika, April 15, 2016).

An increasing number of info portals, along with tabloids and similar market-oriented media, are introducing *infotainment*, whose goal is not to present and confront opinions, but to relativize, generalize and to put social criticism to rest. Blood, sex, fear, scandal, sensation, death, accidents, serious illnesses, pandemics, natural disasters and similar topics are increasingly dominating the media. Unlike classic journalism, in which a journalist reported on facts in an impartial way, media journalism insists on arousing emotions, so that the development of narratives aims at the longest possible involvement with the recipient. The content of messages blocks the mind, inflames emotions, and awakens fear and mysticism, so that by focusing on deviant behaviors, extreme phenomena and violence, the public space becomes a testing ground for numerous speculations. The three principles of the news portal - informing, persuading and connecting - are also reflected in the field of shaping information that is created in accordance with the metrics of receiving clicks, which often means ignoring the facts.

It is noticed that, in practice, news from the crime column cause the most reactions within the social community, and that most portals continue to reproduce them with only minor modifications. Copy-paste journalism has become a common practice of the news portals that often download such content. Theorists have already noticed that such crime columns contain neither police statements nor information on whether the journalist tried to obtain official information, which overlooks the fact that many readers do not read the news beyond the headline (Brandenstein, 2011, p. 8). Furthermore, headlines are also a type of message that one should know how to decode, because due to the headline's brevity, the reader must know, in advance, the broader context from which the headline derives (Taiwo, 2007, p. 223). Visualization plays an important role in attracting attention; consequently, headlines on portals are characterized by an enlarged and bold font, while the repetition of select words aims at keeping an individual's attention on the rest of the text for as long as possible. Another theoretical difference is noticeable here: while the press, by means of the title block, primarily develops *allocation* (speech) as a pattern of information flow, the focus on portals is on *consultation* and, especially, *conversation* (Radojković & Miletić, 2008, p. 164). In the new media, as in no other media before[5], all four patterns of information

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[5] By *allocation*, Radojković and Miletić mean one-way distribution of information whose time and place are determined by broadcasters. *Registration* is based on storing information in one center, often without the knowledge or approval of individuals. *Consultation* is explained as a selective "withdrawal" of information from the central stock / library, media, data banks. In this pattern, time, place and content are determined by information users, while *conversation* is an individual exchange of information in interpersonal communication (Radojković & Miletić, 2008, p. 164).

flow are observed to exhibit a maximum decentralization of time choices, and the merging of individual and central 'stocks of information'.

Unlike traditional, critically intoned and credible journalism, which measured its influence through newspaper circulation, news portals measure popularity by the number of posts, clicks, comments and likes. In the traditional press, the circulation of sold copies could already be measured at newsstands, which served the publishers as proof of the impact of the marketing packages they sold. Everything is different on portals: the Internet statistically processes the number of clicks (action) that open the content page, at least for a period. This is a confirmation that the reader saw the text, and thus the power of the market grows with the number clicks. Thus, metrics determine the attractiveness of the title blocks, while sharing content through Facebook and similar networks strengthens the identities of the portals, which are compared among themselves by the number of visitors or page openings they record (unique user and page impression).

Technological changes brought about by information technology and digital tools have changed the nature of journalism, but this fact is still unnoticed by many. Instead of proven, informatively rich and interpretive genres, news and reports on spectacular, unusual, unexpected and exciting events are preferred, especially if they contain elements of conflict and negativity. Theorists single out sensationalism, which is defined in relation to headlines as "a strategy of shaping information so that it seems more interesting and relevant" (Molek-Kozakowska, 2013, p. 173), as the tool used for selling what is often not present in reality. In practice, this implies a different approach to the audience "so that they feel included and more connected to the story" (Jones, 2017, p. 6), which guarantees that they will consume similar content in the future. The distance that existed between the author and the reader is now disappearing, because, by thinking about the habits and preferences of the audience, the journalists working for news portals directly shape the content that the user expects. Traditional newspapers have never been able to activate all the senses of the audience, while news portals do so, so successfully that the consumer has a false sense of participating in the chain of events. Storytelling in the digital world has taken on a new dimension in the audience's ability to use different platforms as sources of information and, at the same time, check the credibility and communicativeness of the media by comparing headlines, photos or videos. Deepening contacts with recipients usually depends on the attractiveness with which the title block creates this reversible relationship, which shows the importance it has in the structure

of each genre and section (Mitrović & Vasiljević, 2021, p. 133)[6]. A radical change is observable in portals, which make content more emotional, and draw it closer to the sensibility of users, building the impression that such information is something that the recipients needed for their understanding of the news and its wider context.

THE MOST COMMON TOOLS FOR MONITORING PORTAL VISITS

Built on a commercial basis, portals must cover the activities of information production, which is the costliest part of business. Money is made from online advertising, banner placement, sponsorships, or other forms of digital marketing, provided that they have a sufficient number of visitors, or clicks. Today, all editorial offices of news portals have at their disposal tools that precisely monitor the attendance of their users, which means that the metrics of the popularity of the headline direct their retention in public space. Management is especially interested in tracking: the length of the retention of the headlines and the text itself, the frequency of content sharing, the tendency to open similar topics, the reactions to specific information, and the sentiment caused by contact with specific content. The editorial board is also interested in whether their portal is trusted, or whether the users check current information on other sites. This is done by the means of technological tools that detect users' behavior without the users knowing it.

Google Analytics is a tool that Web content owners can use to access any genre's tracking statistics at any time. It provides information on the total number of clicks, the unique number of visits, what people like to read the most, where and from which device they access Web content, as well as how long they stay on the site and what content they prefer. The professional challenge is finding a way to 'package' information so as to present it as current and important, and sell it successfully, no matter how trivial the information is. Journalism on portals is diametrically different from traditional journalism, because it revolves around attention instead of quality, thus cyberspace headlines attract the audience and get additional importance.

By means of internet tools, it is easy to establish a list of the most frequently read texts (during a given day, week, month, etc.). In that context, the fact that the crime column is always at the top indicates the high positioning of this topic in the field of editing, especially since its competition consists of: political news, economics, culture, science, fashion, entertainment, sports and the like. In this case study, at least a quarter of the

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[6] Internet users can discover the intentions behind real, displayed behavior by changing their status on social networks and publicly sharing their reactions (Mitrović & Vasiljević, 2021, p. 133).

20 most frequently read texts during the observed seven-day period are part of the crime column.

Figure 1. List of the most read texts on the portal "Serbia Today" („Srbija Danas") 5.1.2022.

      Digital media is significantly different from classic media - it speeds up the delivery of news and similar content instead of checking it through a powerful gatekeeping process. The audience does not wait, and because of its speed, digital media sacrifices the quality of information by selecting only that information which is interesting to it. The management of news portals skillfully uses this by employing certain programs to emphasize the content that the audience wants. The Alexa program, created in 1996, has just such capabilities: it tracks the daily number of unique visitors and the average number of pages viewed. Page ranking is done by a methodology that combines the daily number of unique visitors and the average number of pages viewed. The program offers additional data that provides a more detailed insight into the habits and behavior of users, such as: the Bounce Rate, Daily Pageviews per Visitor, time spent on the site (Daily Time on Site), demographic display of visitors and locations, information on which text the users read before the text from a specific portal, etc.

      Because a good selection of search terms increases the number of clicks and the visibility of the portal, *Google Trends* analyzes the history of terms, the frequency of keyword searches by selected criteria, as well as the choice of keywords in headline construction. New audiences expect an immediate distribution of information, and if the portal is open 24 hours a day, every year, there is a clear need for a continuous 'refreshment' of information. Thus, unlike classic newspapers, online media are

trying to appear on portals with numerous modifications and more than a dozen times during the day.

Through social networks, digital marketing, whose task is to improve the visibility of the communication channel, has imperceptibly entered the sphere of journalistic text processing. It includes recommendations, comments and content sharing in order to build a media brand. Also, it appears on the market for consumers looking for specific content. While classic marketing addresses a wide population, users of news portals are targeted through a precise analysis of personal data collected during the consumption of content. The already mentioned tools make user profiles by identifying their habits, activities, interests, needs and desires. Based on this data, precisely measured advertisements aimed at recognized expectations are added to the media content (Trengove, Malczyk & Beneke, 2011).

THE CHARACTERISTICS OF NEWS PORTAL TITLE BLOCKS

In classic newspapers, the composition of a headline represents the identity card of the editorial office, and its appearance, structure and content indicate the core of the information shared in the text. Theorists believe that "good headlines with a noticeable expressive-logical and graphically designed identity, in addition to informative, also have aesthetic values important for better newspaper sales" (Jevtović, Petrović & Aracki, 2014, p. 56). This highlights the three basic functions of a good headline – the headline informs, values and contributes to the appearance of the article. The title block is structurally divided into several elements (upper headline, headline, subtitle and intertitle), and it can appear as complete or combined depending on which of these elements are used.

In online editions, the creation of new genres gained in intensity because it enabled current information to appear in a short period of time, unencumbered by the traditional composition of the title unit. On the Internet, headlines are uploaded and arranged chronologically by programs, in order to make it easier to follow the time sequence of events, whereby the content is easily updated with newly received data without previous data being deleted. Predrag Bajić (2017, p. 73) singles this characteristic out as an important difference between online news and traditional news and reports, because the arrival of new information implies a longer rewriting process in traditional news than it does in chronological online reporting. The audience focuses on news portals at a significantly higher level as compared to the traditional press, because you only need an internet connection to access the data. Therefore, the task of management is to ensure their portal's placement among the leading portals, especially

when one takes into consideration the rule of social networks: "the best takes it all" (the winner takes it all).[7] Although websites are numerous, in practice and over time, a concentration of the most popular ones takes place. Thus, in the world of digital communications, habit is an important component in choosing an Internet portal. By analyzing internet content, Biljana Vitković proved that "according to all measuring instruments, internet contents lead to a higher level of audience concentration than the one in traditional media" (Vitković, 2010, p. 44), which is especially noticeable by comparing news portals with identical print media. The audience of the portals is already focused on the conducted analyses of their expectations, so that by skilful use of the "law of the majority" (Shirky, 2004), popular sites take all the marketing prey. That is why headlines have an even more important role in news portals than they do in the classic press, because they create the first contact with the recipients.

In the *Linguistic Features of Newspaper Headlines*, Lana Hudechek sees the ability to "attract the reader's attention and warn him succinctly, interestingly and intelligently about the main idea of the following article" (Hudeček, 2006, p. 297) as the basic explanation of the newspaper headline function. The editors of the portals are well aware that the audience of social media is looking for fast-paced information in the most concise and dynamic form, so they try to shape the perception of users in relation to that cognition. Media commitment to selected topics and actors influences the attention of readers, i.e. their decision to set aside their time for a particular portal.

HEADLINE CHARACTERISTICS ON THE PORTAL "SERBIA TODAY" („SRBIJA DANAS")

This paper, through the study of the case of the disappearance of a 27-year-old young man from a neighboring country, determines the basic characteristics of news headlines and reports published on the information portal "Serbia Today" in the first seven days of the search (between 1/1/2022 and 7/1/2022). The section "Crime Column" has a large readership on daily content, so that quantitative and qualitative analyses of the content can be conducted on the characteristics of the title units. Addi-

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[7] This rule was taken from the Internet, where it was noticed that the first ten portals have a higher flow of audience than all the others. According to the research of the largest European internet research company "Gemius" (Gemius Auidience), among the top ten most visited websites in 2020 were: blic.rs 3,037,965 (first), kurir.rs 2,884,863 (second), hello.rs 2,388,259 (fourth), novosti.rs 2,298,190 (seventh) and informer.rs 1,985,242 (ninth). The portal srbijadanas.com was in fifth place, with 2,361,518 visitors, and it is the only website that does not have a classic, printed edition.

tionally, certain genre comparisons can be made with the classic press. The essential difference in writing for news portals is redefining the concept of timely news publishing and proximity rules, which the British journalism theorist Richard Craig sees through two basic differences – "online media offer multimedia benefits and the ability to update stories with the latest data" (Krejg, 2010, p. 25).

Unlike classic press, in which the title block is static, the portal, using digital advantages, creates a dynamic whole that attracts at the first sight. The emotion is real and sensibility seems natural, while suggestion builds a bridge between the young and the old audiences. The thematization of harmony takes place according to the invisible rules of the crime column: the victim's family always has priority over other sources of information. A cursory review of several characteristic headlines is proof of these assertions. "Portal Serbia Today" (Jan. 6, 2022 at 15:55) published the headline: "'I have a feeling that he will appear from somewhere'. Mateja Perish's girlfriend opened her soul: If he was drugged, someone poured it into his drink". Emotionality is an important feature of the crime column, so social tension is raised by informing the readers about the pain of the closest family members. The hunger of the public is great; a few hours later ("Serbia Today", Jan. 6, 2022 at 18:48) the number of people close to the tragically missing young man increased: "The Mother is desperate, won't leave the church! Grandmother and grandfather of the missing Matej: 'It is hardest for her, she will not stop praying'". The illustration of the text in the close-up shows the head of a missing young man peeking just above the water, while a patrol boat was skillfully inserted in front of his face with a clearly visible sign reading: "POLICE"[8]

Unlike the fixed nature of content in classic newspapers, news portals can add information, and enrich it with multimedia audio-video recordings, and images from Instagram or Facebook. The same is the case with the headline: "The father of the missing citizen of Split does not lose hope: 'I WILL RETURN WITH MATEJ TO SPLIT'. 'I am not leaving without him'" ("Serbia Today", Jan. 7, 2022), accompanied by a photo background combining a picture of a young man running along the banks of the Sava with a picture of his father staring into the distance. The pain of the family is immeasurable, but since there is no official information, the media amplifies the mystery and plays on the understandable desire of the public to find an answer by transferring emotions.

Interest shifts from the closest family members to a wider circle of people who knew the victim, and to those who use the tragedy for their own gains. Accidents and personal destinies increase readership with in-

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[8]During the monitoring, we noticed that the photos necessarily highlighted the young man's eyes, which was meant to be a comment on his youth, while, in the texts themselves, the emphasis was on his age (27).

credible speed. Due to the lack of information, journalists pay attention to the reactions of public figures who, by nature of their work, need to advertise themselves: "'WE HOPE FOR THE BEST' the Prime Minister of Croatia urgently said regarding the disappearance of Matej" ("Serbia Today", Jan. 6, 2022 at 14:39). This headline was accompanied by a photo of Andrej Plenković. However, the headline was not in line with the facts: the Croatian politician addressed the public only on the sixth day of the search, on the occasion of the traditional Christmas reception organized by the Serbian National Council in Zagreb. The circle of reactions becomes progressively wider, but remains related to the main actor in the story: "'HIS WARM SMILE WAS WARMING US ALL.' The words of Matej's class teacher TEAR THE SOUL - the whole of Split is in shock because of the disappearance" ("Serbia Today", Jan. 4, 2022). Portals use the language of old media with the addition of new ways of accessing and formatting information. The genre remains the same, but the title composition is reshaped, because the number of clicks dictates the emotionality of expression. Narratives are woven like a web in the middle of which the fate of an unfortunate young man is hidden, so that mystery covers the content of the text: "MATEJ COULD NOT SAVE HIS FRIEND' the young man from Split mourned for his friend - he was shaken by his death" ("Serbia Today", Jan. 6, 2022). The headlines that are marked as the most visited generate an increase in online communication, and journalists often revise the content in order to maintain a high level of interest. Every word in the multimedia block has its function, because in order to enable the understanding of the audience, it is necessary to place every concept or image where it makes the most sense. Journalists dig through the past, looking for details that could sell the story as a new one. Another headline read: "THE EIGHTH DAY OF THE SEARCH FOR MATEJ - NEIGHBORS FROM SPLIT SPOKE UP: One of their statements IS BLOOD-CHILLING" ("Serbia Today", Jan. 7, 2022). A photo of Matej and the police searching the river indicates that the content of the headline and the text overlap, which is a great combination. It is a mistake to post a video or timeline, followed by long charts that make it difficult to understand the content. Readers should be gradually served parts of the informative mosaic so that they mentally take them in, piece by piece, in a linear order.

Immoderate sensationalism can also be an unforgivable mistake. With a sensible choice of words and packaging of data, sensationalism arouses interest, but it disappears as it moves away with the progression of the text. The frequent use of adjectives, adverbs and numbers enhances the impression of an unusual event, while giving a positive or negative tone to the report enhances the impression of readers. Everything is brought into rhetorical interdependence, a stylistically challenging combination of words that stimulates curiosity. Viral, fake news bring chaos

to the information environment, which, in the case of our research, means inserting misinformation, rumors, gossips and whispers into communication, because they provide greater traffic to the portal. *Clickbait* journalism looks for waves of information which flood the lonely consumer every hour. Getting as many clicks as possible is the only important objective, so the accuracy and reliability of the information cease being a priority. "WITNESS CLAIMS HE MET MATEJ: 'He was wearing a jacket that was quite large for him. WE THOUGHT HE WAS SOME TRAMP'" ("Serbia Today", Jan. 3, 2022) is a headline leading the investigation on a false trail. Traditional media do not have the ability to monitor the speed and explosiveness of the portal, which intensify the effect of unverified data. Since almost all portals offer similar content, their information core is multiplied, creating the impression that the content is relevant. The amount of similar premonitions and assumptions grows like a balloon, which brings mysticism and tragedy, the inevitable companions of crime columns, to the audience: "FORMER INTELLIGENCE OFFICER EXPRESSES DARK FOREBODINGS: The case of the man from Split is similar to the disappearance of LITTLE BARBARA – 'MAYBE THEY WILL NEVER FIND HIM'" ("Serbia Today", Jan. 3, 2022). According to the rhythm of publishing the headlines, the portals are most reminiscent of news agencies, but what marks a difference is the way and speed of adapting the content to the profiled audience. Journalistic processing, visual equipment, and keywords (hooks) are specific to the production of a good portal. The similarity in the content of different portals is unquestionable, because there is an unsigned agreement between the media houses on copying each other's texts. Thus, the headlines of the crime columns of the portals: "Serbia Today", "Kurir", "Blic", "Alo", "Mondo", "Informer", "Jutarnji list", "Dnevnik hr", "Indeks", "Slobodna Dalmacija", "Večernji list" and "Tanjug" have almost the same meanings.

While observing the intensity of reporting on the case, which is the focus of this research, it was noticed that the media event was continuously growing and reproducing already well-known data, but always with a strong, stimulating tone that suggests interest and relevance. During the analyzed period, we noticed the dynamics of growth brought about by social attention – the sparse five articles available at the beginning of the crisis communication became a number of articles nine times higher in just a few days.
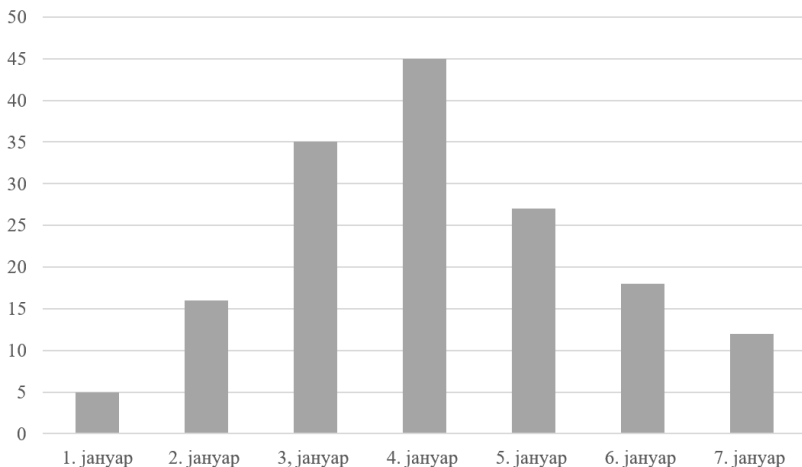
Graph 1. Intensity of publishing texts about the missing young man[9]

A state of actuality is artificially created through a frequent repetition of specific words, used as baits, in the title block, which suggests the existence of exclusivity in relation to other media. On the second day of his disappearance, the portal "Srbija Danas" announced: "LATEST FINDINGS ABOUT THE MISSING CITIZEN OF SPLIT: It is suspected that Matej fell into the river?! One thing forced him to leave the bar" [10]. During the crisis situation, the same technique was often employed. Content modification is a feature of news portal reporting, while renaming is just a way to create an impression of originality. The discourse framework is unique for all media that report on this topic, but the headlines suggest that this portal is at the forefront of exclusivity: "LATEST INFORMATION FROM THE SPOT! Police divers on standby, many things make the search difficult (VIDEO)" ("Serbia Today", Jan. 3, 2022.). The same video was broadcast by all portals in Serbia, but since the audience's attention was constantly kept awake, the headlines suggest that something new had been discovered. Television broadcasting agencies with a national frequency, which use the same material to build a value matrix, also contribute to the homogenization of the media image, so that the topic gathers the public in a narcotic way. The informative core of the message is poor, and there is very little precise data, so numerous speculations and interpretations help in the simulation that the investigation has made progress: "LATEST FINDINGS ABOUT THE

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[9] The fall of the texts in the research sample is not a consequence of the weakening of public attention, but of the Christmas atmosphere that settled on the pages of the portal.
[10] The portal „Srbija Danas".

MISSING CITIZEN OF SPLIT: Matej spent an hour in the 'SPANISH house'" ("Serbia Today", January 4, 2022.).

Nearly half a century ago, media theorists Maxwell McCombs and Donald Shaw noted that "the mass media may not be so successful in convincing us *what* to think, what attitudes to have about various phenomena and people, but they are extremely successful in ordering us what to think about, what phenomena to form opinions and attitudes about" (as cited in Bogdanić, 1996, p. 121). Their assertion that the media determine the topicality and priority of topics for thinking set the theory of agenda (agenda setting theory), which only strengthens the thesis that media influence grows with the development of each new technology in modern society. The audience of the portal is young, but technologically educated, so it combines the multimedia of the message with the freshness of the content. "LATEST DETAILS OF THE SEARCH FOR THE CITIZEN OF SPLIT - Traces of drugs found in the apartment where Matej stayed" ("Serbia Today", Jan. 6, 2022) is a headline illustrated with a photograph of the young man with a police badge inserted over it, suggesting drama and an ongoing search. The metamedia society is based on the continuous distribution of information, i.e. the illusion that the user participates in the chain of meaning that circulates in public space.

While in print media there is a ready-made composition of the title block that is permanent and unchangeable because it is printed, on news portals, the same content, illustrated with a photo, is constantly being changed, enriched, refreshed and supplemented. Highlighting the feature of variability, Manovič pointed out that "the matter of new media is not forever established and unchangeable, but can exist in different, possibly endless versions, which indicates the character of post-consumer logic, which differs significantly from industrial society and in which numerous copies of the original that are identical are made, as it is the case with the press" (Manovič, 2015, p. 77-78). This can be seen in the example of the headline: "'I HAVE JUST RETURNED FROM MoI (MUP) MEETING'. The father of the missing citizen of Split has spoken again: 'Please, spare my family'" ("Serbia Today", Jan. 6, 2022.), where the face of a worried father is in the foreground, while a part of the video of the missing young man running along the streets of Savamala, andhis photo from Instagram are in the background. In the observed time interval, as many as 34 front pages broadcast both this and similar information, which shows the high synchronization of content, as well as the frequency of broadcasting numerous variations of the same message. The technique of media framing is realized by combining factual and

visual elements, thereby determining the way in which the audience understands the topics being reported on (Goffman 1974, p. 21)[11].
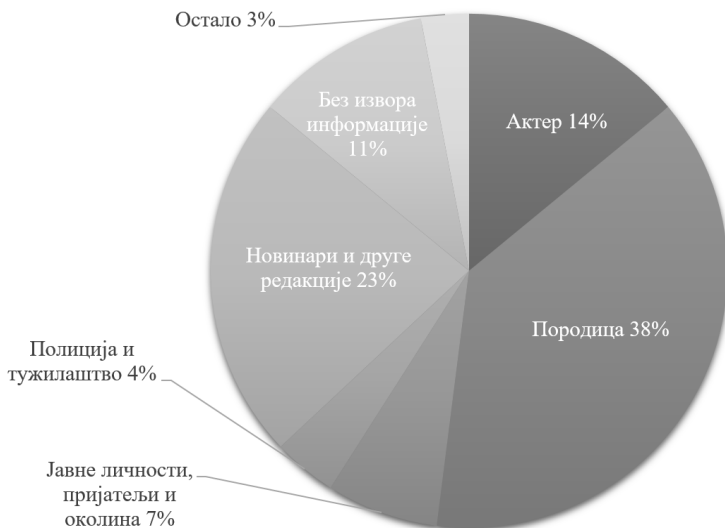
Graph 2. Content indicators of title blocks
according to the topics of reporting

Qualitative analysis of the crime column indicated a strong connection between the headline and the content of the report, with a predominant sensationalist tone as a motive for mobilizing the public. The search for possible reasons for the disappearance of the young man is more in the realm of speculation, but numerous headlines testify to how much the audience likes such speculations, which are far from serious, investigative journalism. The focus of the headline is the family and the people close to it, who have been later on connecting to the database by links, while the percentage that indicates the role of journalists in creating public is not negligible. Journalists take into account the wishes of the digital users and try to generate as much communication as possible by choosing words and photos. It is also interesting that the relevant sources of information (Police, Judiciary, Prosecutor's office) are silent; consequently, the public space is left to others, which allows for a flood of misinformation, rumors and false news.

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[11]Erving Goffman concludes that "media and journalists approach topics and events they report on using specific discourse, thus unconsciously (and sometimes consciously) determining the position from which the reader accesses the phenomena and data he or she is informed about" (Goffman 1974, p. 21).

Journalism theorists usually single out two key tasks of the title block: rounding up everything that has been said, and attracting the attention of the readers (Ifantidou, 2009, p. 699). In practice, it is noticed that the headlines on the portals often have a larger audience than the contents of the crime columns, which can be easily proven by the number of clicks and the time taken to stay on the link. Headlines are shaped like hooks that get the users' attention, i.e. they are a multimedia message that suits their needs. Along with the rhetorical trap, a warm, ambiguous photo of the content actor is indispensable in the title block. The intention of the photo, which is by skillful montage brought into a different context, is to reinforce the journalistic thesis.

CONCLUDING REMARKS

In theories of journalistic genres, different authors (Slavković, 1979; Životić, 1993; Todorović, 1998; Jevtović et al., 2014; Vulić, 2018) notice that headlines in composition develop different functions and characteristics, but almost all of the authors state the importance of attracting the attention of readers, especially in the context of tabloid reporting. News portals apply a proactive model of convergent communication, which, by combining headline, text and photographs, creates a likable and intriguing narrative with an emphasis on the message, and not the author(s). The analysis of the title blocks during the reporting on the missing young man showed the power of the interaction of creating a message, digital technology and the audience, as well as the potential of the portal in crisis communication. The addition of video and audio recordings retains visitors to a significant extent, so it is advisable to publish them.

The crime column is among the most read sections of every portal, but in combination with short, effective headlines and affected keywords, it achieves a commercial effect as well. The skill is in highlighting the headline, and the hidden emotionality and sensibility with which the consumer is drawn into additional content. The short lead, which immediately goes to the home page (show window), should be further refreshed with new data, or new interpretations of both the actors who have contact with the story and the journalists. The basic hypothesis of this paper confirmed that the portals pay special attention to the tone of reporting, thus dragging the recipient into the trap of complicity. Creating a rhetorically and stylistically strong syntagma, the journalist ostensibly includes the readers in the text, carefully taking care that the key words correspond to the terms that are most often searched for. Visitors also pay attention to the design of the page, expecting easy and efficient navigation which does not require much engagement. The unobtrusive logo at the top of the

website has the sublime role of continuously returning the reader to a well-known address chosen in a sea of competing portals.

Single-layer information, without analytics and critical deepening, is a consequence of the speed it strives for, so it is not surprising that a large number of unverified data changes the previous content every hour. It is also noticeable that the upper headline has disappeared from the title block and that, as an accompanying technique, a metric of the most favorite and sought-afterterms has been added to the genre structure. Printed newspapers themselves determine the hierarchy of texts, arranging them linearly, according to the degree of their importance, from the first page to the last one. In practice, this means that readers are often offered texts they did not ask for, especially if they appeared on the front page. Unlike them, news portals organize news into groups that meet the expectations of consumers, which indicates that the strategic goal of communication has been fully achieved.

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КАРАКТЕРИСТИКЕ НАСЛОВНИХ БЛОКОВА НА ИНФОРМАТИВНИМ ПОРТАЛИМА: СЛУЧАЈ ЦРНЕ ХРОНИКЕ

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Резиме

Иако у нашој комуникационој пракси онлајн заједнице још увек нису постале примарни извор информација, млада генерација пост миленијалаца већ је друштвене мреже фокусирала као прве изворе вести. Информациони портали, осим текста и статичних илустрација карактеристичних за штампу, поседују фотографије, видео фајлове и звучне записе налик на телевизијске и радијске прилоге, што значајно шири комуникационе могућности. Суштина њиховог функционисања је у што већем броју кликова, или кликбејтинга, јер захваљујући њима постају видљиви на ширем медијском тржишту.

Заступљеност информативних портала и друштвених мрежа у свакодневном комуникацијском окружењу значајно је утицала на промену традиционалне жанровске структуре, али и на технике прикупљања, селекције, обраде и дистрибуције информација. Уочава се, такође, да је из насловног блока нестао наднаслов и да је, као пратећа техника, жанровској структури придодата метрика најомиљенијих и најтраженијих појмова. Под притиском продуктивности и кликбејтинга, црне хронике у тржишно-центричним медијима постају све важнији део дневног извештавања. Рад разматра карактеристике насловног блока на порталима у оквиру студије случаја нестанка двадесет седмогодишњег младића из суседне државе, утврђујући специфичности наслова вести и извештаја објављиваних на информативном порталу „Србија Данас". Резултати квантитативне и квалитативне анализе садржаја релевантни су и за остале портале, јер се текстови у великом броју међусобно преузимају.

Црна хроника међу најчитанијим је рубрикама сваког портала, али у комбинацији са кратким, ефектним насловима и погођеним кључним речима, остварује и комерцијални ефекат. Вештина је у истицању наслова, и прикривеној емоционалности и сензибилности којом се конзумент увлачи у додатни садржај. Једнослојна информација, без аналитичности и критичког удубљивања, цена је брзине којој се стреми, па не чуди што велики број непроверених података сваког часа смењује претходне садржаје. Кратак лид вести на порталу, који одмах иде на почетну страну стално треба освежавати новим подацима или интерпретацијама како актера који имају додира са причом, тако и новинара.

Квалитативна анализа указала је и на високу повезаност наслова и садржаја извештавања, при чему преовладавају сензационалистички тон и јасно опредељење за непрестаном пажњом јавности. Анализа насловних блокова у рубрици Црна хроника током извештавања о несталом младићу показала је моћ интеракције креирања поруке, дигиталне технологије и публике, али и потенцијал портала у кризном комуницирању. Наслови су обликовани као мамци који привлаче пажњу корисника и испуњавају сва њихова очекивања. Уз реторичку замку, све време извештавања била је приказана и вишезначна фотографија актера садржаја која је вештим монтажом постављана у контекст са текстом да би појачала новинарску тезу.

Резултати овог истраживања потврдили су да портали посебно воде рачуна о тону извештавања, чиме читаоца увлаче у замку саучествовања. Креирајући рето-

ричко-стилски снажну синтагму, новинар читаоце привидно укључује у текст, пажљиво водећи рачуна да кључне речи одговарају појмовима који се најчешће претражују. Емоционално и експресивно маркиране речи циљале су на позорност корисника, будећи њихову емпатију и жељу за активним суделовањем у друштвеној хроници која узбуђује и узнемирава ширу заједницу.

CHANGING THE LEGAL STATUS OF ANIMALS: LEGISLATION AND LITIGATION

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Abstract

This paper addresses the issue of the legal status of non-human animals and the possibility of changing it from the status of things or property, to the status of non-things, or better, sentient beings. Key arguments for the change of their status are discussed, including the argument from marginal cases, and the scientific evidence indicating that many animals are sentient beings. Two ways of initiating such changes seem most promising: legislation, i.e. the modification of civil codes, and litigation, i.e. filing lawsuits on behalf of individual animals. It is argued that legislative changes are necessary for moving animals out of the legal category of things and into the category of sentient beings that can bear rights. On the other hand, litigation could bring about a more radical change of the legal status of some animals.

Key words: Animals, legal status, sentient beings, things, rights

ПРОМЕНА ПРАВНОГ СТАТУСА ЖИВОТИЊА: ЗАКОНОДАВСТВО И СУДСКИ СПОРОВИ

Апстракт

Тема овог рада је проблем правног статуса не-људских животиња и могућ-ност промене тог статуса од статуса ствари, или својине, у статус не-ствари или, још боље, осећајних бића. У раду се разматрају кључни аргументи у прилог про-мени њиховог статуса, попут аргумента маргиналних случајева, као и научна евиденција која указује на то да су многе животиње осећајна бића. Два начина иницирања оваквих промена највише обећавају: путем законодавства тј. изменом грађанских законика, и путем судских спорова, тј. подношењем тужби у име појединачних животиња. Заступа се тврдња да су законодавне промене неопходне ради премештања животиња из правне категорије ствари у категорију осећајних бића која могу да имају права. С друге стране, покретање судских спорова би могло довести до радикалније промене правног статуса неких животиња.

Кључне речи: животиње, правни статус, ствари, осећајна бића, права

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INTRODUCTION

Until the 19th century, the prevailing view in Western thought was that nonhuman animals were inanimate objects that had no moral standing and to which humans had no moral obligations. This view draws on Descartes' (1637/1971) assertion that animals are mere bodies, machines that run automatically like clocks and have no consciousness or soul, or any kind of mental life. Accordingly, just as we have no moral obligations to clocks, we have no moral obligations to animals. Unlike Descartes, Kant (1784-5/1997) recognizes that animals are sentient beings, but argues that humans have no direct moral obligations to animals because animals have no reason or self-awareness, so they are solely means that serve our purposes and have only instrumental value.

Quite a different view has been advanced by Jeremy Bentham, who argues that animals should be granted rights based on their sentience, and regardless of the fact that they lack some of the capacities that human beings have: "The question is not, Can they reason? nor, Can they talk? but, Can they suffer?" (Bentham 1781/1907, Ch. XVII). Bentham believes that animals, because of their capacity for suffering, have interests that are morally important and should be protected by law, and points out that humans have direct moral duties to animals, the most important of which is not to cause their unnecessary suffering.

Bentham's view has had a significant impact on our understanding of animals and the protection of their welfare: today, it is generally accepted that many animals are sentient beings with a wide range of emotions, and that it is not morally justifiable to harm them (unnecessarily). However, animals still have the status of things or human property, and do not have rights protected by law. The current practices of treating animals include: the daily killing of billions of animals that are raised on factory farms in inhumane conditions; using a great number of animals in experiments and biomedical testing, as well as in the entertainment industry, and the annual killing of hundreds of millions of animals by hunters and for their fur. Our treatment of animals is strikingly at odds with our knowledge about the nature of their emotional lives and our views on moral issues.

It is clear that the present day understanding of morality and law is markedly anthropocentric – only humans are considered to be moral subjects and therefore, only humans can be legal persons. Animals are excluded from the moral community and are not moral subjects, so they cannot be legal persons either. The current legal status of animals can be compared to the status of slaves in ancient times - they are things or "animate property," a term used by Aristotle for human slaves (Cavalieri & Singer 1993). Like slaves at that time, animals are absolutely subordinate to humans today: they are bought and sold like objects and constitute human property. Although our treatment of different animals varies im-

mensely – from providing gentle care for our beloved pets, to blatant animal abuse on factory farms - what all these animals have in common is that they have no control over their lives. However, unlike ancient slaves, animals cannot rebel or fight to change their legal status - people are the ones who have to grant them a different status.

In this paper, I support the thesis that the legal status of animals as things, or property, limits the legal protection they can have, because things have no interests and possess only instrumental value – they are a means of achieving the ends of humans (Francione 1995). I discuss the key argument for the thesis that the legal status of animals should be changed, i.e. that they have, or can have, their own interests or well-being. The fundamental criterion of having interests is considered to be sentience, or animals' capacity to experience suffering and pleasure, which is a prerequisite for having any interests in their well-being (Singer 1975; Regan 1985, 2003; DeGrazia 1996). I concur that someone's interests are best protected by legal means and argue that as long as animals are objectified in law, they cannot be legally protected and their interests will be systematically ignored for the benefit of humans. I thus conclude that in order to protect animals' welfare and interests, it is necessary to abolish their legal status as *things*, or property, and recognize that they belong to the legal category of *sentient beings*.

ARGUMENTS FOR CHANGING THE STATUS OF ANIMALS

The basis of the current moral and legal status of nonhuman animals is the argument that they lack some cognitive and emotional capacities that human beings have. Greater value is attached to typically human capacities and associated experiences, undervaluing the capacities and experiences which are either more developed in animals or which humans lack. Because animals lack many capacities that human beings have, the common belief is that their level of well-being is lower than that of humans (McMahan 2015). Nevertheless, an animal can have a good life and be happy, even though it has a comparatively low level of well-being. An important distinction should be made here between *well-being*, or welfare, and *faring well*. The subjective quality of life of a sentient animal that fares well is not necessarily lower than the quality of life of a human who fares well (DeGrazia 2016).

The question is why belonging to the human species should be morally relevant; human beings belong to various natural kinds, such as mammals, living beings, etc. Ascribing moral considerability to all humans simply because they belong to the species *Homo sapiens* is clearly *speciesism* – a bias in favour of the members of one's own species. Belonging to the human species ought not to be a morally relevant criterion, nor is it essential for having rights.

One of the compelling arguments for the moral considerability of animals is *the argument from marginal cases* (the AMC). 'Marginal cases' refer to human beings who lack some of the characteristic features that are traditionally considered to be morally relevant - rationality, autonomy, self-consciousness, use of language, etc. Marginal cases include: 'pre-moral' humans or infants who will become moral beings if they develop normally; 'post-moral' human adults who used to be moral but are no longer so because of their old age or illness (dementia); and 'non-moral' human adults who have never been, nor will they ever be, members of the moral community due to some serious mental illness or accident (Scruton 2000, p. 42).

The AMC challenges the traditional view that animals do not have moral standing, or have slight moral standing, because they do not have the aforementioned morally relevant characteristics. It points out that the so-called marginal humans do not have these morally relevant characteristics to a degree that is sufficient for moral status, while these capacities are more developed in some animals than they are in some human beings. Thus, if marginal humans are morally considerable, then animals with similar morally relevant capacities should be morally considerable too. For the sake of consistency, if moral status is ascribed to marginal humans, then it cannot be denied to relevantly similar animals; on the other hand, if animals are not morally considerable, then neither are marginal humans (Tanner 2006, p. 50). In other words, we have to admit either that marginal humans have slight moral status like animals, or that animals have the same moral status as marginal humans.

Having this in mind, those who argue that only humans have moral status ought to show that all human beings, including marginal cases, have some morally relevant characteristic or characteristics that no animals have. However, scientific evidence available today indicates that all the characteristics and capacities human beings have can be found, to some degree, in nonhuman animals too. Many scientists point out that the difference between humans and other animals is only a difference in degree, not a difference in kind (Darwin 1871/1981; Panksepp 2011).

THE CURRENT LEGAL STATUS OF ANIMALS
AND CHANGES IN LEGISLATION

In view of the above arguments and scientific evidence, which indicates that many animals are sentient beings, and given that it is widely accepted that humans evolved from other animals, it seems that the adequacy of the legal status of animals ought to be reconsidered. The current legal status of animals is in the 'grey zone' - between the status of things and the status of sentient beings. Legally, they still fall into the category of 'things' or 'property', although they are not considered to be mere

things but *living property* protected by special laws, such as animal welfare laws. But the problem with this legal classification of animals as objects/property seems to be that the law in effect objectifies animals in this way (Shyam 2015). Treating animals like objects is not justifiable because they are sentient and have their own, morally relevant interests.

In other words, the legislation at the national and international level does not adequately reflect scientific knowledge about animal sentience. Scientific evidence from various fields, such as cognitive ethology, comparative and evolutionary psychology, neurobiology, and other related areas, suggests that many animals are sentient to some degree, or at least that all vertebrate species are. Accordingly, at least these animals should be regarded by law as sentient beings, and not as things or property. The recognition of animal sentience in legislation is essential for changing human perception of nonhuman animals, and it is the basis for introducing specific policies and procedures that will ensure the protection and improvement of animal welfare.

In reality, animals are still largely treated as objects, and they are considered to be things or human property in the eyes of the law. The status of animals as things makes it impossible to compare the interests of humans and animals in a meaningful way, while current laws do not recognize at all that animals have their own interests which should not be disregarded for the sake of human benefit. However, the situation has started to change, and several countries in Europe and worldwide have recognized in their civil codes that animals are not things, or even that they are sentient beings.

Countries which Recognize that Animals are Not Things

In the last few decades, several countries have modified their civil codes in order to recognize that animals are not things. The provision that animals are not things and that they are protected by special laws was first introduced by Austria in its Civil Code in 1988 (Austrian Civil Code, art. 285a). In addition, the Austrian Civil Code stipulates that the laws relating to objects do not apply to animals, unless there is a provision to the contrary. Similar provisions were introduced by Germany in its Civil Code in 1990:

> Animals are not things. They are protected by special statutes. They are governed by the provisions that apply to things, with the necessary modifications, except insofar as otherwise provided (German Civil Code, section 90a).

Like Austria and Germany, Switzerland also acknowledged that animals are not things, in 2003. After these countries, several other countries changed their civil codes in a similar way, including the province of Catalonia, in 2006, the Netherlands, in 2011, the Czech Republic, in

2012, and others. Outside the European Union, apart from Switzerland, Moldova has also introduced in its Civil Code a provision that animals are not considered things and that they are protected by special laws. However, provisions relating to things still apply to animals, except in cases specified by law (Moldova Civil Code, art. 287).

The civil codes of all these countries recognize that animals are distinct from ordinary things: they have the so-called 'non-thing' status. This negative definition of animals as *non-things* is certainly a shift away from the false premise on which all these laws are based - that animals are things; still, it has limited value because it has no theoretical or practical consequences. In effect, these provisions are declarative in nature: although animals are no longer things legally, they are still treated as things. Animals have the status of 'non-thing things', which is paradoxical (Brels 2016).

What is lacking here is a definition that would clarify the legal status of animals, or specify a special legal category to which animals belong. Due to the absence of such a special legal category, the legal status of animals has not *de facto* changed. Even though the extent to which animals are subject to laws that apply to things has been reduced, if there are no special animal protection laws, they are still subject to laws and legal provisions that relate to things (Michel & Kayasseh 2011, p. 20). However, these changes improve the legitimacy of animal welfare laws and lead to the formulation of better standards for the protection of animal welfare, which is precisely what happened in Austria and Switzerland. It is also significant that the Constitutions of these countries contain animal protection provisions, i.e. there is a constitutional basis for their animal welfare laws.

Countries which Recognize that Animals are Sentient Beings

The most important legal document of the EU rejects the notion of animals as things or property, and recognizes that animals are sentient beings. The Lisbon Treaty of 2009 (art. 13) stipulates that Member States must take into account animal welfare, and it sets the minimum standards to be adhered to in legislation.

The positive definition of animals as sentient beings is certainly a step forward compared to the previously discussed negative definition. This positive definition can be found in the civil codes of some countries, such as France (introduced in 2015), Quebec (in 2015), New Zealand (2015), Colombia (2016), and quite recently, Spain (2021). Unlike Austria, Germany, and other countries that have adopted a negative definition of animals as non-things in their civil codes, which prevents practical i.e. legal consequences, France defines animals in a positive way, as sentient living beings:

> Animals are living beings endowed with sentience. Subject to the laws that protect the animals, they are subject to the regime of property. (French Civil Code, art. 515-14).

By defining animals as living, sentient beings that are distinct from goods or property, their autonomous legal status is justified by their capacity for sentience, supported by scientific evidence (Giménez-Candela 2015). This modification of the legal status of animals in the French Civil Code took place under the influence of the social climate of growing interest in this issue, and social demands to ensure the better protection of animals, following years of parliamentary debates on and discussions of this problem.

Following the example of France, a year later, Colombia modified its Civil Code and its Criminal Code, introducing a positive definition of animals as sentient beings. Thus, Colombia became the first country in South America to recognize that animals are sentient beings. These changes were preceded by a prolonged discussion and exchange of views involving jurists and experts in the field, with the participation of animal welfare organizations. One of the convincing arguments used, apart from the fact that great progress had already been made in this field at the international level, pointed to a potential link between animal abuse and violence against people. In early 2016, the Colombian Congress approved the Bill (number 172) as a Law of the Republic, which reformed the National Animal Protection Statute of 1989, the Colombian Civil Code, the Criminal Code and the Criminal Procedure Code (Contreras 2016). This Law establishes that:

> Animals as sentient beings are not things, they will receive special protection against suffering and pain, in particular, suffering and pain caused directly or indirectly by humans; this Law classifies some behaviours related with animal abuse as punishable and establishes a police and legal enforcement procedure. (Law No. 1774, art. 1)

The Colombian Civil Code was modified to recognize that animals are sentient beings distinct from things, which means that animals belong to the new legal category of *sentient beings*. In addition, related laws were also amended in order to harmonize the entire legal framework. Accordingly, it was necessary to amend the Criminal Code too, by introducing harsher penalties for animal abuse and abandonment, including fines and prison sentences. Of course, the Law applies to sentient animals – vertebrates, and it protects the interests of these animals in not being abused. Such comprehensive modifications of the legal framework ensure the existence of practical legal procedures that guarantee the protection of animal welfare and their interests.

However, although both the Lisbon Treaty and the civil codes of several countries recognize that animals are sentient beings, or at least

that they are not things, these changes are primarily a theoretical advance. In all these countries, animals are still treated as things and can be used as objects or goods, that is, they can be bought, sold, exploited and disposed of. Despite the progress made in terms of improving the laws relating to the status of animals and their welfare, it usually has limited value unless mechanisms for their enforcement and accountability are established. This should be taken into account when it comes to the Civil Code of the Republic of Serbia.

The Legal Status of Animals in Serbia

The Republic of Serbia is among the few countries with continental legal systems that do not have a civil code, even though Serbia was among the first countries in Europe, after France and Austria, to adopt a civil code - the 1844 Civil Code of the Kingdom of Serbia (Avramović 2018). This Serbian Civil Code was modelled on the Austrian Civil Code and was in effect for a little over a hundred years, until it was abolished in 1946. The drafting of a modern-day Civil Code of the Republic of Serbia was initiated in 2002 at the Kopaonik School of Natural Law, and in 2006 the Government of the Republic of Serbia formed the Commission for drafting the Civil Code. Over the last fifteen years, the drafting of text of the Serbian Civil Code has been in progress, and so far three preliminary drafts have been prepared.

The latest version of the preliminary draft of the Serbian Civil Code from 2019 classifies animals as things or property: "The objects of subjective rights are animals, things, human actions, personal goods, products of the human mind" (Preliminary Draft of the Civil Code of the Republic of Serbia, art. 127). The Preliminary Draft stipulates that the legal provisions relating to things apply to animals, unless otherwise specified by special laws: "The provisions of the Code relating to objects apply to animals on issues that are not regulated by special laws" (Ibid, art. 144).

On the other hand, the Serbian Animal Welfare Law of 2009 recognizes that many animals (all vertebrates) are sentient beings. The starting point for taking into account the welfare of animals in the Law is animal *sentience* - their capacity to experience pain, suffering, fear, and stress. The basic provisions of the Animal Welfare Law stipulate that it refers to sentient animals, defined as a "vertebrate capable of experiencing pain, suffering, fear, and stress" (Animal Welfare Law, art. 5, cl. 13).

The Animal Welfare Law emphasizes the capacity of animals to feel pain and suffering; accordingly, the focus is placed on preventing the maltreatment of animals or causing unpleasant experiences in them, i.e. the focus is on animal protection from physical and emotional abuse that would cause their pain, suffering, fear, stress, injury or death (Ibid, art. 5, cl. 18, par. 1). The main value of this Law is that it recognizes the duty of all people to respect animals and to take care of their lives, health and

well-being (Ibid, art. 3, par. 2; art. 4, cl. 1 and 2). This is especially important when it comes to animals that are directly dependent on humans (Ibid, art. 6, par. 2), and so animal 'owners' or 'keepers' are held accountable for their lives, and for the protection of their health and well-being (Ibid, art. 5, clauses 3 and 10).

In order to have a consistent national legal framework, which would be in compliance with the Lisbon Treaty, it would be reasonable and justifiable to recognize in the Serbian Civil Code, currently being drafted, that animals are not things, or that they are sentient beings protected by special laws, such as the Animal Welfare Law. Regardless of the fact that Serbia is not a member of the EU, it is argued here that we should follow the positive example of states that have introduced such provisions in their civil codes, recognizing the legal status of animals as 'non-things', or better yet, as 'sentient beings'.

The positive definition of animals as sentient beings is undoubtedly an improvement over the negative definition of animals as 'non-things' for the reasons mentioned above. In addition, having learned a lesson from the countries that modified their civil codes in this manner, this paper argues that it is imperative to modify and amend the laws related to the Civil Code, primarily the Criminal Code, to ensure that they are in line with these changes. This would make the legal framework coherent and ensure a consistent application of the Code, so that the new legal status of animals can actually be enforced.

CHANGING THE LEGAL STATUS
OF ANIMALS THROUGH LITIGATION

A different approach to changing the legal status of nonhuman animals is through litigation. This approach has been used in the United States and Argentina, where several lawsuits have been filed on behalf of individual animals, primarily great apes and other intelligent mammals, in order to free them. The *Nonhuman Rights Project* (NhRP) organization and its founder Steven M. Wise advocate changing the legal status of at least some animals to recognize that they are not mere things existing for the sake of humans, but rather nonhuman legal persons that have fundamental rights to bodily integrity and liberty. There have been several cases of judicial discussions of the legal status of an animal, its right to freedom, and the recognition of that right.

The first case to discuss in a court of law whether an animal was illegally detained and could be considered a legal person is the case of the chimpanzee Suiça, who was caged at the Salvador Zoo in Brazil. In 2005, petitioners sought her release and her transfer to the Great Primates sanctuary based on the common law procedure *habeas corpus*. The writ of *habeas corpus* is a legal instrument used for determining the legality of

someone's detention, and this was the first time it was used in a lawsuit aimed at releasing an animal. Unfortunately, the chimpanzee died in the meantime and the case was dismissed.

In 2013, the NhRP filed a petition with the Supreme Court of the State of New York, demanding the release of the chimpanzee Tommy and his transfer to an animal sanctuary on the grounds that he lived in a place that cannot be considered his natural environment (Mountain 2013). In addition to this lawsuit, three more suits were filed that same year, aimed at releasing three more chimpanzees – Kiko, Hercules and Leo. These lawsuits were also based on the procedure *habeas corpus*, arguing that captive chimpanzees are in fact imprisoned, and that the same principles that apply to imprisoned humans should also apply to chimpanzees.

In the first case brief, it is stated that Tommy is not a thing to be owned, but "a cognitively complex autonomous legal person with the fundamental legal right not to be imprisoned" (Gorman 2013). The Court rejected the petitions for the release of Tommy and Kiko, and ruled that a chimpanzee is not a legal person that is entitled to *habeas corpus* relief. The explanation of the Court's decision in these cases was that, although chimpanzees and humans share many cognitive, social, and behavioral capacities, chimpanzees cannot bear legal responsibility like humans or be held legally accountable.

As for the chimpanzees Hercules and Leo, who were used in experiments at the New Iberia Research Center (NIRC) on Long Island, a separate lawsuit was filed on their behalf in December 2013 seeking their release and transfer to a sanctuary. In this case too, both the County Supreme Court and the Appellate Division reached decisions that denied the rights of these chimpanzees to be protected by the writ of *habeas corpus*. However, these proceedings can be considered a small but significant procedural victory in the struggle for animal rights. Namely, Justice Jaffe signed the order to show cause, directing the NIRC to demonstrate the basis for detaining the chimpanzees, which can be interpreted as an implicit recognition that it is justified to seek a writ of *habeas corpus* in the case of nonhuman animals.

Jaffe states in her decision that the concept of 'legal personhood' is not necessarily synonymous with 'human being', and that this concept - who or what is legally considered a person – has evolved significantly over the centuries and will continue to evolve. For example, women used to be considered the property of their husbands or male family members and had only some rights, while slaves were treated even worse, as property with few rights or none at all. Although this decision upheld the previous court ruling that chimpanzees could not be released under the writ of *habeas corpus*, the NIRC decided to discontinue using these two chimpanzees in research, to release them, along with many other chimpanzees, and to allow their transfer to a sanctuary.

Recent examples from South America can be considered great progress in the efforts to change the legal status of at least some nonhuman animals. In Argentina, a historic court ruling was made in 2014, which approved the release of orangutan Sandra from a zoo in Buenos Aires, and recognized that she had been unlawfully deprived of her liberty. In addition, Sandra was granted the status of a 'non-human person' who deserves basic rights such as the right to life, liberty, and freedom from torture (Barkham 2014). The most recent case is the court decision from 2016, which is considered a milestone in the field of animal rights. It concerns the chimpanzee Cecilia from the Mendoza Zoo in Argentina, whose rights were recognized in the decision. The Court ordered her release from the Zoo and her transfer to a sanctuary for great apes. In this lawsuit, the writ of *habeas corpus* was also used, and the judge declared that Cecilia is not a thing but a non-human person, a subject of rights that are inherent in sentient beings. Judge Mauricio stated that the rights which non-human animals have are not the same as human rights, but the rights of their species - to live in their natural environment and to develop. In her closing remarks, the judge quotes Kant: "We can judge the heart of a man by his treatment of animals" (Kant 1784-5/1997, p. 212).

Initiating court cases is an attempt to change the legal status of nonhuman animals in order to reform the laws relating to animals through the courts and not Parliament, i.e. through legislation. Such an approach to this issue is effective primarily in legal systems based on case law, which applies to countries with the Anglo-Saxon tradition. If a court decides that a particular animal is a legal person and should be released under the writ of *habeas corpus*, it sets a precedent that can also benefit other animals of the same species. Even in these countries, this way of initiating change is quite slow and expensive, and only the animals on whose behalf the lawsuit was filed and who are the subjects of a writ of *habeas corpus* can benefit from it directly. However, it makes it easier to file a petition for the release of animals that belong to other species but have similar cognitive capacities (Shyam 2015).

On the other hand, when it comes to countries with continental legal systems, such as Serbia, the benefits of initiating such lawsuits are not obvious. However, such lawsuits, even if they are not successful, can be an indirect way of initiating change because they draw attention to the problem in question. As a rule, the media closely monitor and report on such court cases, and these reports raise the awareness of the legal status of animals and can lead to greater public support. Furthermore, this can initiate public and professional debate on the issue and as a result, it can bring about an initiative to change and amend laws relating to the legal status of animals and their welfare.

CONCLUSION: ANIMALS AS SENTIENT BEINGS WITH RIGHTS

Distinguishing animals from things in legislation and singling them out as a distinct category of 'sentient beings' is the first step towards granting them basic rights that would protect their interests. In fact, a significant improvement in the treatment of animals can only be achieved by such a change in their legal status, because someone's interests and welfare are best protected through having rights. Legal rights are, in fact, protected interests: "Namely, every subjective right is a right to protection of interests, which a legal person achieves through legal means" (Paunović 2004, p. 173, n. 270).

It can be argued that even the so-called 'Five Freedoms' are actually minimum rights (liberty-rights) that apply to animals, or can be reformulated as rights. The Five Freedoms principle was conceived by F. W. R. Brambell in the mid-1960s, when, at the British Government's request, he chaired a committee for assessing the welfare of animals raised on farms. In its report, the Brambell Committee defined the principles of animal welfare, and concluded that at least these minimum conditions should be met to ensure the welfare of farm animals: sufficient freedom of movement, companionship, and adequate food and drink. In the late 1970s, the Farm Animal Welfare Council (FAWC)[1] revised and improved these welfare standards, and they still exist in a similar form as the Five Freedoms: Freedom from hunger, thirst, and malnutrition, Freedom from discomfort, Freedom from pain, injury, and disease, Freedom to express normal behaviour, and Freedom from fear and distress. The Five Freedoms are the bedrock not only of British but also of European legal regulations relating to the protection of animal welfare, including the Serbian Animal Welfare Law. In line with the above view, it could be argued that the laws based on these standards in fact protect the rights granted to animals.

Cochrane (2013) argues that all sentient beings possess at least some basic rights because they have interests, and all interest-holders possess rights. He suggests that human rights should be re-conceptualised as *sentient rights.* Wise (2010) advocates the revision of legislation to recognize that a nonhuman animal, such as a chimpanzee or a dolphin, has the capacity to possess at least one legal right. This refers primarily to fundamental legal rights to bodily liberty and bodily integrity, which are rights as immunities that protect the fundamental interests of a being. These *immunity-rights* are based on negative liberty-rights ('freedom from') that imply freedom from legal obligations.

This would mean that animals are only holders of legal rights, but without any legal obligations or liability. On the other hand, humans would have direct duties to animals that correlate with the rights of ani-

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[1] Now the Animal Welfare Committee (AWC).

mals, so that a breach of those duties would constitute an offence against them. Animal rights could be looked after by legal representatives who would guarantee the exercise of their rights, because just like 'marginal' human beings, animals cannot demand the protection of their rights. But this might not be necessary after all, since animal rights could be protected by enacting relevant laws and enforcing them consistently.

However, in order to extend fundamental legal rights to nonhuman animals, animals first need to be moved out of the legal category of *things* and into the legal category of *sentient beings* that can bear rights. In this paper, I have discussed such a change of the legal status of animals, which has already been underway in several countries in Europe and beyond.

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ПРОМЕНА ПРАВНОГ СТАТУСА ЖИВОТИЊА: ЗАКОНОДАВСТВО И СУДСКИ СПОРОВИ

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Резиме

Главна сврха овог рада је да укаже на то да данашњи правни статус не-људских животиња као ствари, или својине, више није прикладан, нити је у складу са научним сазнањима о природи животиња. У раду се заступа тврдња да је неопходно променити правни статус животиња како би се признало да оне нису ствари већ осећајна бића, и доводи се у питање аргументација која је у основи оваквог правног статуса животиња. Разматрају се кључни аргументи који поткрепљују тезу о моралној релевантности животиња као што је аргумент маргиналних случајева и научна евиденција која указује на то да су многе не-људске животиње осећајна бића. Покушај промене правног статуса животиња подразумева два главна приступа, у зависности од правног система одређене државе: путем законодавних промена и путем покретања судских спорова у име појединачних животиња. Што се тиче законодавних промена, наводе се примери неколицине држава у Европи и ван Европе које су у протекле три деценије измениле своје грађанске законике како би признале животињама статус не-ствари, односно осећајних бића, што је признато и у Лисабонском уговору. Разматра се и ситуација у Србији, у којој Грађански законик Републике Србије тек треба да се донесе, а у којој се животиње законом још увек сматрају стварима или људском својином. У раду се брани тврдња да би било упутно да се у српском Грађанском законику животињама призна статус осећајних бића, или барем да се призна да нису ствари. Поред законодавних промена, покретање судских спорова у САД и јужноамеричким земљама ради ослобађања одређених животиња довело је до значајнијег помака у залагању за промену правног статуса животиња. У некима од ових судских поступака животиње су ослобођене на основу правне стратегије ha-

beas corpus и чак им је признат статус не-људског правног субјекта. Овде се подржава тврдња да би животиње са комплексним когнитивним и емоционалним способностима требало да имају посебан статус пасивних правних субјеката, док би осталим осећајним животињама требало укинути правни статус ствари или својине, и признати им статус осећајних бића која могу да имају права како би се истински заштитила њихова добробит и интереси.

INSTRUCTIONS FOR AUTHORS ON PAPER PREPARATION

Formatting. Papers should be sent as *Microsoft Office Word* files (version 2000, 2003, 2007), font *Times New Roman*, font size 12. Page setup margins should be 2.5 cm (top, bottom) and 2.5 cm (left, right), paper size A4 (210 mm x 297 mm).Paragraphs should be formatted with line spacing 1.5, and justified (Format, Paragraph, Indents and Spacing, Alignment, Justified). Do not break words at the end of the line.

Paper length. Research papers should not exceed 37.000 characters (spaces included), and reviews should not be longer than 8.000 characters (spaces included).

Language, alphabet. The languages of publication in the TEME is English (font *Times New Roman*). Contributions be rejected if the language is not at the appropriate level of correctness and style. If the authors wish to increase the visibility of their papers, they are supposed to submit Serbian version of the article as well (as Supplementary file - Word format, using the Cyrillic alphabet).

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The author should remove from the text of the paper all the details that could identify him/her as the author. Authors must enter all the necessary data during the electronic submission of the paper.

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➢ **Paper title in English**
➢ **Abstract in English** 100 to 250 words, followed by 5 key words.
➢ The title and the abstract of the paper should be directly linked to the paper content, with no information that would identify the author(s) of the paper.
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➢ The paper should follow the **IMRAD** structure (Introduction, Methods, Results and Discussion), when it presents an empirical study
➢ **Paper body** should not contain more than three levels of subdivision into *sections* and *sub-sections*. Level one sections should be introduced by headings printed in *Italic* and in *CAPITAL LETTERS,* formatted as centred. Level two sections should be introduced by headings in *Italic*, with the initial capital letter, formatted as centred. Level-one and level-two headings should be separated from the previous text by one line. Level three sections should be introduced by a heading printed in *Italic*, but placed as a regular paragraph, separated by a full-stop from the text that follows.

Each paragraph should have the first line indented (1 cm).

In-text citations: Whenever referring to a source (monograph, article, statistical source), the author should cite the source in the text, using the

author-date system (Surname, year of publication, pages referred to, all in brackets) – Please, refer to the table at the end of these *Instructions*.

▪ When referring to several works by the same author, provide all the years of publication chronologically after the author's name. If there are several works by the same author published the same year, provide further specification using letters (a, b,...) after the year of publication: "...confirming this hypothesis (Wuthnow, 1987a, p. 32)...".

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Direct quotations can be included in the text if not longer than 20 words. Longer quotations should be given as separate paragraphs, spaced-out from the previous and following text, and with the following formatting: Format, Paragraph, Indents and Spacing, Left 1 cm, Right 1 cm, Line spacing – Single; for instance:

To explain how "culture through language affects the way we think and communicate with others of different background" (Gumperz, 2001, p. 35), Gumperz states:

"Conversational inference is partly a matter of a priori extra-textual knowledge, stereotypes and attitudes, but it is also to a large extent constructed through talk" (Gumperz, 2001, p.37)."

It is crucial that the in-text citations and references should match the literature listed at the end of the paper. All in-text citations and references must be listed in the References, and the References must not contain sources not referred to or cited in the text. The bibliography listed at the end of the paper should contain author names and source titles in original languages and alphabets, without translation.

Tables, graphs, and figures. Tables, graphs and figures should be numbered (sequentially), with captions explaining their content. Captions should precede tables, but follow graphs and figures. Graphs and figures must be clearly visible in the text, so they should be provided in 300dpi resolution. Graphs and figures must be single objects (no Drawing elements added). Where necessary, mathematical formulas should be added to the text using Microsoft Equation Editor.

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Journal papers and articles – 1 author

In-text citation:
(Manouselis, 2008), i.e. (Manouselis, 2008, p. 55)
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Manouselis, N. (2008). Deploying and evaluating multiattribute product recommendation in e-markets. *International Journal of Management & Decision Making, 9*, 43-61. doi:10.1504/IJMDM.2008.016041

Journal papers and articles – 2 to 6 authors

In-text citation:
First reference: (Uxó, Paúl, & Febrero, 2011)
Subsequent references: (Uxó et al., 2011)
In 'References':
Uxó, J., Paúl, J., & Febrero, E. (2011). Current account imbalances in the monetary union and the great recession: Causes and policies. *Panoeconomicus*, 58(5), 571-592.

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Institutions as authors

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In 'References':

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(Закон о основама система васпитања и образовања, 2004, чл. 5, ст. 2, тач. 3.)

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Закон о основама система васпитања и образовања, Службени гласник РС. Бр. 62 (2004)

Legal and other documents

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(Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276, 1971)

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